THIS CIRCULAR IS IMPORTANT AND REQUIRES YOUR IMMEDIATE ATTENTION

If you are in any doubt about this circular or as to the action to be taken, you should consult your licensed securities dealer or other registered dealer in securities, bank manager, solicitor, professional accountant or other professional adviser.

If you have sold or transferred all your securities in Shandong Hi-Speed Holdings Group Limited, you should at once hand this circular with the enclosed form of proxy to the purchaser or transferee or to the bank, licensed securities dealer or other agent through whom the sale or transfer was effected for transmission to the purchaser or the transferee.

山高控股集團有限公司

SHANDONG HI-SPEED HOLDINGS GROUP LIMITED

(incorporated in Bermuda with limited liability)

(Stock Code: 412)

MAJOR TRANSACTION
PROPOSED SUBSCRIPTION OF SHARES IN
VNET GROUP, INC.

Capitalised terms used in this cover shall have the same meanings as defined in this circular.

A letter from the Board is set out on pages 16 to 72 of this circular.

A notice convening the SGM to be held at Conference Room, 38/F, The Center, 99 Queen's Road Central, Central, Hong Kong on Wednesday, 27 December 2023 at 11:00 a.m. or any adjournment thereof is set out from pages SGM-1 to SGM-2 of this circular. A form of proxy for use at the SGM is also enclosed herewith. Shareholders who wish to vote are requested to complete and return the enclosed form of proxy in accordance with the instructions printed thereon to the Company's branch share registrar in Hong Kong, Computershare Hong Kong Investor Services Limited, at 17M Floor, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong as soon as possible and in any event not less than 48 hours before the time appointed for the holding of the meeting and/or any adjournment thereof (as the case may be). If you are not a registered Shareholder (if your Shares are held via banks, brokers, custodians, or the Hong Kong Securities Clearing Company Limited), you should consult your banks or brokers or custodians (as the case may be) directly to assist you in the appointment of proxy. Completion and return of the form of proxy will not preclude you from attending and voting in person at the SGM or at any adjourned meeting should you so wish.

11 December 2023

CONTENTS

In this circular, unless the context otherwise requires, the following expressions have the meanings as set out below:

"Abitcool China"	Abitcool (China) Broadband Inc.(阿比酷小微網絡科技(東莞)有限公司), a wholly foreign-owned enterprise registered in the PRC
"ADS"	American depository shares representing class A ordinary shares of the Target Company
"associates"	has the same meaning ascribed thereto it under the Listing Rules
"Beijing iJoy"	Beijing iJoy Information Technology Co., Ltd.(北京閱聯信息技術有限公司), a limited liability company registered in the PRC
"Beijing VNET"	Beijing VNET Borad Band Data Center Co., Ltd.(北京世紀互聯寬帶數據中心有限公司), a limited liability company registered in the PRC
"Beijing Yiyun"	Beijing Yiyun Network Technology Co., Ltd.(北京毅雲網絡科技有限公司)(formerly known as 21 ViaNet System Limited(北京世紀互聯信息系統有限公司) and Beijing Abiku Network Technology Co., Ltd.(北京阿比酷網絡技術有限公司)), a limited liability company registered in the PRC
"Board"	the board of Directors
"Business Day(s)"	any day except a Saturday, a Sunday or other day on which the SEC or banks in the State of New York, PRC, Hong Kong or the Cayman Islands are authorised or required by applicable laws to be closed
"BVI"	the British Virgin Islands
"Call Option Agreement"	each of the following agreements: (a) in relation to Beijing iJoy, the Exclusive Call Option Agreement (Beijing iJoy);

	(b) in relation to Beijing Yiyun, the Optional Share Purchase Agreement (Beijing Yiyun);
	(c) in relation to Shanghai Zhiyan, the Exclusive Call Option Agreement (Shanghai Zhiyan); and
	(d) in relation to Wifire Beijing, the Exclusive Call Option Agreement (Wifire Beijing),
	and "Call Option Agreements" means all of them collectively
"Chen Sheng"	CHEN Sheng (陳升), a PRC citizen
"Closing"	closing of the Subscription in accordance with the terms and conditions under the Investment Agreement
"Closing Date"	has the same meaning ascribed thereto under the paragraph headed "Closing" in the section headed "Letter from the Board" in this circular
"Company"	Shandong Hi-Speed Holdings Group Limited (山高控股集團有限公司), a company incorporated in Bermuda with limited liability and the shares of which are listed on the Main Board of the Stock Exchange (Stock Code: 412)
"Competitors"	entities whose names are set out in a schedule to the Investment Agreement as competitors of the Target Company, which may be updated by the Target Company in accordance with the Investment Agreement, and their respective affiliates
"Conditions Precedent"	the conditions precedent to the Closing under the Investment Agreement
"connected person(s)"	has the same meaning ascribed thereto under the Listing Rules
"Consideration"	an aggregate consideration of US$299,000,000 under the Subscription Agreement, which comprises Consideration-A and Consideration-B

"Consideration-A"	the subscription price of US$209,300,000 (equivalent to approximately HK$1,632,540,000) payable by Investor-A to the Target Company for the Subscription Shares-A under the Subscription Agreement
"Consideration-B"	the subscription price of US$89,700,000 (equivalent to approximately HK$699,660,000) payable by Investor-B to the Target Company for the Subscription Shares-B under the Subscription Agreement
"Contractual Arrangements"	the contractual arrangements under the VIE Contracts
"Directors"	the directors of the Company
"Equity Pledge Agreement"	each of the following agreements: (a) in relation to Beijing iJoy, the Equity Pledge Agreement (Beijing iJoy); (b) in relation to Beijing Yiyun, the Equity Pledge Agreement (Beijing Yiyun); (c) in relation to Shanghai Zhiyan, the Equity Pledge Agreement (Shanghai Zhiyan); and (d) in relation to Wifire Beijing, the Equity Pledge Agreement (Wifire Beijing), and "Equity Pledge Agreements" means all of them collectively
"Equity Pledge Agreement (Beijing iJoy)"	the amended and restated equity pledge agreement (經修訂和重述的股權質押協議) dated 18 July 2019 entered into by Joytone Infotech, Peng Yang and Shanghai Yunshiji, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (1) The VIE Contracts (Beijing iJoy)" of this circular
"Equity Pledge Agreement (Beijing Yiyun)"	the equity pledge agreement (股權質押協議) registered on 24 October 2023 entered into by VNET Data Center, Beijing Yiyun, Chen Sheng and Zhang Jun, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (2) The VIE Contracts (Beijing Yiyun)" of this circular

"Equity Pledge Agreement (Shanghai Zhiyan)"	the equity pledge agreement (股權質押協議) dated 10 December 2020 entered into by Shanghai Edge Connect and Shanghai Rongyan, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (3) The VIE Contracts (Shanghai Zhiyan)" of this circular
"Equity Pledge Agreement (Wifire Beijing)"	the equity pledge agreement (股權質押協議) dated 11 January 2021 entered into by Abitcool China and Chen Sheng, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (4) The VIE Contracts (Wifire Beijing)" of this circular
"Exclusive Call Option Agreement (Beijing iJoy)"	the amended and restated exclusive call option agreement (經修訂和重述的獨家購買權協議) dated 18 July 2019 entered into by iJoy Holding, Peng Yang, Shanghai Yunshiji and Beijing iJoy, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (1) The VIE Contracts (Beijing iJoy)" of this circular
"Exclusive Call Option Agreement (Shanghai Zhiyan)"	the exclusive call option agreement (獨家購買權協議) dated 10 December 2020 entered into by Shanghai Edge Connect, Shanghai Rongyan and Shanghai Zhiyan, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (3) The VIE Contracts (Shanghai Zhiyan)" of this circular
"Exclusive Call Option Agreement (Wifire Beijing)"	the exclusive call option agreement (獨家購買權協議) dated 11 January 2021 entered into by WiFire Group, Chen Sheng and Wifire Beijing, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (4) The VIE Contracts (Wifire Beijing)" of this circular
"Exclusive Services Agreement (Wifire Beijing)"	the exclusive services agreement (獨佔性服務協議) dated 11 January 2021 entered into by Abitcool China and Wifire Beijing, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (4) The VIE Contracts (Wifire Beijing)" of this circular

"Exclusive Technical Consulting Agreement"	each of the following agreements: (a) in relation to Beijing iJoy, the Exclusive Technical Consulting Agreement (Beijing iJoy); (b) in relation to Beijing Yiyun, the Exclusive Technical Consulting Agreement (Beijing Yiyun); (c) in relation to Shanghai Zhiyan, the Exclusive Technical Consulting Agreement (Shanghai Zhiyan); and (d) in relation to Wifire Beijing, the Exclusive Technical Consulting Agreement (Wifire Beijing), and "Exclusive Technical Consulting Agreements" means all of them collectively
"Exclusive Technical Consulting Agreement (Beijing iJoy)"	the exclusive technical consulting and services agreement (獨家技術諮詢和服務協議) dated 30 October 2012 entered into by Joytone Infotech and Beijing iJoy (as amended and supplemented by a supplemental agreement (獨佔性服務協議補充協議) dated 30 July 2013), the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (1) The VIE Contracts (Beijing iJoy)" of this circular
"Exclusive Technical Consulting Agreement (Beijing Yiyun)"	the exclusive technical consulting and services agreement dated 19 December 2006 entered into by VNET Data Center, Beijing Yiyun and Beijing VNET (as amended and supplemented by a supplemental agreement (獨家技術諮詢和服務協議之補充協議) dated 19 December 2016), the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (2) The VIE Contracts (Beijing Yiyun)" of this circular
"Exclusive Technical Consulting Agreement (Shanghai Zhiyan)"	the exclusive technical consulting and services agreement (獨家技術諮詢和服務協議) dated 10 December 2020 entered into by Shanghai Edge Connect and Shanghai Zhiyan, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (3) The VIE Contracts (Shanghai Zhiyan)" of this circular

"Exclusive Technical Consulting Agreement (Wifire Beijing)"	the exclusive technical consulting and services agreement (獨家技術諮詢和服務協議) dated 11 January 2021 entered into by Abitcool China and Wifire Beijing, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (4) The VIE Contracts (Wifire Beijing)" of this circular
"Founder Shareholders Group"	the group of founder shareholders of the Target Company which comprises Chen Sheng and four companies incorporated in the BVI , namely GenTao Capital Limited, Fast Horse Technology Limited, Sunrise Corporate Holding Ltd. and Personal Group Limited (the "**Founder Entities**"), each of which is directly and wholly-owned by Chen Sheng and principally engages in investment holding, and in aggregate hold 3.36% of the total issued and outstanding Target Company Shares (excluding treasury shares and class A ordinary shares in the form of ADSs that are reserved for issuance upon the exercise of share incentive awards of the Target Company). To the best of the knowledge, information and belief of the Directors, having made all reasonable enquiries, each of the members of the Founder Shareholders Group are all Independent Third Parties
"Group"	collectively the Company and its subsidiaries
"Guidance Letter"	Guidance Letter HKEX-GL77-14 "Guidance on Listed Issuer Using Contractual Arrangements for Their Businesses" issued by the Stock Exchange
"HKFRS"	the Hong Kong Financial Reporting Standards issued by the Hong Kong Institute of Certified Public Accountants from time to time
"HK$"	Hong Kong dollar, the lawful currency of Hong Kong
"Hong Kong"	Hong Kong Special Administrative Region of the PRC
"iJoy Holding"	iJoy Holding Limited, a BVI business company incorporated in the BVI
"Independent Third Party(ies)"	person(s) who and whose ultimate beneficial owners are, to the Directors' best knowledge and belief having made all reasonable enquiries, third parties independent of the Company and its connected persons

"Investment Agreement"	the investment agreement dated 16 November 2023 and entered into among the Investors as investors and the Target Company as issuer governing the Subscription
"Investor-A"	Success Flow International Investment Limited, a BVI business company incorporated in the BVI with limited liability and a direct wholly-owned subsidiary of the Company
"Investor-B"	Choice Faith Group Holdings Limited, a BVI business company incorporated in the BVI with limited liability and a direct wholly-owned subsidiary of the Company
"Investors"	collectively Investor-A and Investor-B
"Joytone Infotech"	Joytone Infotech Co., Ltd.(蘇州卓愛易信息技術有限公司), a wholly foreign-owned enterprise registered in the PRC
"Latest Practicable Date"	6 December 2023, being the latest practical date prior to the printing of this circular for ascertaining certain information contained herein
"Letter of Undertaking (Beijing iJoy – Peng Yang)"	the letter of undertaking(承諾函)dated 30 July 2013 executed by Peng Yang and Beijing iJoy in favour of iJoy Holding, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (1) The VIE Contracts (Beijing iJoy)" of this circular
"Letter of Undertaking (Beijing iJoy – Shanghai Yunshiji)"	the letter of undertaking(承諾函)dated 18 July 2019 executed by Peng Yang, Shanghai Yunshiji and Beijing iJoy in favour of iJoy Holding, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (1) The VIE Contracts (Beijing iJoy)" of this circular
"Letter of Undertaking (Beijing Yiyun)"	the letter of undertaking(承諾函)dated 30 September 2010 executed by Chen Sheng, Zhang Jun and Beijing Yiyun in favour of VNET Data Center, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (2) The VIE Contracts (Beijing Yiyun)" of this circular

"Letter of Undertaking (Shanghai Zhiyan)"	the letter of undertaking (承諾函) dated 10 December 2020 executed by Shanghai Rongyan and Shanghai Zhiyan in favour of Shanghai Edge Connect, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (3) The VIE Contracts (Shanghai Zhiyan)" of this circular
"Letter of Undertaking (Wifire Beijing)"	the letter of undertaking (承諾函) executed on 11 January 2021 by Chen Sheng and Wifire Beijing in favour of WiFire Group, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (4) The VIE Contracts (Wifire Beijing)" of this circular
"Listing Rules"	the Rules Governing the Listing of Securities on the Stock Exchange
"Loan Agreement"	each of the following agreements: (a) in relation to Beijing iJoy, the Loan Agreement (Beijing iJoy); (b) in relation to Beijing Yiyun, the Loan Agreement (Beijing Yiyun – Chen Sheng) and the Loan Agreement (Beijing Yiyun – Zhang Jun); (c) in relation to Wifire Beijing, the Loan Agreement (Wifire Beijing), and "Loan Agreements" means all of them collectively
"Loan Agreement (Beijing iJoy)"	the loan agreement (借款協議) dated 30 October 2012 entered into by Joytone Infotech and Peng Yang, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (1) The VIE Contracts (Beijing iJoy)" of this circular
"Loan Agreement (Beijing Yiyun – Chen Sheng)"	the loan agreement (借款協議) dated 28 January 2011 entered into by VNET Data Center and Chen Sheng, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (2) The VIE Contracts (Beijing Yiyun)" of this circular

"Loan Agreement (Beijing Yiyun – Zhang Jun)"	the loan agreement (借款協議) dated 28 January 2011 entered into by VNET Data Center and Zhang Jun, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (2) The VIE Contracts (Beijing Yiyun)" of this circular
"Loan Agreement (Wifire Beijing)"	the loan agreement (借款協議) dated 11 January 2021 entered into by Abitcool China and Chen Sheng, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (4) The VIE Contracts (Wifire Beijing)" of this circular
"Long Stop Date"	15 January 2024, or in the event where the PRC Anti-Monopoly Clearance has not been obtained by 15 January 2024, 30 January 2024 as may be extended by mutual agreement in writing between the Investors and the Target Company
"NASDAQ"	the NASDAQ Global Select Market
"NASDAQ Trading Day"	a day on which the NASDAQ Global Select Market and/or Global Market where the ADS are traded at the relevant time is open for business
"OPCO Group"	collectively Beijing iJoy, Beijing Yiyun, Shanghai Zhiyan and Wifire Beijing, each a "OPCO Group Company"
"OPCO Registered Shareholder"	each of the following persons: (a) in relation to Beijing iJoy, each of Peng Yang and Shanghai Yunshiji; (b) in relation to Beijing Yiyun, each of Chen Sheng and Zhang Jun; (c) in relation to Shanghai Zhiyan, Shanghai Rongyan; and (d) in relation to Wifire Beijing, Chen Sheng, and "OPCO Registered Shareholders" means all of them collectively

"Optional Share Purchase Agreement (Beijing Yiyun)"	the restated and amended optional share purchase agreement dated 27 September 2023 entered into by VNET Data Center, Beijing Yiyun, Beijing VNET, Chen Sheng and Zhang Jun, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (2) The VIE Contracts (Beijing Yiyun)" of this circular
"Peng Yang"	PENG Yang (彭揚), a PRC citizen
"Power of Attorney"	Each of the following VIE Contracts: (a) in relation to Beijing iJoy, the Power of Attorney (Beijing iJoy – Joytong Infotech), the Power of Attorney (Beijing iJoy – Peng Yang) and the Power of Attorney (Beijing iJoy – Shangahi Yunshiji); (b) in relation to Beijing Yiyun, the Power of Attorney (Beijing Yiyun – Chen Sheng) and the Power of Attorney (Beijing Yiyun – Zhang Jun); (c) in relation to Shanghai Zhiyan, the Power of Attorney (Shanghai Zhiyan); and (d) in relation to Wifire Beijing, the Power of Attorney (Wifire Beijing – Abitcool China) and the Power of Attorney (Wifire Beijing – Chen Sheng), and "Powers of Attorney" means all of them collectively
"Power of Attorney (Beijing iJoy – Joytone Infotech)"	the power of attorney (授權委託書) dated 30 July 2013 executed by Joytone Infotech in favour of iJoy Holding, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (1) The VIE Contracts (Beijing iJoy)" of this circular
"Power of Attorney (Beijing iJoy – Peng Yang)"	the power of attorney (授權委託書) dated 18 July 2019 executed by Peng Yang in favour of Joytone Infotech, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (1) The VIE Contracts (Beijing iJoy)" of this circular

"Power of Attorney (Beijing iJoy – Shanghai Yunshiji)"	the power of attorney (授權委託書) dated 18 July 2019 executed by Shanghai Yunshiji in favour of Joytone Infotech, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (1) The VIE Contracts (Beijing iJoy)" of this circular
"Power of Attorney (Beijing Yiyun – Chen Sheng)"	the power of attorney (授權委託書) dated 31 May 2007 executed by Chen Sheng in favour of VNET Data Center, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (2) The VIE Contracts (Beijing Yiyun)" of this circular
"Power of Attorney (Beijing Yiyun – Zhang Jun)"	the power of attorney (授權委託書) dated 31 May 2007 executed by Zhang Jun in favour of VNET Data Center, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (2) The VIE Contracts (Beijing Yiyun)" of this circular
"Power of Attorney (Shanghai Zhiyan)"	the power of attorney (授權委託書) dated 10 December 2020 executed by Shanghai Rongyan in favour of Shanghai Edge Connect, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (3) The VIE Contracts (Shanghai Zhiyan)" of this circular
"Power of Attorney (Wifire Beijing – Abitcool China)"	the power of attorney (授權委託書) executed on 11 January 2021 by Abitcool China in favour of WiFire Group, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (4) The VIE Contracts (Wifire Beijing)" of this circular
"Power of Attorney (Wifire Beijing – Chen Sheng)"	the power of attorney (授權委託書) executed on 11 January 2021 by Chen Sheng in favour of Abitcool China, the details which are set out in the section headed "Information of the VIE Contracts – The VIE Contracts – (4) The VIE Contracts (Wifire Beijing)" of this circular
"PRC"	the People's Republic of China which, for the purposes of the Investment Agreement and this circular only, excludes Hong Kong, the Macau Special Administrative Region of the PRC and Taiwan

"PRC Laws"	any laws, regulations, rules, notices, interpretation or other binding documents issued by any central or local legislative, executive or judicial authorities in the PRC
"PRC Legal Advisers"	Global Law Office (環球律師事務所), a qualified PRC law firm as the legal advisers to the Company as to PRC Laws for the Subscription
"Regulation S"	Regulation S of the Securities Act
"RMB"	Renminbi, the legal currency of the PRC
"SEC"	the US Securities and Exchange Commission
"Securities Act"	the Securities Act of 1933 of the US, as amended from time to time
"SFO"	the Securities and Futures Ordinance (Chapter 571, Laws of Hong Kong)
"SGM"	the special general meeting of the Company scheduled to be held at 11:00 a.m. on Wednesday, 27 December 2023 for the purpose of considering, and, if thought fit, approving, among other matters, the Investment Agreement and the transactions contemplated thereunder
"Shanghai Blue Cloud"	Shanghai Blue Cloud Technology Co., Ltd. (上海藍雲網絡科技有限公司), a limited liability company established in the PRC and a direct wholly-owned subsidiary of Shanghai Zhiyan
"Shanghai Edge Connect"	Shanghai Edge Connect Technology Co., Ltd. (上海埃治慷內科技有限公司), a wholly foreign-owned enterprise registered in the PRC
"Shanghai Rongyan"	Shanghai Rongyan Yunqi Technology Co., Ltd. (上海容沿雲器科技有限公司), a limited liability company registered in the PRC
"Shanghai Yunshiji"	Shanghai Yunshiji Information Technology Co., Ltd. (上海雲世紀信息技術有限公司), a limited liability company registered in the PRC
"Shanghai Zhiyan"	Shanghai Zhiyan Yunwei Technology Co., Ltd. (上海致沿雲惟科技有限公司), a limited liability company registered in the PRC

"Shareholder(s)"	the registered holder(s) of ordinary share(s) of the Company
"Stock Exchange"	The Stock Exchange of Hong Kong Limited
"Subscription"	the proposed subscription of the Subscription Shares by the Investors pursuant to the Investment Agreement
"Subscription Price"	US$0.4597 per Subscription Share pursuant to the Investment Agreement
"Subscription Shares"	An aggregate of 650,424,192 new class A ordinary shares to be issued by the Target Company to the Investors pursuant to the Subscription which comprises Subscription Shares-A and Subscription Shares-B
"Subscription Shares-A"	the 455,296,932 new class A ordinary shares to be allotted and issued by the Target Company and subscribed for by Investor-A at Closing
"Subscription Shares-B"	the 195,127,260 new class A ordinary shares to be allotted and issued by the Target Company and subscribed for by Investor-B at Closing.
"Target Company"	VNET Group, Inc.(世紀互聯集團*), an exempted company incorporated in the Cayman Islands with limited liability whose class A ordinary shares (in the form of ADSs) are traded under the ticker symbol "VNET" on NASDAQ
"Target Company Shares"	share(s) of the Target Company with a par value of US$0.00001 each
"Target Group"	collectively, the Target Company, its subsidiaries, and entities based in PRC controlled by the Target Company's wholly-owned subsidiaries in the PRC through contractual arrangements
"US" or "USA"	the United States of America
"US$"	United States dollars, the legal currency of the USA
"US GAAP"	United States generally accepted accounting principles

"Vector Investors"	collectively, the entities whose names are set out in the Investment Agreement as "Vector Investors", namely VECTOR HOLDCO PTE. LTD., BTO VECTOR FUND ESC (CYM) L.P., BTO VECTOR FUND FD (CYM) L.P., and BLACKSTONE TACTICAL OPPORTUNITIES FUND – FD (CAYMAN) – NQ L.P.
"VIE"	variable interest entity
"VIE Contracts"	collectively the VIE Contracts (Beijing iJoy), the VIE Contracts (Beijing Yiyun), the VIE Contracts (Shanghai Zhiyan) and the VIE Contracts (Wifire Beijing)
"VIE Contracts (Beijing iJoy)"	collectively the Exclusive Call Option Agreement (Beijing iJoy), the Exclusive Technical Consulting Agreement (Beijing iJoy), the Equity Pledge Agreement (Beijing iJoy), the Loan Agreement (Beijing iJoy), the Power of Attorney (Beijing iJoy – Peng Yang), the Power of Attorney (Beijing iJoy – Shanghai Yunshiji), the Power of Attorney (Beijing iJoy – Joytone Infotech), the Letter of Undertaking (Beijing iJoy – Peng Yang) and the Letter of Undertaking (Beijing iJoy – Shanghai Yunshiji)
"VIE Contracts (Beijing Yiyun)"	collectively the Exclusive Technical Consulting Agreement (Beijing Yiyun), the Optional Share Purchase Agreement (Beijing Yiyun), the Equity Pledge Agreement (Beijing Yiyun), the Loan Agreement (Beijing Yiyun – Chen Sheng), the Loan Agreement (Beijing Yiyun – Zhang Jun), the Letter of Undertaking (Beijing Yiyun), the Power of Attorney (Beijing Yiyun – Chen Sheng) and the Power of Attorney (Beijing Yiyun – Zhang Jun)
"VIE Contracts (Shanghai Zhiyan)"	collectively the Exclusive Call Option Agreement (Shanghai Zhiyan), the Exclusive Technical Consulting Agreement (Shanghai Zhiyan), the Equity Pledge Agreement (Shanghai Zhiyan), the Power of Attorney (Shanghai Zhiyan) and the Letter of Undertaking (Shanghai Zhiyan)

"VIE Contracts (Wifire Beijing)"	collectively the Exclusive Technical Consulting Agreement (Wifire Beijing), the Exclusive Services Agreement (Wifire Beijing), the Equity Pledge Agreement (Wifire Beijing), the Exclusive Call Option Agreement (Wifire Beijing), the Loan Agreement (Wifire Beijing), the Power of Attorney (Wifire Beijing – Abitcool China), the Power of Attorney (Wifire Beijing – Chen Sheng) and Letter of Undertaking (Wifire Beijing)
"VNET Data Center"	VNET Data Center Co., Ltd.(世紀互聯數據中心有限公司)(formerly known as 21ViaNet China Inc.), a wholly foreign-owned enterprise registered in the PRC
"WFOE"	each of the following persons: (a) in relation to Beijing iJoy, Joytone Infotech; (b) in relation to Beijing Yiyun, VNET Data Center; (c) in relation to Shanghai Zhiyan, Shanghai Edge Connect; and (d) in relation to Wifire Beijing, Abitcool China, and "WFOEs" means all of them collectively
"Wifire Beijing"	Wifire Network Technology (Beijing) Co., Ltd.(互聯新程網絡科技(北京)有限公司)(formerly known as 光載無限網絡科技(北京)有限公司), a limited liability company registered in the PRC
"WiFire Group"	WiFire Group Inc., a BVI business company incorporated under the laws of the BVI
"Zhang Jun"	ZHANG Jun(張俊), a PRC citizen
"%"	per cent

For the purpose of this circular, the exchange rate of RMB1.00 = HK$1.09 and US$1.00 = HK$7.80 has been used for currency translation, where applicable. Such an exchange rate is for illustrative purposes and does not constitute representations that any amount in HK$, US$ or RMB has been, could have been or may be converted at such a rate.

* *For identification purposes only*

山高控股集團有限公司
SHANDONG HI-SPEED HOLDINGS GROUP LIMITED

(incorporated in Bermuda with limited liability)

(Stock Code: 412)

Executive Directors	*Registered Office*
Mr. Wang Xiaodong *(Chairman)*	Clarendon House
Mr. Zhu Jianbiao *(Vice Chairman)*	2 Church Street
Ms. Liao Jianrong	Hamilton HM11
Mr. Liu Zhijie	Bermuda
Mr. Liu Yao	
	Head Office and Principal Place of Business in Hong Kong
Non-Executive Directors	38/F, The Center
Mr. Liang Zhanhai	99 Queen's Road Central
Mr. Chen Di	Central, Hong Kong
Mr. Wang Wenbo	
Independent Non-Executive Directors	
Mr. Guan Huanfei	
Mr. Chan Wai Hei	
Mr. Tan Yuexin	
Mr. Jonathan Jun Yan	

11 December 2023

To the Shareholders

Dear Sir or Madam,

MAJOR TRANSACTION
PROPOSED SUBSCRIPTION OF SHARES IN
VNET GROUP, INC.

INTRODUCTION

Reference is made to the announcements of the Company dated 16 November 2023 in relation to, among other matters, the proposed Subscription. The purpose of this circular is to provide you with (i) further details of the Investment Agreement and the transactions contemplated thereunder; (ii) other information as required by the Listing Rules; and (iii) the notice of SGM.

THE INVESTMENT AGREEMENT

On 16 November 2023 (after trading hours), Investor-A and Investor-B (each a direct wholly-owned subsidiary of the Company) as investors and the Target Company as issuer entered into the Investment Agreement, pursuant to which the Investors conditionally agreed to subscribe for and the Target Company conditionally agreed to allot and issue a total of 650,424,192 Subscription Shares to the Investors at the Subscription Price for the Consideration of an aggregate of US$299,000,000 (equivalent to approximately HK$2,332,200,000).

The principal terms of the Investment Agreement are set out below:

Date: 16 November 2023 (after trading hours)

Parties:
(i) Investor-A;

(ii) Investor-B; and

(iii) the Target Company.

To the best of the knowledge, information and belief of the Directors, having made all reasonable enquiries, as at the Latest Practicable Date, the Target Company and its ultimate beneficial owners are Independent Third Parties.

Subscription for the Subscription Shares and Consideration

Pursuant to the Investment Agreement:

(a) Investor-A conditionally agreed to subscribe for and the Target Company conditionally agreed to allot and issue 455,296,932 Subscription Shares-A at the Subscription Price of US$0.4597 per Subscription Share for Consideration-A of US$209,300,000 (equivalent to approximately HK$1,632,540,000); and

(b) Investor-B conditionally agreed to subscribe for and the Target Company conditionally agreed to allot and issue 195,127,260 Subscription Shares-B at the Subscription Price of US$0.4597 per Subscription Share for Consideration-B of US$89,700,000 (equivalent to approximately HK$699,660,000).

The Consideration shall be payable on the Closing Date by the Investors to the Target Company by wire transfer, or by such other method mutually agreeable to the Target Company and the Investors, of immediately available funds to the bank account designated by the Target Company against the delivery of their respective Subscription Shares. The Consideration is expected to be satisfied partly by the internal resources of the Group and partly by the Group's borrowings.

Conditions Precedent

Closing shall be subject to the fulfilment, on or before the Closing Date, of the following conditions precedent (collectively the "**Conditions Precedent**") under the Investment Agreement (all of which are not waivable):

Conditions Precedents to each party to effect the Closing

(1) the Investment Agreement and the transactions contemplated thereby having been approved by way of ordinary resolution by the Shareholders in accordance with the applicable laws, the Listing Rules and the bye-laws of the Company;

(2) the filing to the Anti-Monopoly Bureau of the State Administration for Market Regulation of the PRC (the "**SAMR**") having been made by the Investors and accepted by the SAMR for examination and if applicable, the SAMR having issued a decision under the PRC Anti-Monopoly Laws granting a clearance of the sale and purchase of the Subscription Shares ("**PRC Anti-Monopoly Clearance**");

(3) Vector Investors' right of first offer and any other similar right to the extent applicable under certain investment agreements as specified in the Investment Agreement (the "**Vector Investors' ROFO**") and any other relevant waivers, approvals and consents under the said investment agreements with respect to the Target Company's issuance and sale any of the Subscription Shares pursuant to the Investment Agreement having been waived or obtained in writing or, in respect of the Vector Investors' ROFO, by such other way in compliance with the said investment agreements (in that case, the Target Company shall notify the Investors in writing the same has been waived by such other way pursuant to the said investment agreements), including where the Vector Investors' ROFO having been deemed to have been waived by the Vector Investors pursuant to the said investment agreements, or where the exercise of the Vector Investors' ROFO has not been accepted by the Target Company pursuant to the said investment agreements;

(4) no temporary, preliminary or permanent order, judgment, injunction, ruling, penalties, fines, writ or decree of any governmental authority having been enacted, promulgated, issued, entered, amended or enforced by any governmental authority, and no procedure or proceeding including those having been brought by any governmental authority pending, and no applicable law in effect, in each case, which has the effect of restraining, enjoining or otherwise prohibiting or impairing the ability of any party to the Investment Agreement in any material respect to consummate the transactions contemplated by the Investment Agreement;

Further Conditions Precedents to the Investors' obligations to effect the Closing

(5) the representations and warranties of the Target Company remaining true and correct to such standard as set out in the Investment Agreement on and as of the date of the Investment Agreement and on and as of the Closing Date;

(6) the Target Company having performed and complied in all material respects with all covenants contained in the Investment Agreement required to be performed or complied with on or before the Closing Date;

(7) no material adverse effect having occurred from the date of the Investment Agreement;

(8) the Investors having received a certificate issued by the Target Company certifying that the Conditions Precedent set out in paragraphs (5) to (7) above have been satisfied;

(9) the Investors having received (i) a copy of a legal opinion from the Cayman Islands legal adviser to the Target Company on the enforceability of and the legal capacity of the Target Company to execute and perform its obligations in the Investment Agreement and Investor Rights Agreement (as defined below), (ii) a copy of a legal opinion from the New York legal adviser to the Target Company on the enforceability of the Investment Agreement, Investor Rights Agreement (as defined below) and the Voting and Consortium Agreement (as defined below) and (iii) a copy of a legal opinion from the BVI legal adviser to the Target Company on the enforceability of and the legal capacity of each of the Founder Entities to execute and perform its obligations in the Voting and Consortium Agreement (as defined below), each of which having been dated as of the Closing Date and in a form reasonably acceptable to the Investors;

(10) certain investor rights agreement in the form set out in the Investment Agreement (the "**Investor Rights Agreement**"), duly executed by the Target Company, having been delivered to the Investors;

Further Conditions Precedents to the Target Company's obligation to effect the Closing

(11) the representations and warranties of the Investors remaining true and correct to such standard as set out in the Investment Agreement on and as of the date of the Investment Agreement and on and as of the Closing Date;

(12) each Investor having performed and complied in all material respects with all covenants contained in the Investment Agreement required to be performed or complied with on or before the Closing Date;

(13) the Target Company having received a certificate issued by each Investor certifying that the Conditions Precedent set out in paragraphs (11) to (12) above have been satisfied; and

(14) the Investor Rights Agreement, duly executed by the Investors, having been delivered to the Target Company.

Each party's obligation to proceed to Closing is conditional upon fulfilment of the Conditions Precedent set out in paragraphs (1) to (4) above. The Investors' obligation to proceed to Closing is further conditional upon fulfilment of the Conditions Precedent set out in paragraphs (5) to (10) above. The Target Company's obligation to proceed to Closing is further conditional upon fulfilment of the Conditions Precedent set out in paragraphs (11) to (14) above.

In the event that any of the Conditions Precedent set out in paragraphs (5) to (7) and (11) to (12) above are not fulfilled on or before the Long Stop Date, the non-defaulting party shall be entitled to terminate the Investment Agreement.

In the event that the Closing has not occurred on or prior to the Long Stop Date, the Target Company or the Investors shall be entitled to terminate the Investment Agreement in accordance with its terms.

Closing

Closing shall occur on a date no later than ten (10) Business Days after the satisfaction of all of the Conditions Precedent, or such other time as the Investors and the Target Company may mutually agree upon (the "**Closing Date**").

Upon Closing, the Company, through the Investors, shall indirectly own approximately 42.12% of the enlarged total outstanding Target Company Shares (excluding treasury shares and class A ordinary shares in the form of ADSs that are reserved for issuance upon the exercise of share incentive awards of the Target Company), and the remaining outstanding Target Company Shares are, to the best knowledge, information and belief of the Directors, held by Independent Third Parties. The Target Company will not become a subsidiary of the Company and its financial results will not be consolidated in the financial statements of the Group.

Restrictions on Transfer of the Subscription Shares and Lock-up Period

During the period commencing on the Closing Date and ending on the third anniversary of the Closing Date (or specified otherwise in the Investment Agreement), Investor-A shall not directly or indirectly sell, transfer, assign, pledge, encumber, hypothecate or otherwise dispose of (collectively, the "**Transfer**") any or all of the Subscription Shares-A subscribed for by it except with the Target Company's prior written consent or specified otherwise in the Investment Agreement (including but not limited to a Transfer to any person as collateral for or in connection with any security given in a bona fide financing or in the enforcement thereof).

Each Investor has further agreed not to:

(a) conduct any Transfer, unless specified otherwise in the Investment Agreement, of any or all of its respective Subscription Shares or any other equity securities of the Target Company held by the Investors to any Competitors; provided that this restriction shall not apply to (i) any Transfer in an on-market transaction, through a public securities exchange, through a broker-dealer or otherwise in a similar transaction (including a sale to the public market through an effective registration statement of the Target Company or through a bona fide sale to the public market without registration effectuated in the broker's transactions pursuant to Rule 144 under the Securities Act); or (ii) any Transfer where (A) such Investor has used commercially reasonable efforts to verify that neither such proposed transferee nor its ultimate beneficial owner(s) is a Competitor, and (B) the proposed transferee has provided sufficient representations and warranties that neither itself nor its ultimate beneficial owner(s) is a Competitor, with the Target Company as a third party beneficiary to those representations and warranties, and has agreed that it will comply with the transfer restrictions as specified in this paragraph (a) in the share transfer agreement or other similar or related agreement, a copy of which shall be provided to the Target Company (provided that the Target Company shall agree to be bound by such confidentiality provisions as may be required thereunder); and

(b) offer, sell, pledge, hypothecate or otherwise transfer any or all of their respective Subscription Shares within the United States or to any U.S. Person (as each of those terms is defined in Regulation S) during the 40 days following the Closing Date.

INVESTOR RIGHTS AGREEMENT

The Investor Rights Agreement has been entered into on 16 November 2023 between the Target Company, Investor-A and Investor-B (but with effect from the Closing Date) to set out, among others, the following rights (subject to the Closing having taken place):

Nomination rights

As long as the Investors in the aggregate continue to own a minimum of 325,212,096 class A ordinary shares of the Target Company, the Investors shall have the right, from time to time, to appoint:

(i) one executive director ("**Investor Director**") to serve as the co-chairman of the board of directors of the Target Company, who shall also be appointed as the chairman of the annual budget and financing committee which shall be set up in accordance with the Investor Rights Agreement; and

(ii) one officer who shall serve as vice president of the Target Company.

Pre-emptive rights

As long as the Investors in the aggregate continue to own a minimum of 325,212,096 of class A ordinary shares of the Target Company, in the event that the Target Company proposes to sell, offer or issue any new equity securities of the Target Company, each of the Investors shall have a right to subscribe up to the number of such new equity securities to be sold, offered or issued pro rata to such Investor's shareholding in the Target Company immediately prior to the issuance of such new securities in accordance with the Investor Rights Agreement.

Other rights

The Investors also have information and other rights and the Investor Director has veto rights on certain reserved matters in each case in accordance with the terms of the Investor Rights Agreement. The said reserved matters include (i) merger, division, dissolution, or other change of form of the Target Company or any of its material subsidiaries; (ii) amending or changing the voting power and/or any other rights attached to the equity securities of the Target Company which are authorized but not issued, and/or issued and outstanding on or before the Closing; (iii) ceasing to conduct or carry on, or change, the major or substantial business of the Target Group as from time to time conducted; (iv) selling, exclusively licensing, transferring, creating any encumbrance over, mortgaging or otherwise disposing (A) all or substantially all of the assets, or (B) any material assets of the Target Group; (v) making any investment for an amount in excess of RMB300 million in any financial year of the Target Company, unless contemplated under the duly approved annual budget of the Target Company for the same financial year; (vi) issuance of any equity securities of the Target Company in any financial year of the Company, individually or in the aggregate, representing five percent or more of the total issued and outstanding shares of the Target Company as at the first calendar date of that financial year; provided, however, except for the following issuance of any equity securities (A) pursuant to the equity incentive plans duly approved by the board of directors of the Target Company, or (B) upon the conversion of certain convertible securities of the Target Company; (vii) issuance of any equity securities of the Target Company (other than the class A ordinary shares of the Target Company) to Chen Sheng or any of his controlled entities or family members;(viii) any share subdivision of the equity securities of the Target Company or any distribution of dividends; provided, however, except for the following circumstances: (A) where all holders of the ordinary shares of the Target Company are entitled to participate and would benefit on a pro-rata basis, (B) any distribution of dividends made in accordance with the terms on which the preferred shares of the Target Company are subscribed for, and/or (C) any share subdivision of the preferred shares of the Target Company which does not and would not reasonably be expected to unfairly dilute the shareholding percentages (calculated on an as converted and fully-diluted basis) of the holders of the ordinary shares of the Target Company; (ix) amendment of the memorandum and articles of association of the Target Company that, if adopted, will restrict, inhibit or terminate the rights, powers, preferences or privileges enjoyed by either Investors in accordance with the Investor Rights Agreement and other documents executed in connection with the transactions contemplated by the Investment Agreement, the Investor Rights Agreement and the Voting and Consortium Agreement (as defined below); (x) initiating proceedings for any bankruptcy, liquidation or dissolution of the Target Company or any of its material subsidiaries; and (xi) authorizing any of, or agreeing, committing or attempting to do any of, the foregoing.

VOTING AND CONSORTIUM AGREEMENT

A voting and consortium agreement (the "**Voting and Consortium Agreement**") has been entered into between Investor-A, Investor-B and the Founder Shareholders Group on 16 November 2023 (but with effect from the Closing Date subject to the terms therein), pursuant to which, among others, for a period from the expiration or termination of the interim period (i.e. a period commencing upon the Closing and ending upon the earlier of (i) 29 February 2024 or 60 calendar days after the Closing, whichever is later; and (ii) the termination of such interim period including when the Company or Chen Sheng agrees to such termination in writing (the Company and/or Chen Sheng shall concurrently notify the same to Investor-A in writing and shall consult with Investor-A with respect to such termination in advance)) to the third anniversary of the Closing Date or to a date as specified otherwise in the Voting and Consortium Agreement, save for (i) amendment of the Target Company's constitutional documents; (ii) merger, division, restructuring, spin-off or dissolution of the Target Company or any of its material subsidiaries; (iii) any initiation of proceedings for any bankruptcy, liquidation or dissolution of the Target Company or any of its material subsidiaries; and (iv) any repurchase, redemption or cancellation of any equity securities of the Target Company, Investor-A shall exercise its voting rights attaching to the Subscription Shares held by it in accordance with the instructions from the Founder Shareholders Group, subject to the Closing having taken place, in accordance with and subject to the terms of the Voting and Consortium Agreement.

REASONS FOR AND BENEFITS OF THE SUBSCRIPTION

Basis of the Consideration

The Consideration was determined after arm's length negotiation between the Investors and the Target Company with reference to (i) the volume weighted average price per ADS based on the traded volumes and values displayed on Bloomberg for the ninety (90) consecutive NASDAQ Trading Days ending on and including the NASDAQ Trading Day last preceding the date of the Investment Agreement of US$2.83; and (ii) the unaudited net asset value of the Target Group as of 30 June 2023 (prepared in accordance with the US GAAP) of approximately RMB6,907,544,000 (equivalent to approximately HK$7,529,222,960) based on the unaudited financial results of the Target Company for the second quarter ended 30 June 2023.

Reasons and benefits

The Directors are of the view that the Subscription will facilitate the Group' s investment in the data center and telecommunications value-added service business in the PRC. The Target Company has extensive business resources in the aforesaid field, and has been developing in the data center industry for over 20 years. As of 30 June 2023, the Target Group operated 45 self-built data centers (equipped with 82,656 cabinets) and 104 partnered data centers (equipped with 4,271 cabinets) in more than 30 cities across China, with a port capacity of more than 4 Terabytes and a high-speed cloud dedicated line of more than 1 Terabytes, making it a new engine for customers' digital transformation. At the same time, the Target Company is promoting the market supply of a new batch of large-scale, standardised and green high-capacity data centers to accelerate the satisfaction of the rapidly expanding market demand of domestic enterprise users. The Target Company is the leading enterprise among zero-data centers in China, covering over 3,000 companies in the manufacturing, financial and internet industries, including Meituan, Kuaishou, AliCloud, TencentCloud, JD Cloud and HuaweiCloud. The Target Group's network transmits data and directs internet traffic, forming an internet highway system that is linked to the networks of major carriers, non-carriers and ISPs and enhances communications among the Target Group's data centers, customers and end users located throughout China and around the world. As of 30 June 2023, the Target Group's network connected 230 POPs throughout China. The Target Group's network also features numerous interfaces with four telecommunication carriers in China, which are China Telecom, China Unicom, China Mobile and China Education Network. The Target Group's network is not only connected to the headquarters of each carrier, but also with their local networks throughout China. Due to the Target Group's high-quality data center infrastructure, extensive data transmission network and proprietary smart routing technologies, the Target Group is able to deliver high-performance hosting and related services that can effectively meet the business needs of the Target Group's customers, improve interconnectivity among service providers and end users, and effectively address the issue of inadequate network interconnectivity in China.

Therefore, the Group intends to further enhance the cooperation with the Target Company to promote the sustainable and high-quality development of the Group. This is because the investment in the Target Company is highly compatible with the Company's new energy and new infrastructure strategic transformation industry layout, and the construction of the "green power + computing power" optimal industrial ecological model. The synergistic development between the Company and the Target Company is mainly reflected in the following dimensions:

1) by leveraging on the Company's resource strengths and assisting the Target Company to develop its business in Shandong Province, the Shareholders will benefit from the positive cash flow brought about by the Target Company's growth in scale and improvement in profitability.

2) The Company will coordinate with Shandong Hi-Speed New Energy Group Limited ("**SHNE**") to, and SHNE will, on the premise of fair and reasonable market pricing, prioritise strategic cooperation for mutual benefits. Electricity costs account for more than 50% of the operating costs of the internet data centre ("**IDC**") industry, therefore, SHNE's green energy generation can be highly complementary with the Target Company's green energy consumption. Through the construction of data center distributed photovoltaic, integration of source, network, loading and storage and other cooperation modes, it can realize the two-way empowerment by improving SHNE's benefits and reducing the Target Company's operating costs, so as to build the competitiveness of the sustainable development of the high-energy-consuming IDC industry for the green and low-carbon transformation. At present, there is no high-quality enterprise with the concept of "green power + computing power" of mature scale in the capital market. The Company is of the view that, once the Subscription is completed, the Company and SHNE are expected to become unique entities in the capital market with solid fundamentals of a state-owned enterprise and extensive room for growth, and to realise a comprehensive enhancement of the Company's performance, enterprise value and market valuation, and that the Shareholders and the shareholders of SHNE will also benefit from the enhancement.

Rather than the short-term gain in the price increment of the shares of the Target Company, it would provide longer-term benefits to the Shareholders if the Company can establish a long-term partnership and create synergies with the Target Company.

The Company is of the view that as IDC enterprises belong to the asset-heavy and high-depreciation industry, the different pace of capital investment and depreciation methods will have different degrees of impact on their net profits, which makes it impossible for companies in the same or similar industry to judge the value of a company on the basis of their net profits, and the industry generally adopts the EBITDA indicator, which is an indicator excluding the impact of the depreciation of the period, in its valuation. In view of the Target Company's revenue of approximately RMB4,829 million, RMB6,190 million and RMB7,065 million and adjusted EBITDA of approximately RMB1,324 million, RMB1,754 million and RMB1,873 million for the financial years of 2020 to 2022, respectively, which represents a significant growth trend. The Company believes that as the new wholesale IDC projects of the Target Company are successively delivered, the certainty of revenue growth is expected to be higher.

In consideration of the foregoing factors, the Directors believe that the Subscription will have positive impact and benefit to future prospects of the Group. The Directors are of the view that the terms of the Investment Agreement are fair and reasonable, on normal commercial terms and the Subscription and the transactions contemplated thereunder are in the interests of the Company and the Shareholders as a whole.

FINANCIAL EFFECTS OF THE SUBSCRIPTION

Upon the completion of the Subscription, the Company will, through the Investors, hold an aggregate of approximately 42.12% equity interest in the Target Company (excluding treasury shares and class A ordinary shares in the form of ADSs that are reserved for issuance upon the exercise of share incentive awards of the Target Company) at a total consideration of US$299,000,000 (equivalent to approximately HK$2,332,200,000) and the Target Company will become an associate of the Group. The financial results of the Target Group will not be consolidated in the financial statements of the Group and will be accounted for using the equity method of accounting.

Assets and liabilities

Based on the unaudited pro forma financial information of the Group as set out in Appendix IV to this circular, the effect of the completion of the Subscription on the unaudited condensed consolidated financial position of the Group as at 30 June 2023 as if the completion of the Subscription had taken place on 30 June 2023 is that the total assets of the Group would have increased from approximately HK$66,820,836,000 to approximately HK$69,819,596,000 on a pro forma basis, and the total liabilities of the Group would have increased from approximately HK$52,500,065,000 to approximately HK$53,899,385,000 on a pro forma basis.

Earnings

Based on the unaudited pro forma financial information of the Group as set out in Appendix IV to this circular should the Subscription had been completed on 30 June 2023, the Group will recognise a negative goodwill as gain in income statement as a result of the Subscription.

For details of the unaudited pro forma financial information of the Group immediately following completion of the Subscription, please refer to Appendix IV to this circular.

INFORMATION ON THE PARTIES

The Company and the Group

The Company is an investment holding company incorporated in Bermuda with limited liability and its shares are listed on the Main Board of the Stock Exchange (Stock Code: 412). The principal activity of the Company is investment holding. The Group is principally engaged in industrial investment, standard investment business, non-standard investment business and licensed financial services.

The Investors

Each of Investor-A and Investor-B is a BVI business company incorporated in the BVI with limited liability and a direct wholly-owned subsidiary of the Company. Both Investor-A and Investor-B principally engaged in investment holding.

The Target Company and the Target Group

As at the Latest Practicable Date, the Target Company is an exempted company incorporated in the Cayman Islands with limited liability whose class A ordinary shares are traded under the ticker symbol "VNET" on NASDAQ. It is principally engaged in investment holding. The Target Group is principally engaged in providing hosting and related services, including IDC (internet data center) services, cloud services, and business VPN services to improve the reliability, security, and speed of its customers' internet infrastructure.

To the best of the knowledge, information and belief of the Directors, having made all reasonable enquiries, as at the Latest Practicable Date, the Company and its connected persons do not hold any interest in the Target Company, and the Target Company and its ultimate beneficial owners are Independent Third Parties.

Based on the unaudited financial results of the Target Company for the second quarter ended 30 June 2023, the unaudited net asset value of the Target Group as at 30 June 2023 (prepared in accordance with the US GAAP) was approximately RMB6,907,544,000 (equivalent to approximately HK$7,529,222,960). Based on the financial statements included the annual report of the Target Company for the year ended 31 December 2022, the audited profit before and after taxation of the Target Group (prepared in accordance with the US GAAP) for the financial years ended 31 December 2021 and 31 December 2022 are set out below:

	For the year ended 31 December 2021	**For the year ended 31 December 2022**	**For the six months ended 30 June 2023**
	RMB'000	*RMB'000*	*RMB'000*
	(audited)	*(audited)*	*(unaudited)*
Profit/(loss) before taxation	626,508	(628,530)	(76,567)
Profit/(loss) after taxation	515,101	(761,994)	(133,998)

EFFECTS ON SHAREHOLDING STRUCTURE OF THE TARGET COMPANY

	As at the Latest Practicable Date[9]			Immediately after the Closing (assuming no other change in the share capital of the Target Company occurred between the Latest Practicable Date and the Closing Date)[9]		
	Number of Shares	*Approximate % [10]*	*% of Voting Power [11]*	*Number of Shares*	*Approximate % [10]*	*% of Voting Power [11]*
Directors and Executive Officers:						
Chen Sheng [(1)]	30,067,143	3.4	24.5	30,067,143	2.0	15.8
Yoshihisa Ueno [(2)]	5,225,736	*	2.1	5,225,736	*	1.4
Kenneth Chung-Hou Tai	*	*	*	*	*	*
Sean Shao	*	*	*	*	*	*
Erhfei Liu	*	*	*	*	*	*
Changqing Ye	*	*	*	*	*	*
Jie Dong	*	*	*	*	*	*
Tim Chen	*	*	*	*	*	*
Principal Shareholders:						
FIL Limited [(3)]	85,714,734	9.6	7.3	85,714,734	5.6	4.7
Samarra Company Limited [(4)]	72,309,744	8.1	6.2	72,309,744	4.7	4.0
Vector Holdco Pte. Ltd. [(5)]	62,412,780	7.0	5.3	62,412,780	4.0	3.4
Tuspark Innovation Venture Limited [(6)]	60,911,237	6.8	5.2	60,911,237	3.9	3.3
TT International Asset Management Ltd [(7)]	54,637,662	6.1	4.7	54,637,662	3.5	3.0
GIC Private Limited [(8)]	45,198,492	5.1	3.9	45,198,492	2.9	2.5
Investor A	–	–	–	455,296,932	29.5	25.0
Investor B	–	–	–	195,127,260	12.6	10.7

* *Less than 1% the total outstanding shares of the Target Company.*

Notes:

(1) Consists of (i) one class A ordinary shares held by GenTao Capital Limited ("**GenTao**"), a British Virgin Islands company solely owned by Mr. Chen; (ii) 19,670,117 class B ordinary shares held by Fast Horse Technology Limited ("**Fast Horse**"), a British Virgin Islands company solely owned by Mr. Chen; (iii) 8,087,875 class B ordinary shares held by Sunrise Corporate Holding Ltd. ("**Sunrise**"), a British Virgin Islands company solely owned by Mr. Chen; (iv) 60,000 class C ordinary shares, 769,486 class B ordinary shares and four class A ordinary shares held by Personal Group Limited ("**Personal Group**"), a British Virgin Islands company solely owned by Mr. Chen; and (v) 1,479,660 class A ordinary shares upon vesting of Mr. Chen's restricted share units within 60 days of 16 November 2023. Principal business activities of each of GenTao, Fast Horse, Sunrise and Personal Group are investment holding. Information set forth above is based upon Mr. Chen's Schedule 13D/A filing with the SEC on 16 November 2023.

Mr. Chen may be deemed to beneficially own the class A ordinary shares directly held by Investor-A at the expiration of the Interim Period (as defined in the Investment Agreement) when Mr. Chen is entitled to direct the voting of class A ordinary shares directly held by Investor-A pursuant to the terms and conditions of the Voting and Consortium Agreement. Considering class A ordinary shares directly held by Investor-A, Mr. Chen will beneficially own 485,364,075 ordinary shares, which represents 31.4% of total ordinary shares of the Target Company outstanding immediately after the Closing, and 40.8% of voting power of total ordinary shares of the Target Company outstanding immediately after the Closing.

(2) Consists of (i) 2,194,200 class B ordinary shares and 1,344,228 class A ordinary shares held by Synapse Holdings Limited, and (ii) 1,687,308 class A ordinary shares upon vesting of Mr. Yoshihisa Ueno's restricted share units within 60 days of 28 February 2023. Mr. Yoshihisa Ueno is a director of the Target Company appointed by Synapse Holdings Limited. Information set forth above is based upon the Target Company's 20-F for the fiscal year ended 31 December 2022 filed with the SEC on 26 April 2023.

(3) Consists of 85,714,734 class A ordinary shares held in the form of ADSs over which FIL Limited, a company organized under the laws of Bermuda, has sole dispositive power and investment power. Information set forth above is based upon FIL Limited's Schedule 13G filing with the SEC on 9 February 2023.

(4) Consists of 72,309,744 class A ordinary shares held in the form of ADSs over which Samarra Company Limited, a company incorporated under the laws of the British Virgin Islands has shared dispositive power and voting power with DICO Investments & Properties Limited, a company incorporated under the laws of the Cayman Islands and Hussain Ali Habib Sajwani, a citizen of United Arab Emirates. Samarra is a direct wholly-owned subsidiary of DICO Investments & Properties Limited, which is wholly-owned by Mr. Sajwani. Information set forth above is based upon Samarra Company Limited's Schedule 13G filing with the SEC on 15 November 2022.

(5) Consists of (i) 60,578,154 class A ordinary shares held in the form of ADSs by Vector Holdco Pte. Ltd. ("**Vector Holdco**"), a private limited company incorporated under the laws of Singapore, (ii) 1,565,826 class A ordinary shares held in the form of ADSs by BTO Vector Fund FD (CYM) L.P. ("**Vector Fund FD**"), a limited partnership established under the laws of the Cayman Islands, and (iii) 268,800 class A ordinary shares held in the form of ADSs by BTO Vector Fund ESC (CYM) L.P. ("**Vector Fund ESC**"), an exempted limited partnership registered under the laws of the Cayman Islands. BTO Super Holding (NQ) Co. III Pte. Ltd. ("**BTO Super Holding**") is the 100% equity owner of Vector Holdco. Blackstone Tactical Opportunities SG II (Cayman) L.P. ("**BTO SG**") is the 100% equity owner of BTO Super Holding. BTO Holdings (Cayman)—NQ Manager L.L.C. ("**BTO Holdings**") is the general partner of Vector Fund ESC and Vector Fund FD. Blackstone Tactical Opportunities Management Associates (Cayman)—NQ L.P. ("**BTOMA**") is the managing member of BTO Holdings and the general partner of BTO SG. BTO GP—NQ L.L.C. ("**BTO GP**") and Blackstone Tactical Opportunities LR Associates (Cayman)—NQ Ltd. ("**BTOLRA**") are the general partners of BTOMA with BTO GP controlling BTOMA with respect to all matters other than voting of securities of underlying portfolio companies, which power is held by the Class B shareholders of BTOLRA, who are certain senior personnel of Blackstone. Blackstone Holdings IV L.P. ("**Blackstone IV**") is the sole member of BTO GP and the sole Class A shareholder of BTOLRA. Blackstone Holdings IV GP L.P. ("**Blackstone IV GP**") is the general partner of Blackstone IV. Blackstone Holdings IV GP Management (Delaware) L.P. ("**Blackstone IV GP Management (Delaware)**") is the general partner of Blackstone IV GP. Blackstone Holdings IV GP Management L.L.C. ("**Blackstone IV GP Management**") is the general partner of Blackstone IV GP Management (Delaware). The Blackstone Group Inc. is the sole member of Blackstone IV GP Management. Blackstone Group Management L.L.C. is the sole holder of the Class C common stock of The Blackstone Group Inc. Blackstone Group Management L.L.C. is wholly owned by Blackstone's senior managing directors and controlled by its founder, Stephen A. Schwarzman.

The principal business of Vector Holdco, Vector Fund ESC and Vector Fund FD is investing in securities. The principal business of BTO Super Holding is being the 100% equity owner of Vector Holdco. The principal business of BTO SG is being the 100% equity owner of BTO Super Holding. The principal business of BTO Holdings is performing the functions of, and serving as, the general partner of Vector Fund ESC and Vector Fund FD and other affiliated Blackstone entities. The principal business of BTOMA is performing the functions of, and serving as, the managing member of BTO Holdings and the general partner of BTO SG and as the managing member (or similar position) and member or equity holder in other affiliated Blackstone entities. The principal business of BTO GP is performing the functions of, and serving as, a general partner of BTOMA and as the managing member (or similar position) and member or equity holder in other affiliated Blackstone entities. The principal business of BTOLRA is performing the functions of, and serving as, a general partner of BTOMA and as the general partner (or similar position) in other affiliated Blackstone entities. The principal business of Blackstone IV is performing the functions of, and serving as, the sole member of BTO GP, the sole Class A shareholder of BTOLRA and as the managing member (or similar position) and member or equity holder in other affiliated Blackstone entities. The principal business of Blackstone IV GP is performing the functions of, and serving as, the general partner of Blackstone IV and other affiliated Blackstone entities. The principal business of Blackstone IV GP Management (Delaware) is performing the functions of, and serving as, the general partner of Blackstone IV GP. The principal business of Blackstone IV GP Management is performing the functions of, and serving as, the general partner of Blackstone IV GP Management (Delaware) and other affiliated Blackstone entities. The principal business of Blackstone Inc. is performing the functions of, and serving as, the sole member of Blackstone IV GP Management and in a similar capacity for other affiliated Blackstone entities. The principal business of Blackstone Group Management L.L.C. is performing the functions of, and serving as, the sole holder of the Series II preferred stock of Blackstone Inc. The principal occupation of Mr. Schwarzman is serving as an executive of Blackstone Inc. and Blackstone Group Management L.L.C. Information set forth above is based upon Vector Holdco's Schedule 13D/A filing with the SEC on 1 February 2022.

(6) Consisted of 60,911,237 class A ordinary shares over which, to the best knowledge of the Target Company. Tuspark Innovation Venture Limited has sole dispositive power and voting power. Information set forth above is based upon the Target Company's 20-F for the fiscal year ended 31 December 2022 filed with the SEC on 26 April 2023.

(7) Consists of 54,637,662 class A ordinary shares held in the form of ADSs by various investment vehicles for which TT International Asset Management Ltd, a company organized under the laws of the United Kingdom, serves as investment manager. Information set forth above is based upon TT International Asset Management Ltd's Schedule 13G filing with the SEC on 14 February 2023.

(8) Consists of (i) 38,722,188 class A ordinary shares over which GIC Private Limited has sole voting power and (ii) 6,476,304 class A ordinary shares over which GIC Private Limited has shared voting power. Information set forth above is based upon GIC Private Limited's Schedule 13G/A filing with the SEC on 9 February 2023.

(9) All of the information above are mainly based on the Target Company's annual report for the fiscal year ended 31 December 2022 and Schedule 13D or Schedule 13G filings in relation to the Target Company publicly available on the website of the SEC as at the Latest Practicable Date and only discloses shareholders with 5% or more shareholdings and the 1% or more shareholdings of the directors and executive officers of the Target Company in the Target Company.

(10) The percentage of ownership is calculated based on 893,762,718 outstanding ordinary shares as a single class, consisting of (i) 862,980,995 class A ordinary shares (excluding treasury shares and class A ordinary shares in the form of ADSs that are reserved for issuance upon the exercise of share incentive awards), (ii) 30,721,723 class B ordinary shares, (iii) 60,000 class C ordinary shares, and (iv) nil class D ordinary shares. The total number of each of the outstanding class A ordinary shares (excluding treasury shares and class A ordinary shares in the form of ADSs that are reserved for issuance upon the exercise of share incentive awards), the outstanding class B ordinary shares, the outstanding class C ordinary shares and the outstanding class D ordinary shares of the Target Company is based upon Mr. Chen's Schedule 13D/A filing with the SEC on 16 November 2023.

(11) Percentage of voting power represents voting power with respect to all of class A ordinary shares, class B ordinary shares, class C ordinary shares and class D ordinary shares of the Target Company, as a single class. Each holder of the Target Company's class B ordinary shares is entitled to ten votes per class B ordinary share and each holder of the Target Company's class A ordinary shares is entitled to one vote per class A ordinary share held by our shareholders on all matters submitted to them for a vote. Each holder of the Target Company's class C ordinary shares is entitled to one vote per class C ordinary share on all matters submitted to them for a vote, except that the following matters shall not proceed without the written consent of the holders holding a majority of the issued and outstanding class C ordinary shares or with the sanction of a special resolution passed at a separate meeting of the holders of the issued and outstanding class C ordinary shares: (i) any appointment or removal of directors other than the appointment or removal of directors that is made pursuant to a shareholder's right under the investor rights agreement, dated 15 January 2015, among the Target Company, King Venture Holdings Limited, Xiaomi Ventures Limited and certain other parties named therein, and the share subscription agreement, dated 23 May 2016, between the Target Company and Tuspark Innovation Venture Limited; (ii) entry into of any agreement by us or our subsidiaries with any shareholder who holds more than 10% of our issued and outstanding share capital or such shareholder's affiliate, other than agreements entered into in our ordinary course of business with a total contract amount below 10% of our consolidated total revenue in the most recent completed fiscal year; and (iii) any proposed amendments to our memorandum and articles of associations that will amend, alter, modify or change the rights attached to class C ordinary shares. Each holder of our class D ordinary shares is entitled to 500 votes per class D ordinary shares. The Target Company's class A ordinary shares, class B ordinary shares, class C ordinary shares and class D ordinary shares vote together as a single class on all matters submitted to a vote of our shareholders, except as may otherwise be required by law. The Target Company's class B ordinary shares, class C ordinary shares and class D ordinary shares are convertible at any time by the holder into class A ordinary shares on a 1:1 basis.

As of the Latest Practicable Date, to the best knowledge of the Target Company, there are (i) 862,980,995 class A ordinary shares, (ii) 30,721,723 class B ordinary shares, (iii) 60,000 class C ordinary shares, and (iv) nil class D ordinary shares outstanding.

The OPCO Group Companies

Beijing iJoy

Beijing iJoy is a limited liability company registered in the PRC. It holds a licence to engage in the businesses of internet data centre (excluding internet resources collaboration) (IDC) and internet services provider (ISP). As at the Latest Practicable Date, neither Beijing iJoy nor any of its subsidiaries are operating any business.

Beijing Yiyun

Beijing Yiyun is a limited liability company registered in the PRC. It holds a licence to engage in the businesses of internet data centre (IDC), internet services provider (ISP), virtual private network (VPN), and information services (excluding internet information services).

Based on the unaudited consolidated management accounts of Beijing Yiyun for the two financial years ended 31 December 2021 and 31 December 2022 and the 6 months ended 30 June 2023 respectively, the unaudited consolidated revenue of Beijing Yiyun for the two financial years ended 31 December 2021 and 31 December 2022 and the 6 months ended 30 June 2023 was approximately RMB3,092 million, approximately RMB3,450 million and approximately RMB1,658 million respectively.

Shanghai Zhiyan

Shanghai Zhiyan is a limited liability company registered in the PRC. It is an investment holding company. Shanghai Blue Cloud, its direct wholly-owned subsidiary, holds licences to operate internet data centre (IDC), internet service provider (ISP), information services (including internet information services), content distribution network, domestic ethernet data transfer, domestic virtual private network (VPN), domestic multi-party conference, domain name analysis, and online data and transaction processing operations.

Based on the unaudited consolidated management accounts of Shanghai Zhiyan for the two financial years ended 31 December 2021 and 31 December 2022 and the 6 months ended 30 June 2023 respectively, the unaudited consolidated revenue of Shanghai Zhiyan for the two financial years ended 31 December 2021 and 31 December 2022 and the 6 months ended 30 June 2023 was approximately RMB1,343 million, approximately RMB1,551 million and approximately RMB830 million respectively.

Wifire Beijing

Wifire Beijing is a limited liability company registered in the PRC. As at the Latest Practicable Date, it is a dormant company.

Information of the OPCO Registered Shareholders

As at the Latest Practicable Date, the OPCO Registered Shareholders and their respective shareholdings in the OPCO Group Companies are as follows:

(a) Beijing iJoy

Registered shareholder(s)	Percentage of Equity interest (%)
Shanghai Yunshiji	95.10
Peng Yang	4.90
Total:	**100**

(b) Beijing Yiyun

Registered shareholder(s)	Percentage of Equity interest (%)
Chen Sheng	70
Zhang Jun	30
Total:	**100**

(c) Shanghai Zhiyan

Registered shareholder(s)	Percentage of Equity interest (%)
Shanghai Rongyan	100
Total:	**100**

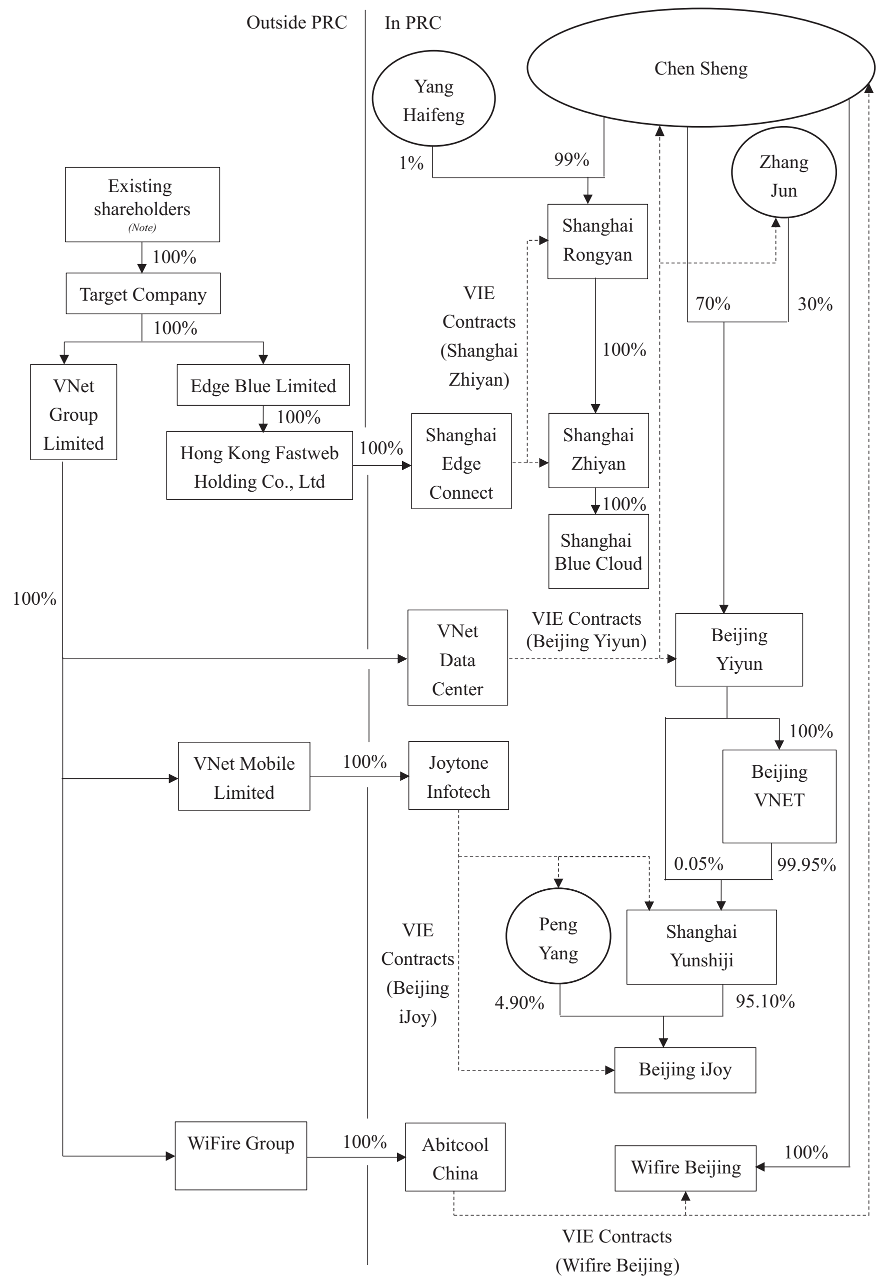
(d) Wifire Beijing

Registered shareholder(s)	Percentage of Equity interest (%)
Chen Sheng	100
Total:	**100**

To the best of the knowledge, information and belief of the Directors, having made all reasonable enquiries, all the OPCO Registered Shareholders and (in the cases of non-individuals) their ultimate beneficial owners are Independent Third Parties as at the Latest Practicable Date.

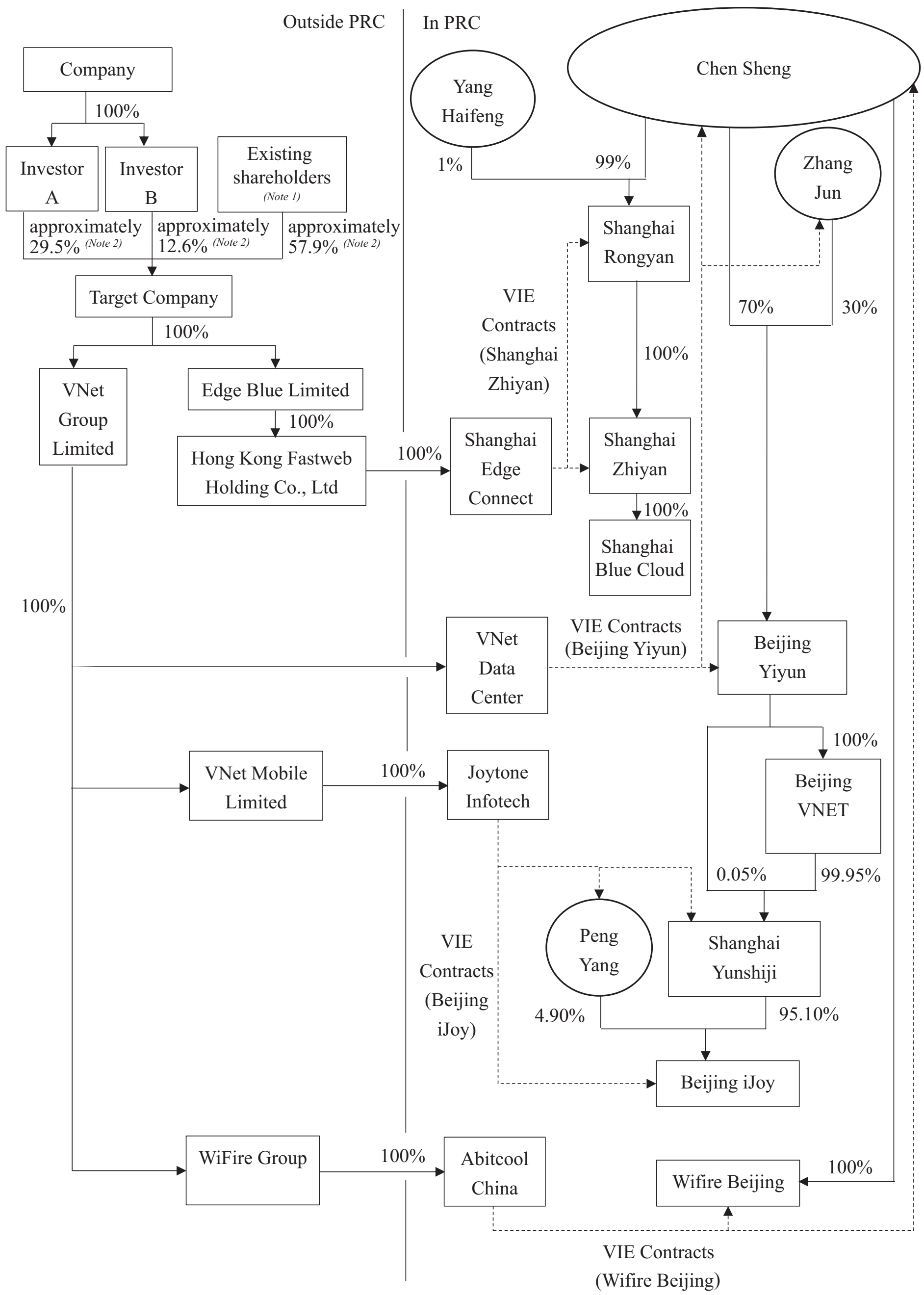
Shareholding structure of the Target Group

Set out below is the shareholding structure of the Target Group as at the Latest Practicable Date:



Note: Please refer to the section headed "Effects on Shareholding Structure of the Target Company" for details of the existing shareholders of the Target Company.

Set out below is the proposed shareholding structure of the Target Group as at immediately after the Closing:



Notes:

(1) Please refer to the section headed "Effects on Shareholding Structure of the Target Company" for details of the existing shareholders of the Target Company.

(2) Please refer to the section headed "Effects on Shareholding Structure of the Target Company" for the respective percentage shareholding and voting powers of Investor-A, Investor-B and the existing shareholders of the Target Company following the Closing.

Pursuant to the VIE Contracts, the Target Company, through the WFOEs, has effective control over the OPCO Group and enjoy the economic benefits generated by the OPCO Group Companies. The Directors have discussed with the reporting accountants and confirmed that under the prevailing accounting principles, the Target Company has the right to consolidate the financial results of the OPCO Group Companies in its consolidated accounts as if they were subsidiaries of the Target Company.

INFORMATION OF THE VIE CONTRACTS

Reasons for use of the VIE Contracts

The OPCO Group Companies collectively are principally engaged in the business of providing hosting and related services, including IDC (internet data center) services, cloud services, and business VPN services to improve the reliability, security, and speed of its customers' internet infrastructure. Beijing iJoy holds a licence to engaged in the businesses of internet data centre (excluding internet resources collaboration) (IDC) and internet services provider (ISP), Beijing Yiyun holds a licence to engaged in the businesses of internet data centre (IDC), internet services provider (ISP), virtual private network (VPN) and information services (excluding internet information services), and Shanghai Blue Cloud holds licences to operate (among other things) internet data centre (IDC), internet service provider (ISP), information services (including internet information services), content distribution network, domestic ethernet data transfer, domestic virtual private network (VPN), domain name analysis, and online data and transaction processing operations.

Investment activities in the PRC by foreign investors are primarily regulated by Catalogue of Industries for Encouraging Foreign Investment (2022 Version) (《鼓勵外商投資產業目錄(2022年版)》) (the "**Catalogue**"), which were promulgated and are amended from time to time jointly by the Ministry of Commerce of the PRC (the "**MOFCOM**") and the National Development and Reform Commission of the PRC (the "**NDRC**"), and the Special Administrative Measures for Foreign Investment Access (Edition 2021) (《外商投資准入特別管理措施(負面清單)(2021年版)》) (the "**Negative List**") as promulgated and are amended from time to time jointly by the MOFCOM and the NDRC. According to the Negative List and other PRC Laws, foreign investors are restricted from providing data centre (IDC), internet services provider (ISP), virtual private network (VPN), information services, content distribution network, domestic ethernet data transfer, domain name analysis, and online data and transaction processing operations. In light of the above, as both the Company and the Target Company are foreign-owned, there are limitations or restrictions on foreign ownership in the OPCO Group Companies.

Therefore, each of the OPCO Group Companies, its corresponding WFOE and OPCO Registered Shareholder(s) have entered into the VIE Contracts to enable the financial results, the entire economic benefits and the risks of the businesses of each OPCO Group Company to flow into its corresponding WFOE and to enable such WFOE to gain control over such OPCO Group Company.

The VIE Contracts

The VIE structure for each OPCO Group Company have been implemented at the respective times of execution of the corresponding VIE Contracts. As the OPCO Group Companies will not become subsidiaries of the Company upon Closing, the VIE Contracts will not constitute connected transactions of the Company under Chapter 14A of the Listing Rules.

Despite the Group has no control over the Target Company, the Company has voluntarily reviewed the VIE Contracts and the Guidance Letter. The principal terms of each of the VIE Contracts are set out as follows:

(1) The VIE Contracts (Beijing iJoy)

(a) the Exclusive Technical Consulting Agreement (Beijing iJoy)

Date	30 October 2012 and 30 July 2013
Parties	(i) Joytone Infotech (ii) Beijing iJoy
Subject	Beijing iJoy agrees to engage Joytone Infotech as the exclusive service provider to provide Beijing iJoy with (A) maintenance of machine room, network and software; (B) office network conditions and maintenance; (C) security services for overall system; and (D) overall architecture design and implementation of system network, including installation of server system, routine maintenance on a 24*7 basis (collectively the "**Exclusive Services**"). During the term of the Exclusive Technical Consulting Agreement (Beijing iJoy), without the prior written consent of Joytone Infotech, Beijing iJoy is not allowed to engage any third party to provide the Exclusive Services.

Beijing iJoy agrees to pay a technical consulting and services fee ("**Fees**") equals to the product of (I) an hourly rate of CNY1,000.00 and (II) numbers of hours spent in provision of the Exclusive Services. Joytone Infotech may, in its sole discretion, adjust the Fees for the technical consulting and services provided to Beijing iJoy. The Fees shall be paid within 5 days upon submission of an invoice by Joytone Infotech to Beijing iJoy on a monthly basis.

Term — The term of the Exclusive Technical Consulting Agreement (Beijing iJoy) shall be ten (10) years from the date of its execution. Joytone Infotech may, at its sole discretion, extend the Exclusive Technical Consulting Agreement (Beijing iJoy) by giving its written consent to the extension of the term before expiration.

Joytone Infotech may unilaterally terminate the Exclusive Technical Consulting Agreement (Beijing iJoy) at its sole discretion by giving a written notice to Beijing iJoy at least 30 days prior to such termination.

(b) the Exclusive Call Option Agreement (Beijing iJoy)

Date — 18 July 2019

Parties — (i) iJoy Holding

(ii) Peng Yang

(iii) Shanghai Yunshiji

(iv) Beijing iJoy

Subject — Peng Yang and Shanghai Yunshiji irrevocably agree to grant an exclusive option to iJoy Holding or one or more persons designated by iJoy Holding (the "**Designated Persons**") to acquire at any time from Peng Yang and Shanghai Yunshiji all or part of the equity interest in the Beijing iJoy at a consideration of CNY10,000,000.00 unless otherwise required by the PRC Laws.

The Exclusive Call Option Agreement (Beijing iJoy) also sets out detailed provisions that prohibit Peng Yang and Shanghai Yunshiji from performing certain acts without the prior written approval from iJoy Holding or Joytone Infotech. For example, Peng Yang and Shanghai Yunshiji undertake not to sell, transfer, mortgage or dispose in any other form any assets, legitimate or beneficial interest of business or income of Beijing iJoy, or to approve any other security interest set on it.

Term: The term of the Exclusive Call Option Agreement (Beijing iJoy) shall remain effective until iJoy Holding or the Designated Persons has exercised its call option under the Exclusive Call Option Agreement (Beijing iJoy) and acquired all equity interest in Beijing iJoy held by Peng Yang and Shanghai Yunshiji.

(c) the Equity Pledge Agreement (Beijing iJoy)

Date: 18 July 2019

Parties:
(i) Joytone Infotech
(ii) Peng Yang
(iii) Shanghai Yunshiji

Subject: Each of Peng Yang and Shanghai Yunshiji agrees to pledge all of the equity interest he/it holds in Beijing iJoy to Joytone Infotech to secure the performance of Beijing iJoy's payment obligations owed to Joytone Infotech under the Exclusive Technical Consulting Agreement (Beijing iJoy).

If Peng Yang, Shanghai Yunshiji and/or Beijing iJoy are in breach of any of their respective obligations under the Equity Pledge Agreement (Beijing iJoy), Joytone Infotech shall have the rights to, among others, dispose of the pledged equity interests.

Term: The Equity Pledge Agreement (Beijing iJoy) shall become effective upon the registration of the equity pledge, and the term of it shall be consistent with the Exclusive Technical Consulting Agreement (Beijing iJoy).

(d) ***the Loan Agreement (Beijing iJoy)***

Date	30 October 2012
Parties	(i) Joytone Infotech
	(ii) Peng Yang
Subject	Joytone Infotech agrees to provide an interest-free loan to Peng Yang in the amount of CNY500,000.00.
Term	The term of the Loan Agreement (Beijing iJoy) is ten (10) years. Joytone Infotech and Peng Yang may extend the term of the Loan Agreement (Beijing iJoy) by mutual agreement.

(e) ***the Letter of Undertaking (Beijing iJoy – Peng Yang)***

Date	30 July 2013
Parties	(i) Peng Yang
	(ii) Beijing iJoy
Subject	Peng Yang and Beijing iJoy undertake that Beijing iJoy has not distributed any dividends to Peng Yang since its establishment; and if Beijing iJoy distributes dividends to Peng Yang in the future, Peng Yang will pay such dividends to iJoy Holding or a company designated by iJoy Holding without compensation within five (5) business days after receipt of such dividends.

(f) ***the Letter of Undertaking (Beijing iJoy – Shanghai Yunshiji)***

Date	18 July 2019
Parties	(i) Peng Yang
	(ii) Shanghai Yunshiji
	(iii) Beijing iJoy

Subject	Peng Yang, Shanghai Yunshiji and Beijing iJoy undertake that Beijing iJoy has not distributed any dividends to Peng Yang and/or Shanghai Yunshiji since its establishment; and if Beijing iJoy distributes dividends to Peng Yang and/or Shanghai Yunshiji in the future, Peng Yang and Shanghai Yunshiji will pay such dividends to iJoy Holding or a company designated by iJoy Holding without compensation within five (5) business days after receipt of such dividends.

(g) the Power of Attorney (Beijing iJoy – Peng Yang)

Date　　18 July 2019

Parties　　Peng Yang

Accepted by Joytone Infotech

Acknowledged by Beijing iJoy

Subject　　Peng Yang irrevocably agrees to entrust to Joytone Infotech all his rights as shareholder in Beijing iJoy, including but not limited to:

(i) attend the shareholders' meetings of Beijing iJoy;

(ii) exercise all the shareholder's rights and shareholder's voting rights entitled to Peng Yang under PRC Laws and the articles of association of Beijing iJoy, including, without limitation, sale or transfer or pledge or dispose of all or any part of the equity interest in Beijing iJoy; and

(iii) designate and appoint the legal representative (chairman), director, supervisor, manager and other senior management of Beijing iJoy as the authorized representative of Peng Yang.

Term　　The Power of Attorney (Beijing iJoy – Peng Yang) shall take effect from the date of its execution and shall remain effective as long as Peng Yang is a shareholder of Beijing iJoy.

(h) the Power of Attorney (Beijing iJoy – Shanghai Yunshiji)

Date　　18 July 2019

Parties	Shanghai Yunshiji Accepted by Joytone Infotech Acknowledged by Beijing iJoy
Subject	Shanghai Yunshiji irrevocably agrees to entrust to Joytone Infotech all its rights as shareholder in Beijing iJoy, including but not limited to: (i) attend the shareholders' meetings of Beijing iJoy; (ii) exercise all the shareholder's rights and shareholder's voting rights entitled to Shanghai Yunshiji under PRC Laws and the articles of association of Beijing iJoy, including, without limitation, sale or transfer or pledge or dispose of all or any part of the equity interest in Beijing iJoy; and (iii) designate and appoint the legal representative (chairman), director, supervisor, manager and other senior management of Beijing iJoy as the authorized representative of Shanghai Yunshiji.
Term	The Power of Attorney (Beijing iJoy – Shanghai Yunshiji) shall take effect from the date of its execution and shall remain effective as long as Shanghai Yunshiji is a shareholder of Beijing iJoy.

(i) the Power of Attorney (Beijing iJoy – Joytone Infotech)

Date	30 July 2013
Parties	Joytone Infotech
Subject	Joytone Infotech irrevocably agrees to entrust to iJoy Holding all its voting rights in Beijing iJoy, including but not limited to: (i) attend the shareholders' meetings of Beijing iJoy;

(ii) exercise all the shareholder's voting rights entitled to Joytone Infotech under PRC Laws and the articles of association of Beijing iJoy, including, without limitation, sale or transfer or pledge or dispose of all or any part of the equity interest in Beijing iJoy; and

(iii) designate and appoint the legal representative (chairman), director, supervisor, manager and other senior management of Beijing iJoy as the authorized representative of Joytone Infotech.

Term — The Power of Attorney (Beijing iJoy – Joytone Infotech) shall take effect from the date of its execution.

(2) The VIE Contracts (Beijing Yiyun)

(a) the Exclusive Technical Consulting Agreement (Beijing Yiyun)

Date	19 December 2006 and 19 December 2016
Parties	(i) VNET Data Center (ii) Beijing Yiyun (iii) Beijing VNET
Subject	Beijing Yiyun and Beijing VNET agree to engage VNET Data Center as the exclusive service provider to provide Beijing Yiyun and Beijing VNET with (A) Internet technology services; and (B) management consulting services (collectively the "**Exclusive Services**"). During the term of the Exclusive Technical Consulting Agreement (Beijing Yiyun), without the prior written consent of VNET Data Center, Beijing Yiyun and Beijing VNET are not allowed to engage any third party to provide services the same as, similar to or comparable to or may replace the Exclusive Services. Beijing Yiyun and Beijing VNET agree to pay a technical consulting and services fee ("**Fees**") equals to the product of (I) an hourly rate of CNY1,000.00 and (II) numbers of hours spent in provision of the Exclusive Services. VNET Data Center may, in its sole discretion, adjust the Fees for the technical consulting and services provided to Beijing Yiyun and Beijing VNET. The Fees shall be paid within 5 days upon submission of an invoice by VNET Data Center to Beijing Yiyun and Beijing VNET on a monthly basis.
Term	The term of the Exclusive Technical Consulting Agreement (Beijing Yiyun) shall be ten (10) years from the date of its execution and shall be automatically extended for another ten (10) years after its expiration. VNET Data Center may unilaterally terminate the Exclusive Technical Consulting Agreement (Beijing Yiyun) at its sole discretion by giving a written notice to Beijing Yiyun and Beijing VNET at least 30 days prior to such termination.

(b) the Optional Share Purchase Agreement (Beijing Yiyun)

Date	27 September 2023
Parties	(i) VNET Data Center (ii) Beijing Yiyun (iii) Beijing VNET (iv) Chen Sheng (v) Zhang Jun
Subject	Chen Sheng and Zhang Jun irrevocably agree to grant an exclusive option to VNET Data Center or one or more persons designated by VNET Data Center (the "**Designated Persons**") to acquire at any time from Chen Sheng and Zhang Jun or Beijing Yiyun all or part of the equity interest in the Beijing Yiyun and Beijing VNET at a consideration of CNY1.00, unless otherwise required by the PRC Laws. The Optional Share Purchase Agreement (Beijing Yiyun) also sets out detailed provisions that prohibit Chen Sheng and Zhang Jun from performing certain acts without the prior written approval from VNET Data Center or the Designated Person. For example, Chen Sheng and Zhang Jun undertake not to sell, transfer, mortgage or dispose in any other form any assets, legitimate or beneficial interest of business or income of Beijing Yiyun and Beijing VNET, or to approve any other security interest set on it.
Term	The term of the Optional Share Purchase Agreement (Beijing Yiyun) shall be ten (10) years from the date of its execution and shall be renewable by VNET Data Center with terms solely determined by it, provided that the Optional Share Purchase Agreement (Beijing Yiyun) shall automatically terminate when Chen Sheng, Zhang Jun and/or Beijing Yiyun cease to hold any equity interest in the Beijing Yiyun and/or Beijing VNET.

(c) the Equity Pledge Agreement (Beijing Yiyun)

Date of registration	24 October 2023
Parties	(i) VNET Data Center
	(ii) Beijing Yiyun
	(iii) Chen Sheng
	(iv) Zhang Jun
Subject	Each of Chen Sheng and Zhangjun agrees to pledge all of the equity interest he holds in Beijing Yiyun to VNET Data Center to secure the loan of CNY60,000,000.00 Chen Sheng and Zhangjun borrowed from VNET Data Center.
	Without the prior written approval from VNET Data Center, Chen Sheng and Zhang Jun shall not transfer the pledged equity interest, or set any other security interest on it.

(d) the Loan Agreement (Beijing Yiyun – Chen Sheng)

Date	28 January 2011
Parties	(i) VNET Data Center
	(ii) Chen Sheng
Subject	VNET Data Center agrees to provide an interest-free loan to Chen Sheng in the amount of CNY7,000,000.00.
Term	The Loan Agreement (Beijing Yiyun – Chen Sheng) shall take effect from the date of its execution and shall remain effective until VNET Data Center and Chen Sheng have fully performed their obligations under the Loan Agreement (Beijing Yiyun – Chen Sheng).

(e) the Loan Agreement (Beijing Yiyun – Zhang Jun)

Date	28 January 2011
Parties	(i) VNET Data Center (ii) Zhang Jun
Subject	VNET Data Center agrees to provide an interest-free loan to Zhang Jun in the amount of CNY3,000,000.00.
Term	The Loan Agreement (Beijing Yiyun – Zhang Jun) shall take effect from the date of its execution and shall remain effective until VNET Data Center and Zhang Jun have fully performed their obligations under the Loan Agreement (Beijing Yiyun – Zhang Jun).

(f) the Letter of Undertaking (Beijing Yiyun)

Date	30 September 2010
Parties	(i) Chen Sheng (ii) Zhang Jun (iii) Beijing Yiyun
Subject	Chen Sheng, Zhang Jun and Beijing Yiyun undertake that Beijing Yiyun has not distributed any dividends to Chen Sheng and/or Zhang Jun since its establishment; and if Beijing Yiyun distributes dividends to Chen Sheng and/or Zhang Jun in the future, Chen Sheng and Zhang Jun will pay such dividends to VNET Data Center or a company designated by VNET Data Center without compensation within five (5) business days after receipt of such dividends.

(g) the Power of Attorney (Beijing Yiyun – Chen Sheng)

Date	31 May 2007
Parties	Chen Sheng
Subject	Chen Sheng irrevocably agrees to entrust to VNET Data Center all his rights as shareholder in Beijing Yiyun, including but not limited to: (i) attend the shareholders' meetings of Beijing Yiyun; (ii) exercise all the shareholder's rights and shareholder's voting rights entitled to Chen Sheng under PRC Laws and the articles of association of Beijing Yiyun, including, without limitation, sale or transfer or pledge or dispose of all or any part of the equity interest in Beijing Yiyun; and (iii) designate and appoint the legal representative (chairman), director, supervisor, manager and other senior management of Beijing Yiyun as the authorized representative of Chen Sheng.
Term	The Power of Attorney (Beijing Yiyun – Chen Sheng) shall take effect from the date of its execution and shall remain effective as long as Chen Sheng is a shareholder of Beijing Yiyun.

(h) the Power of Attorney (Beijing Yiyun – Zhang Jun)

Date	31 May 2007
Parties	Zhang Jun
Subject	Zhang Jun irrevocably agrees to entrust to VNET Data Center all his rights as shareholder in Beijing Yiyun, including but not limited to: (i) attend the shareholders' meetings of Beijing Yiyun;

(ii) exercise all the shareholder's rights and shareholder's voting rights entitled to Zhang Jun under PRC Laws and the articles of association of Beijing Yiyun, including, without limitation, sale or transfer or pledge or dispose of all or any part of the equity interest in Beijing Yiyun; and

(iii) designate and appoint the legal representative (chairman), director, supervisor, manager and other senior management of Beijing Yiyun as the authorized representative of Zhang Jun.

Term	The Power of Attorney (Beijing Yiyun – Zhang Jun) shall take effect from the date of its execution and shall remain effective as long as Zhang Jun is a shareholder of Beijing Yiyun.

(3) The VIE Contracts (Shanghai Zhiyan)

(a) the Exclusive Technical Consulting Agreement (Shanghai Zhiyan)

Date	10 December 2020
Parties	(i) Shanghai Edge Connect
	(ii) Shanghai Zhiyan
Subject	Shanghai Zhiyan agrees to engage Shanghai Edge Connect as the exclusive service provider to provide Shanghai Zhiyan with (A) technical development and transfer, management and consultancy services; (B) occupational training and pre-post training services for employees; (C) product development consultations and services; (D) maintenance of network and software; (E) office network conditions and maintenance; (F) security services for overall system; (G) overall architecture design and implementation of system network, including installation of server system, routine maintenance on a 24*7 basis; and (H) other technical and consultancy services relating to the main business of Shanghai Zhiyan and its subsidiaries (collectively the "**Exclusive Services**").

During the term of the Exclusive Technical Consulting Agreement (Shanghai Zhiyan), without the prior written consent of Shanghai Edge Connect, Shanghai Zhiyan is not allowed to engage any third party to provide services the same as or similar to the Exclusive Services.

Shanghai Zhiyan agrees to pay a technical consulting and services fee ("**Fees**") equals to the product of (I) an hourly rate of CNY1,000.00 and (II) numbers of hours spent in provision of the Exclusive Services. Shanghai Edge Connect may, in its sole discretion, adjust the Fees for the technical consulting and services provided to Shanghai Zhiyan. The payment of the Fees shall be determined by Shanghai Edge Connect in its sole discretion.

Term

The Exclusive Technical Consulting Agreement (Shanghai Zhiyan) shall remain effective unless earlier terminated in accordance with the terms of the Exclusive Technical Consulting Agreement (Shanghai Zhiyan).

Shanghai Edge Connect may unilaterally terminate the Exclusive Technical Consulting Agreement (Shanghai Zhiyan) at its sole discretion by giving a written notice to Shanghai Zhiyan at least 30 days prior to such termination.

(b) the Exclusive Call Option Agreement (Shanghai Zhiyan)

Date

10 December 2020

Parties

(i) Shanghai Edge Connect

(ii) Shanghai Rongyan

(iii) Shanghai Zhiyan

Subject

Shanghai Rongyan irrevocably agrees to grant an exclusive option to Shanghai Edge Connect or one or more persons designated by Shanghai Edge Connect (the "**Designated Persons**") to acquire at any time from Shanghai Rongyan all or part of the equity interest in the Shanghai Zhiyan at a consideration of the minimum price permitted by the PRC Laws.

The Exclusive Call Option Agreement (Shanghai Zhiyan) also sets out detailed provisions that prohibit Shanghai Rongyan from performing certain acts without the prior written approval from Shanghai Edge Connect. For example, Shanghai Rongyan undertakes not to sell, transfer, mortgage or dispose in any other form any assets, legitimate or beneficial interest of business or income of Shanghai Zhiyan, or to approve any other security interest set on it.

Term — The term of the Exclusive Call Option Agreement (Shanghai Zhiyan) shall remain effective until Shanghai Edge Connect or the Designated Persons has exercised its call option under the Exclusive Call Option Agreement (Shanghai Zhiyan) and acquired all equity interest in Shanghai Zhiyan held by Shanghai Rongyan.

(c) the Equity Pledge Agreement (Shanghai Zhiyan)

Date — 10 December 2020

Parties — (i) Shanghai Edge Connect

(ii) Shanghai Rongyan

Subject — Shanghai Rongyan agrees to pledge all of the equity interest he holds in Shanghai Rongyan to Shanghai Edge Connect to secure the performance of the obligations of Shanghai Rongyan and Wifire Beijing under the VIE Contracts (Shanghai Zhiyan).

If Shanghai Rongyan and/or Wifire Beijing are in breach of any of their respective obligations under the VIE Contracts (Shanghai Zhiyan), Shanghai Edge Connect shall have the rights to, among others, dispose of the pledged equity interests.

Term — The Equity Pledge Agreement (Shanghai Zhiyan) shall become effective upon the registration of the equity pledge. The term of the Equity Pledge Agreement (Shanghai Zhiyan) shall be twenty (20) years, and it shall remain effective until the occurrence of any of the following circumstances:

(A) the full repayment and performance of the obligations of Shanghai Rongyan and Wifire Beijing under the VIE Contracts (Shanghai Zhiyan); or

(B) Shanghai Edge Connect and Shanghai Rongyan have reached a mutual agreement on the termination of this Agreement.

(d) the Letter of Undertaking (Shanghai Zhiyan)

Date	10 December 2020
Parties	(i) Shanghai Rongyan
	(ii) Shanghai Zhiyan
Subject	Shanghai Rongyan and Shanghai Zhiyan undertake that Shanghai Zhiyan has not distributed any dividends to Shanghai Rongyan since its establishment; and if Shanghai Zhiyan distributes dividends to Shanghai Rongyan in the future, Shanghai Rongyan will pay such dividends to Shanghai Edge Connect or a party designated by Shanghai Edge Connect without compensation within five (5) business days after receipt of such dividends.

(e) the Power of Attorney (Shanghai Zhiyan)

Date	10 December 2020
Parties	Shanghai Rongyan
Subject	Shanghai Rongyan irrevocably agrees to entrust to Shanghai Edge Connect all its rights as shareholder in Shanghai Zhiyan, including but not limited to:

(i) exercise all the shareholder's rights and shareholder's voting rights entitled to Shanghai Rongyan under PRC Laws and the articles of association of Shanghai Zhiyan, including, without limitation, sale or transfer or pledge or dispose of all or any part of the equity interest in Shanghai Zhiyan; and

(ii) designate and appoint the legal representative (chairman), director, supervisor, manager and other senior management of Shanghai Zhiyan as the authorized representative of Shanghai Rongyan.

Term	The Power of Attorney (Shanghai Zhiyan) shall take effect from the date of its execution and shall remain effective as long as Shanghai Rongyan is a shareholder of Shanghai Zhiyan.

(4) The VIE Contracts (Wifire Beijing)

(a) the Exclusive Technical Consulting Agreement (Wifire Beijing)

Date	11 January 2021
Parties	(i) Abitcool China
	(ii) Wifire Beijing
Subject	Wifire Beijing agrees to engage Abitcool China as the exclusive service provider to provide Wifire Beijing with (A) maintenance of machine room, network and software; (B) office network conditions and maintenance; (C) security services for overall system; and (D) overall architecture design and implementation of system network, including installation of server system, routine maintenance on a 24*7 basis (collectively the "**Exclusive Services**").
	During the term of the Exclusive Technical Consulting Agreement (Wifire Beijing), without the prior written consent of Abitcool China, Wifire Beijing is not allowed to engage any third party to provide the Exclusive Services.
	Wifire Beijing agrees to pay a technical consulting and services fee ("**Fees**") equals to the product of (I) an hourly rate of CNY1,000.00 and (II) numbers of hours spent in provision of the Exclusive Services. Abitcool China may, in its sole discretion, adjust the Fees for the technical consulting and services provided to Wifire Beijing. The Fees shall be paid within 5 days upon submission of an invoice by Abitcool China to Wifire Beijing on a monthly basis.

Term	The term of the Exclusive Technical Consulting Agreement (Wifire Beijing) shall be ten (10) years from the date of its execution. Abitcool China may, at its sole discretion, extend the Exclusive Technical Consulting Agreement (Wifire Beijing) by giving its written consent to the extension of the term before expiration. Abitcool China may unilaterally terminate the Exclusive Technical Consulting Agreement (Wifire Beijing) at its sole discretion by giving a written notice to Wifire Beijing at least 30 days prior to such termination.

(b) the Exclusive Services Agreement (Wifire Beijing)

Date	11 January 2021
Parties	(i) Abitcool China (ii) Wifire Beijing
Subject	Wifire Beijing agrees to engage Abitcool China as the exclusive service provider to provide Wifire Beijing with management consulting and Internet technology services (collectively the "**Exclusive Services**"). During the term of the Exclusive Services Agreement (Wifire Beijing), without the prior written consent of Abitcool China, Wifire Beijing is not allowed to engage any third party to provide services the same as or similar to the Exclusive Services. Wifire Beijing agrees to pay a services fee ("**Fees**") equals to the product of (A) an hourly rate of CNY1,000.00 and (B) numbers of hours spent in provision of the Exclusive Services. Abitcool China may, in its sole discretion, adjust the Fees for the technical consulting and services provided to Wifire Beijing. The Fees shall be paid within 5 days upon submission of an invoice by Abitcool China to Wifire Beijing on a monthly basis.

Term	The Exclusive Services Agreement (Wifire Beijing) shall terminate upon the execution of a new agreement regarding the service items agreed under the Exclusive Services Agreement (Wifire Beijing) between Abitcool China and Wifire Beijing.

(c) ***the Exclusive Call Option Agreement (Wifire Beijing)***

Date	11 January 2021
Parties	(i) WiFire Group (ii) Chen Sheng (iii) Wifire Beijing
Subject	Chen Sheng irrevocably agrees to grant an exclusive option to WiFire Group or one or more persons designated by WiFire Group (the "**Designated Persons**") to acquire at any time from Chen Sheng all or part of the equity interest in the Wifire Beijing at a consideration of CNY1,000,000.00 unless otherwise required by the PRC Laws. The Exclusive Call Option Agreement (Wifire Beijing) also sets out detailed provisions that prohibit Chen Sheng from performing certain acts without the prior written approval from WiFire Group. For example, Chen Sheng undertakes not to sell, transfer, mortgage or dispose in any other form any assets, legitimate or beneficial interest of business or income of Wifire Beijing, or to approve any other security interest set on it.
Term	The term of the Exclusive Call Option Agreement (Wifire Beijing) shall remain effective until WiFire Group or the Designated Persons has exercised its call option under the Exclusive Call Option Agreement (Wifire Beijing) and acquired all equity interest in Wifire Beijing held by Chen Sheng.

(d) the Equity Pledge Agreement (Wifire Beijing)

Date	11 January 2021
Parties	(i) Abitcool China
	(ii) Chen Sheng
Subject	Chen Sheng agrees to pledge all of the equity interest he holds in Wifire Beijing to Abitcool China to secure the performance of Wifire Beijing's payment obligations owed to Abitcool China under the Exclusive Technical Consulting Agreement (Wifire Beijing).
	If Chen Sheng and/or Wifire Beijing are in breach of any of their respective obligations under the Equity Pledge Agreement (Wifire Beijing), Abitcool China shall have the rights to, among others, dispose of the pledged equity interests.
Term	The Equity Pledge Agreement (Wifire Beijing) shall become effective upon the registration of the equity pledge, and the term of it shall be consistent with the Exclusive Technical Consulting Agreement (Wifire Beijing).

(e) the Loan Agreement (Wifire Beijing)

Date	11 January 2021
Parties	(i) Abitcool China
	(ii) Chen Sheng
Subject	Abitcool China agrees to provide an interest-free loan to Chen Sheng in the amount of CNY1,000,000.00.
Term	The term of the Loan Agreement (Wifire Beijing) is ten (10) years. Abitcool China and Chen Sheng may extend the term of the Loan Agreement (Wifire Beijing) by mutual agreement.

(f) the Letter of Undertaking (Wifire Beijing)

Date	11 January 2021
Parties	(i) Chen Sheng
	(ii) Wifire Beijing
Subject	Chen Sheng and Wifire Beijing undertake that Wifire Beijing has not distributed any dividends to Chen Sheng since its establishment; and if Wifire Beijing distributes dividends to Chen Sheng in the future, Chen Sheng will pay such dividends to WiFire Group or a party designated by WiFire Group without compensation within five (5) business days after receipt of such dividends.

(g) the Power of Attorney (Wifire Beijing – Chen Sheng)

Date of execution	11 January 2021
Parties	Chen Sheng
Subject	Chen Sheng irrevocably agrees to entrust to Abitcool China all his rights as shareholder in Wifire Beijing, including but not limited to:
	(i) attend the shareholders' meetings of Wifire Beijing;
	(ii) exercise all the shareholder's rights and shareholder's voting rights entitled to Chen Sheng under PRC Laws and the articles of association of Wifire Beijing, including, without limitation, sale or transfer or pledge or dispose of all or any part of the equity interest in Wifire Beijing; and
	(iii) designate and appoint the legal representative (chairman), director, supervisor, manager and other senior management of Wifire Beijing as the authorized representative of Chen Sheng.
Term	The Power of Attorney (Wifire Beijing – Chen Sheng) shall take effect from the date of its execution and shall remain effective as long as Chen Sheng is a shareholder of Wifire Beijing.

(h) ***the Power of Attorney (Wifire Beijing – Abitcool China)***

Date of execution	11 January 2021
Parties	Abitcool China
Subject	Abitcool China irrevocably agrees to entrust to WiFire Group all its voting rights in Wifire Beijing, including but not limited to: (i) attend the shareholders' meetings of Wifire Beijing; (ii) exercise all the shareholder's voting rights entitled to Abitcool China under PRC Laws and the articles of association of Wifire Beijing, including, without limitation, sale or transfer or pledge or dispose of all or any part of the equity interest in Wifire Beijing; and (iii) designate and appoint the legal representative (chairman), director, supervisor, manager and other senior management of Wifire Beijing as the authorized representative of Abitcool China.
Term	The Power of Attorney (Wifire Beijing –Abitcool China) shall take effect from the date of its execution.

Internal control measures implemented by the Target Company

The VIE Contracts contain certain provisions in order to exercise effective control by WFOE over and to safeguard the assets of the OPCO Group Companies, including but not limited to that for each OPCO Group Company, without the prior written consent of the corresponding WFOE, its OPCO Registered Shareholder(s) shall not at any time sell, transfer, pledge, or otherwise dispose or create any encumbrances over the legal or beneficial interests of the OPCO Group Company. Each of the OPCO Group Companies shall conduct its business in its ordinary and usual course to preserve the asset value of it and shall not engage in any action (or inaction) which may have any adverse effect on the business, operations and asset value of it. In addition, each OPCO Group Company's legal representative, directors, supervisor, manager and senior officers may be appointed under the corresponding WFOE's nominations.

Compliance of the VIE Contracts with PRC Laws

As advised by the PRC Legal Advisers, the VIE Contracts comply with the PRC Laws in effect as at the Latest Practicable Date, including those applicable to the business of each OPCO Group Company and its corresponding WFOE (including the Catalogue and the Negative List), do not contravene the articles of each OPCO Group Company and its corresponding WFOE, and would not be deemed as "concealing illegal intentions with a lawful form" and void under the PRC Civil Code. As at the Latest Practicable Date, the VIE Contracts are valid and enforceable against the parties to the VIE Contracts. The PRC Legal Advisers also confirm that all necessary actions or steps have been taken to enable it to reach its legal conclusions, provided that each WFOE's right to deal with the pledged equity interest in the corresponding OPCO Group Company pursuant to the relevant Equity Pledge Agreement and its option to acquire the relevant equity interest in the relevant OPCO Group Company held by the corresponding OPCO Registered Shareholders under the corresponding Call Option Agreement are confined to be carried out in a manner as permitted by the relevant PRC Laws.

Based on the above, the Board is of the view that each VIE Contract is enforceable under the relevant PRC Laws. To the best of the knowledge, information and belief of the Directors, having made all reasonable enquiries, as at the Latest Practicable Date, each OPCO Group Company and its corresponding WFOE have not encountered any interference or encumbrance from any governing bodies in operating its business through the Contractual Arrangements.

In respect of each OPCO Group Company, the VIE Contracts in relation to it enable its corresponding WFOE to gain control over the financing and business operations of it and deal with its assets, and the WFOE is entitled to the economic interest and benefits of it.

However, as advised by the PRC Legal Advisers, there are uncertainties regarding the interpretation and application of current and future PRC Laws relating to the VIE Contracts. Accordingly, relevant PRC governmental or judicial authorities may take a view that is contrary to the opinion of the PRC Legal Advisers. It is uncertain whether any new PRC Laws relating to the VIE Contracts will be adopted, or if adopted, what the laws would provide. If the Target Group is found to be in violation of existing or future PRC Laws, or fail to obtain or maintain any of the required permits or approvals, the relevant PRC governmental or judicial authorities may take action in dealing with the violation or failure, in which case, the Target Group could be subject to severe penalties, including being prohibited from continuing the OPCO Group's operations or unwinding the Contractual Arrangements.

Manner of settlement of disputes which may arise from the VIE Contracts

Each of the Call Option Agreements, the Exclusive Technical Consulting Agreements, the Loan Agreements, the Equity Pledge Agreement (Beijing iJoy) and the Equity Pledge Agreement (Shanghai Zhiyan) contains a dispute resolution clause. Pursuant to such clause, in the event of any dispute between the parties to such VIE Contracts regarding the interpretation and performance thereof, the parties to the dispute shall settle the dispute through amicable negotiation, failing which either party may submit the dispute to the Shanghai International Economic and Trade Arbitration Commission（上海國際經濟貿易仲裁委員會）(in the case of such VIE Contracts to which Shanghai Zhiyan is a party) or the China International Economic and Trade Arbitration Commission（中國國際經濟貿易仲裁委員會）(in the case of such VIE Contracts to which any other OPCO Group Company is a party) for arbitration in accordance with its then effective arbitration rules. The arbitration shall be conducted in Shanghai (in the case of such VIE Contracts to which Shanghai Zhiyan is a party) or Beijing (in the case of such VIE Contracts to which any other OPCO Group Company is a party). The decision of the arbitration shall be final and binding on the parties.

Each other VIE Contract is governed by PRC Laws and may be enforced by the parties thereto in the courts of the PRC.

Conflict of interests

Arrangements have been made to address the potential conflict of interests between the OPCO Group Companies, their corresponding OPCO Registered Shareholders and the Target Company. Pursuant to the Powers of Attorney, the OPCO Registered Shareholder(s) of each OPCO Group Company shall irrevocably appoint its corresponding WFOE, of which none of the OPCO Registered Shareholders who are individuals is a director, the legal representative nor the supervisor, as his/its attorney-in-fact to act for all matters pertaining to the relevant OPCO Group Company and to exercise all of his/its rights as shareholder(s) of the relevant OPCO Group Company.

Other matters relating to the VIE Contracts

The Target Company agrees that it will amend the relevant VIE Contracts to reflect the requirements of the Guidance Letter in relation to paragraphs (b) to (e) below after the Closing.

(a) (i) in the case of Beijing iJoy and Beijing Yiyun, (A) the relevant restrictions under the Catalogue and the Negative List permits foreign owners to hold up to 50% of the equity interest in enterprises conducting internet information services, (B) the Mainland and Hong Kong Closer Economic Partnership Arrangement and the Mainland and Macau Closer Economic Partnership Arrangement permit qualified telecommunication service enterprise incorporated in Hong Kong or Macau to hold up to 50% of the equity interest in enterprises conducting including the provision of internet data centre services, internet access services, domestic internet protocol virtual private network services and content delivery network services, while the Target Company does not hold any direct or indirect equity interest in Beijing iJoy and Beijing Yiyun; (ii) in the case of Shanghai Zhiyan, it is a holding company which holds 100% of the equity interest in Shanghai Blue Cloud which in turn conducts internet data centre services, internet access services and internet information services, while as mentioned above, foreign investors or qualified telecommunication service enterprise incorporated in Hong Kong or Macau are permitted to hold up to 50% of the equity interest in enterprises engaged in such business, while the Target Company does not hold any direct or indirect equity interest in Shanghai Zhiyan; and (iii) in the case of Wifire Beijing, it no longer holds any licence to which restrictions on foreign ownership applies, nor engaged in any such business, while the VIE Contracts in relation to Wifire Beijing has not been unwound by the Target Company.

The Company understands from the Target Company that:

(I) pursuant to the Negative List, within the scope of the telecommunications services that China has promised to open up in its accession to the World Trade Organisation (WTO), foreign investors are restricted from holding more than 50% of the equity interest of enterprises operating such value-added telecommunications services (except for e-commerce, domestic multi-party communication, storage and forwarding and call centre). Any value-added telecommunication services that are not included in the scope of China's WTO commitments to open up to foreign investment, including the provision of internet data centre services, internet access services, domestic internet protocol virtual private network services and content delivery network services in which Beijing iJoy, Beijing Yiyun and Shanghai Blue Cloud are engaged, are generally prohibited from foreign investment, except for holding up to 50% of the equity interest of enterprises by qualified telecommunication service enterprise incorporated in Hong Kong or Macau in accordance with the Mainland and Hong Kong Closer Economic Partnership Arrangement or the Mainland and Macau Closer Economic Partnership Arrangement. To the best knowledge of the Target Company in the industry, in the case of Beijing iJoy, Beijing Yiyun and Shanghai Blue Cloud, in practice the relevant authority would not issue the licenses that are held by Beijing iJoy, Beijing Yiyun and Shanghai Blue Cloud if any foreign owners hold any equity interest in these companies; and

(II) in the case of Wifire Beijing, it intends to apply for a value-added telecommunications service operation licence with permitted scope of provision of internet data centre services, internet access services and domestic internet protocol virtual private network services, which is subject to the restrictions on foreign investment as mentioned above;

(b) the Powers of Attorney were only granted by the OPCO Registered Shareholders to their respective WFOEs. Although the WFOEs may assign their rights under the Powers of Attorney, the Powers of Attorney did not expressly name the Target Company's directors, their successors, nor any liquidator replacing them, as grantees;

(c) the dispute resolution clauses in the Call Option Agreements, the Exclusive Technical Consulting Agreements, the Loan Agreements, the Equity Pledge Agreement (Beijing iJoy) and the Equity Pledge Agreement (Shanghai Zhiyan) provided for arbitration, but not (A) that arbitrators' power to award remedies over the shares or land assets of any OPCO Group Company, injunctive relief (e.g. for the conduct of business or to compel the transfer of assets) or order the winding up of OPCO Group Company; (B) the power of the courts of competent jurisdictions to grant interim remedies in support of the arbitration pending formation of the arbitral tribunal or in any other cases; nor (C) the jurisdiction for this purpose of the courts of Hong Kong, the Target Company's place of incorporation, the OPCO Group Companies' place of incorporation, and the place where the Target Company or the OPCO Group Companies' principal assets are located. The other VIE Contracts did not provide for dispute resolution by way of arbitration;

(d) the absence of (i) provisions for termination of the relevant Contractual Arrangements as soon as the law allows the businesses of any OPCO Group Company to be operated without its relevant VIE Contracts; and (ii) any undertaking from the OPCO Registered Shareholders to return to the Target Company or the WFOEs any consideration they receive in the event that the Target Company acquires any OPCO Group Companies' shares when terminating the relevant Contractual Arrangements; and

(e) no express arrangements were made in the VIE Contracts to protect the Target Company's interests in the event of death, bankruptcy or divorce of any OPCO Registered Shareholder.

RISK FACTORS IN RELATION TO THE VIE CONTRACTS

Uncertainties exist with respect to the interpretation and implementation of the Foreign Investment Law and how it may impact the viability of the VIE Contracts, corporate governance and business operations of the Target Group

On 15 March 2019, the Standing Committee of National People's Congress promulgated the 2019 PRC Foreign Investment Law, which became effective on 1 January 2020. The 2019 PRC Foreign Investment Law replaces the trio of existing laws regulating foreign investment in China, namely, the Wholly Foreign-owned Enterprises Law, the Sino-foreign Equity Joint Ventures Law, and the Sino-foreign Cooperative Joint Ventures Law, together with their implementation rules and ancillary regulations, and embodies an expected PRC regulatory trend to rationalise its foreign investment regulatory regime in line with prevailing international practice and the legislative efforts to unify the corporate legal requirements for both foreign and domestic investments. However, uncertainties still exist in relation to interpretation and implementation of the 2019 PRC Foreign Investment Law, especially in regard to, including, among other things, the nature of VIE structure. In case there would be material and adverse effect on the Target Group or the business of any of the OPCO Group Companies arising from the 2019 PRC Foreign Investment Law, the Company will timely announce (i) any updates or material changes to the 2019 PRC Foreign Investment Law; (ii) if any updates or material changes to the 2019 PRC Foreign Investment Law are implemented, a clear description and analysis of the law, specific measures taken by the Company and/or the Target Group to be in compliance with the 2019 PRC Foreign Investment Law with the support of a PRC legal opinion; and (iii) any material impact of the 2019 PRC Foreign Investment Law on the Target Group's operations and financial position (if any).

The VIE structure has been adopted by many PRC-based companies to obtain necessary licenses and permits in the industries that are currently subject to foreign investment restrictions in the PRC. While the 2019 PRC Foreign Investment Law and its implementation regulations which took effect on 1 January 2020, do not define the Contractual Arrangements as a form of foreign investment explicitly, it cannot be guaranteed that future laws and regulations will not provide for the Contractual Arrangements as a form of foreign investment. Therefore, there can be no assurance that the Target Company's control over the OPCO Group through the Contractual Arrangements will not be deemed as a foreign investment in the future.

In the event that any possible future laws, administrative regulations or provisions deem the Contractual Arrangements as a way of foreign investment, or if any of the OPCO Group Companies' operations through the Contractual Arrangements is classified in the "restricted" or "prohibited" industry, the VIE Contracts may be deemed as invalid and illegal, and the Target Group may be required to unwind the Contractual Arrangements and/or dispose of any affected business. Also, if future laws, administrative regulations or provisions mandate further actions to be taken with respect to existing contractual arrangements, the Target Group may face substantial uncertainties as to whether it can complete such actions in a timely manner, or at all.

The PRC government may determine that the VIE Contracts do not comply with the applicable PRC Laws, or if these regulations or their interpretations change in the future, the Target Group may be subject to penalties or be forced to relinquish its interests in those operations.

There can be no assurance that the VIE Contracts will be deemed by the relevant PRC governmental or judicial authorities to be in compliance with the existing or future applicable PRC Laws, or the PRC relevant governmental or judicial authorities may in the future interpret the existing laws or regulations with the result that the VIE Contracts will be deemed to be in compliance of the PRC Laws.

Due to legal restrictions on foreign investment in companies established in the PRC providing internet data centre (IDC), internet services provider (ISP), virtual private network (VPN) and information services, the Target Company will operate the OPCO Group Companies through the Contractual Arrangements with the OPCO Group Companies and their respective OPCO Registered Shareholders. In respect of each OPCO Group Company, the Contractual Arrangements enable its corresponding WFOE to: (i) hold effective control over the OPCO Group Company; (ii) receive substantially all of the economic benefits of the OPCO Group Company; and (iii) have an exclusive option to purchase all or part of the equity interests in the OPCO Group Company held by its OPCO Registered Shareholder(s) when and to the extent permitted by PRC Laws at any time of its discretion. In respect of each OPCO Group Company, because of the Contractual Arrangements, its corresponding WFOE will be the primary beneficiary of the equity interest in it held by its corresponding OPCO Registered Shareholder(s) and consolidate the results of operations of the OPCO Group Company into the Target Company's. Each of Beijing iJoy, Beijing Yiyun and Shanghai Blue Cloud hold the licenses, approvals and key assets that are essential to its business operations.

In respect of each OPCO Group Company, if the PRC government finds that the Contractual Arrangements do not comply with the existing or future restrictions on foreign investment, or if the PRC government otherwise finds that the OPCO Group Company or its corresponding WFOE is in violation of the existing or future PRC Laws or lack the necessary permits or licenses to operate its business, the relevant PRC regulatory authorities would have broad discretion in dealing with such violations or failures, including, without limitation:

(a) revoking the OPCO Group Company's business and operating licenses;

(b) discontinuing or restricting the OPCO Group Company's operations;

(c) imposing fines or confiscating the OPCO Group Company's income that they deem to have been obtained through illegal operations;

(d) imposing conditions or requirements with which OPCO Group Company may not be able to comply;

(e) requiring the OPCO Group Company to restructure the relevant ownership structure or operations;

(f) restricting the OPCO Group Company's financing activities to finance the business and operations of the OPCO Group Company; or

(g) taking other regulatory or enforcement actions that could be harmful to the OPCO Group Company's business.

Any of these actions could cause significant disruption to the Target Group's business operations, and may materially and adversely affect the Target Group's business, financial condition and results of operations. In addition, it is unclear what impact the PRC government's actions would have on the Target Company and the Target Company's ability to consolidate the financial results of each OPCO Group Company in the Target Company's consolidated financial statements, if the PRC governmental authorities find the Target Company's legal structure and the Contractual Arrangements to be in violation of PRC Laws. If any of these penalties results in the Target Company's inability to direct the activities of any OPCO Group Company that most significantly impact their economic performance and/or the Target Company's failure to receive the economic benefits from the OPCO Group Company, the Target Company may not be able to consolidate the OPCO Group Company's financial results into the Target Company's consolidated financial statements.

The VIE Contracts may not be as effective as direct ownership in providing the Target Company with control over the OPCO Group Companies

The Target Company relies on the Contractual Arrangements to operate the OPCO Group Companies in the PRC. The Contractual Arrangements may not be as effective in providing the Target Company with control over the OPCO Group Companies as direct ownership. If any OPCO Group Company or any of its corresponding OPCO Registered Shareholder(s) fail to perform its obligations under the VIE Agreements to which it is a party, the Target Company may incur substantial costs and expend substantial resources to enforce its rights. All the VIE Contracts are governed by PRC Laws. As a result, the continued updates and amendments in the PRC legal system could limit the Target Company's ability to enforce the VIE Contracts. In the event that the Target Company is unable to enforce the VIE Contracts, or if the Target Company suffers significant time delays or other obstacles in the process of enforcing them, it would be very difficult to exert effective control over the OPCO Group Companies, and the Target Company's ability to conduct its business and its financial condition and results of operations may be materially and adversely affected.

The PRC Nominee Shareholders may potentially have a conflict of interests with the Target Company

The Target Group's control over the OPCO Group Companies will be based on the Contractual Arrangements. Therefore, conflict of interests of the OPCO Group Companies and the OPCO Registered Shareholders will adversely affect the interests of the Target Company.

As disclosed in the section headed "Information of the VIE Contracts – Conflict of interests" above, pursuant to the Powers of Attorney, the OPCO Registered Shareholder(s) of each OPCO Group Company shall irrevocably appoint its corresponding WFOE, of which none of the OPCO Registered Shareholders who are individuals is a director, the legal representative nor the supervisor, as his/its attorney-in-fact to act for all matters pertaining to the relevant OPCO Group Company and to exercise all of his/its rights as shareholder(s) of the relevant OPCO Group Company. Therefore, it is unlikely that there will be potential conflict of interests between the Target Company and such OPCO Registered Shareholders. However, in the unlikely event that conflicts of interest arise between such OPCO Registered Shareholders and the Target Company and such conflicts cannot be resolved, the Target Company, through the WFOEs, may remove and replace such OPCO Registered Shareholders under the VIE Contracts.

The Contractual Arrangements may be subject to scrutiny of the PRC tax authorities and transfer pricing adjustments and additional tax may be imposed

The Target Group could face material adverse tax consequences if the PRC tax authorities determine that the arrangements under the VIE Contracts were not entered into based on arm's length negotiations. If the PRC tax authorities determine that these agreements were not entered into on an arm's length basis, they may adjust income and expenses for PRC tax purposes in the form of a transfer pricing adjustment. A transfer pricing adjustment could adversely affect the Target Group's financial position by increasing the relevant tax liability without reducing the tax liabilities of the OPCO Group Companies, and this could further result in late payment fees and other penalties to the OPCO Group Companies for under-paid taxes. As a result, any transfer pricing adjustment could have a material adverse effect on the Target Group's financial position and results of operations.

A substantial amount of costs and time may be involved in transferring the ownership of the OPCO Group Companies to the Target Company under the Call Option Agreements

In respect of each OPCO Group Company, the Call Option Agreement to which it is a party grants its corresponding WFOE a right to acquire part or all of the equity interest in it held by its corresponding OPCO Registered Shareholder(s) at the lowest price permitted by PRC Laws, under which the WFOE is entitled to acquire from such OPCO Registered Shareholder(s) all or part of the equity interest in such OPCO Group Company held by such OPCO Registered Shareholder(s).

Nevertheless, such rights in respect of each OPCO Group Company can only be exercised by its corresponding WFOE as and when permitted by the relevant PRC Laws, in particular, when there are no limitations on foreign ownership in PRC companies that provide internet data centre (IDC), internet services provider (ISP), virtual private network (VPN), information services, content distribution network, domestic ethernet data transfer, domestic virtual private network (VPN), domain name analysis, and online data and transaction processing operations.

In addition, a substantial amount of costs and time may be involved in transferring the equity interest in any OPCO Group Company held by its corresponding OPCO Registered Shareholder(s) to its corresponding WFOE if such WFOE chooses to exercise the exclusive right to acquire all or part of the equity interest in such OPCO Group Company held by its corresponding OPCO Registered Shareholder(s) under the Call Option Agreement to which such OPCO Group Company is a party, which may have a material adverse impact on the Target Company's business, prospects and results of operation.

The Group does not have any insurance which covers the risks relating to the VIE Contracts and the transactions contemplated thereunder

The insurance of the Group does not cover the risks relating to the VIE Contracts and the transactions contemplated thereunder and the Company has no intention to purchase any insurance in this regard. If any risk arises from the VIE Contracts in the future, such as those affecting the enforceability of the VIE Contracts and the operation of any of the OPCO Group Companies, the returns the Group may receive from its holding of the Subscription Shares, hence the financial results and financial position of the Group, may be adversely affected. However, the Group will monitor the relevant legal and operational environment from time to time to comply with the applicable laws and regulations.

Economic risks each WFOE bears as the primary beneficiary of its corresponding OPCO Group Company, financial support to such OPCO Group Company and potential exposure of the Target Company to losses

As the primary beneficiary of each OPCO Group Company, its corresponding WFOE will share both profit and loss of such OPCO Group Company; equally, each WFOE bears economic risks which may arise from difficulties in the operation of its corresponding OPCO Group Company's businesses. Each WFOE may have to provide financial support in the event of financial difficulty of its corresponding OPCO Group Company. Under these circumstances, the Target Group's financial results and financial position may be adversely affected by the worsening financial performance of any OPCO Group Company and the need to provide financial support to any such OPCO Group Company.

IMPLICATIONS UNDER THE LISTING RULES

As one or more of the applicable percentage ratios in respect of the Subscription exceed 25% and all of the applicable ratios are less than 100%, the Investment Agreement constitutes a major transaction for the Company, and the Company is therefore subject to the reporting, announcement, circular and Shareholders' approval requirements under Chapter 14 of the Listing Rules.

WAIVER FROM STRICT COMPLIANCE WITH THE REQUIREMENTS UNDER THE LISTING RULES

Pursuant to Rules 14.67(6)(a)(i) and 14.67(7) of the Listing Rules, the Company is required to include in this circular an accountant's report on the Target Company which is prepared in accordance with Chapter 4 of the Listing Rules and a discussion and analysis on results of the Target Company covering all those matters set out in paragraph 32 of Appendix 16 to the Listing Rules for the period reported in such accountant's report. The accounts on which the accountant's report is based must relate to a financial period ended six months or less before this circular is issued, and the financial information on the Target Company must be prepared using accounting policies which should be materially consistent with those of the Company. In this regard, the Company is required under Chapter 4 of the Listing Rules to include an accountant's report on the Target Company with the financial information of the Target Company for the three financial years ended 31 December 2022 plus a stub period which is ended not more than six months from the date of this circular prepared under HKFRS and the Company is also required to include the management discussion and analysis on results of the Target Company for the financial periods reported in such accountant's report.

As the Company considers that the strict compliance with Rules 14.67(6)(a)(i) and 14.67(7) of the Listing Rules would be unduly burdensome, the Company has applied for waiver from strict compliance of the aforesaid Listing Rules on the following grounds:

(a) upon Closing, approximately 42.12% of the shareholding of the Target Company will be acquired by the Company (excluding treasury shares and class A ordinary shares in the form of ADSs that are reserved for issuance upon the exercise of share incentive awards of the Target Company). The Target Company will not become a subsidiary of the Company and the financial results of the Target Company will not be consolidated in the financial statements of the Group. Requiring the Company to arrange for an accountants' report in accordance with Chapter 4 of the Listing Rule would produce no material increase in benefit to the Shareholders and potential investors of the Company. The Company considers that it is more practical and appropriate to make the proposed alternative disclosures (see the section headed "Alternative Disclosures" below) in this circular based on the available information of the Target Company;

(b) the Target Company is a company listed on the NASDAQ and is required to include in its SEC filings on a regular basis the financial information of the Target Group prepared under the US GAAP, instead of HKFRS. Such SEC filings have been published by the Target Company as required and can be easily obtained by the Shareholders of the Company and will enable them and potential investors to make a properly informed assessment of the Target Group. The conversion of the financial information of the Target Group from US GAAP to HKFRS for this circular will result in two sets of financial information of different accounting standards for the same financial period being published on two different stock exchanges, which will give rise to unnecessary confusion to Shareholders and potential investors;

(c) the Target Company, as a NASDAQ-listed company, has historically published at the SEC its financial statements in accordance with US GAAP, audited by Ernst & Young Hua Ming LLP ("**EY**") (for the years ended 31 December 2020 and 2021) and KPMG Huazhen LLP ("**KPMG**") (for the year ended 31 December 2022) in accordance with the standards of the Public Company Accounting Oversight Board (United States). The Group did intend to engage the Group's auditors, Crowe (HK) CPA Limited ("**Crowe**"), to prepare reconciliation of the Target Group's financial statements for the three years ended 31 December 2022 and the six months ended 30 June 2023 to address the differences in financial information of the Target Group if it were prepared in accordance with the Group's accounting policies. In order to do the reconciliation, Crowe has to obtain audit work paper from KPMG and EY for the three years ended 31 December 2022. KPMG and EY refused to provide such audit work paper to Crowe due to confidentiality issue and as a result Crowe is not able to conduct the reconciliation. In order to comply with Rule 14.67(6)(a)(i) of the Listing Rules, the Group has to engage Crowe to conduct a full audit on the Target Group for the three years ended 31 December 2022 and the six months ended 30 June 2023. The Group would incur significant costs in engaging Crowe to conduct such audit work which would produce no material increase in benefit to the Shareholders as the financial statements under the US GAAP would also enable Shareholders and potential investors to have a clear picture of the financial condition of the Target Group. Performing such full audit procedures would also take months to complete and this would also cause unnecessary delay to the Closing;

(d) none of the audited consolidated financial statements of the Target Company for the three years ended 31 December 2022, has been issued with any audit qualifications;

(e) the accounting standards under the US GAAP and HKFRS are materially consistent; and

(f) as the Closing is subject to satisfaction or waiver of the Conditions Precedent, the Subscription may or may not proceed. As such, the Company had not been granted with assess to non-public financial information and underlying books and records of the Target Company. For the purpose of the discussion and analysis of results of the Target Company, particularly the information relating to the Target Company under paragraph 32(2)(a) to appendix 16 of the Listing Rules (namely funding and treasury policies and objectives in terms of the manner in which treasury activities are controlled) for the three years ended 31 December 2022 and paragraphs 32(2)(a), (7), (8) and (12) to appendix 16 of the Listing Rules (namely (i) funding and treasury policies and objectives in terms of the manner in which treasury activities are controlled; (ii) funding and treasury policies and objectives in terms of the manner in which treasury activities are controlled details of remuneration policies, bonus and share option schemes and training schemes; (iii) details of charges on group assets; and (iv) details of contingent liabilities) for the six months ended 30 June 2023 are not available from the TargetCo Published Reports (as defined below).

In light of the above, the Company considers that strict compliance with requirements under Rules 14.67(6)(a)(i) and 14.67(7) of the Listing Rules would be unduly burdensome and impractical, and a relaxation of such requirements would unlikely result in undue risks to the Shareholders and potential investors of the Company.

Alternative Disclosures

The Company has included the following information in this circular as alternative disclosure to an accountants' report required under Rule 14.67(6)(a)(i) of the Listing Rules and a management discussion and analysis required under Rule 14.67(7) of the Listing Rules (the "**Alternative Disclosures**"):

(a) the audited annual consolidated financial statements of the Target Company for the year ended 31 December 2020 extracted from the annual report of the Target Company for the fiscal year ended 31 December 2020 ("**TargetCo AR 2020**");

(b) the audited annual consolidated financial statements of the Target Company for the year ended 31 December 2021 extracted from the annual report of the Target Company for the fiscal year ended 31 December 2021 ("**TargetCo AR 2021**");

(c) the audited annual consolidated financial statements of the Target Company for the year ended 31 December 2022 extracted from the annual report of the Target Company for the fiscal year ended 31 December 2022 ("**TargetCo AR 2022**");

(d) the unaudited consolidated balance sheets of the Target Company as at 30 June 2023, the unaudited consolidated statement of operations of the Target Company for the six months ended 30 June 2023 and the unaudited consolidated statement of cash flows of the Target Company for the six months ended 30 June 2023 extracted from the report for second quarter 2023 of the Target Company (‘**TargetCo Q2R 2023**”, together with TargetCo AR 2020, TargetCo AR 2021 and TargetCo AR 2022, the “**TargetCo Published Reports**”);

(e) extracts of the respective annual reports of the Target Group for the years ended 31 December 2022, 2021 and 2020 together with supplement discussion and analysis on certain aspects prepared by the Company for the said periods based on the information available to the Company as at the Latest Practicable Date; and

(f) a management discussion and analysis for financial results the Target Company for the six months ended 30 June 2023 prepared by the Company based on the information available to the Company as at the Latest Practicable Date.

The Directors consider that the Alternative Disclosures shall contain sufficient and appropriate financial information of the Target Group in this circular to allow the Shareholders to make a properly informed decision on voting on the proposed Subscription. Under the Alternative Disclosures, the Shareholders will be fully-informed by the financial information of the Target Group throughout the periods presented, which is being broadly commensurate in all material respects to the disclosure that would otherwise have been provided if an accountants’ report on the Target Group had been produced under Rule 14.67(6)(a)(i) and the management discussion and analysis of the results of the Target Group had been prepared under Rule 14.67(7) of the Listing Rules.

Based on the information provided by the Company and the Alternative Disclosures, the Stock Exchange has granted the Company waiver from strict compliance with the requirements under Rules 14.67(6)(a)(i) and Rule 14.67(7) of the Listing Rules.

SGM

A notice convening the SGM to be held at Conference Room, 38/F, The Center, 99 Queen’s Road Central, Central, Hong Kong on Wednesday, 27 December 2023 at 11:00 a.m. is set out from pages SGM-1 to SGM-2 of this circular. A form of proxy for use at the SGM is also enclosed herewith. Shareholders who wish to vote are requested to complete and return the enclosed form of proxy in accordance with the instructions printed thereon to the Company’s branch share registrar in Hong Kong, Computershare Hong Kong Investor Services Limited, at 17M Floor, Hopewell Centre, 183 Queen’s Road East, Wanchai, Hong Kong as soon as possible and in any event not less than 48 hours before the time appointed for the holding of the meeting and/or any adjournment thereof (as the case may be). If you are not a registered Shareholder (if your Shares are held via banks, brokers, custodians, or the Hong Kong Securities Clearing Company Limited), you should consult your banks or brokers or custodians (as the case may be) directly to assist you in the appointment of proxy. Completion and return of the form of proxy will not preclude you from attending and voting in person at the SGM or at any adjourned meeting should you so wish.

To the best of the Directors' knowledge, information and belief having made all reasonable enquiries, as at the Latest Practicable Date, no Shareholder is involved in or interested in the Investment Agreement and the transactions contemplated thereunder which requires him/her/it to abstain from voting on the resolution approving the Investment Agreement and the transactions contemplated thereunder at the SGM.

CLOSURE OF REGISTER OF MEMBERS

The register of members will be closed on Wednesday, 27 December 2023, during the day no transfer of Shares will be registered. In order to determine the entitlement to attend and vote at the SGM, all transfer of Shares, accompanied by the relevant share certificates and transfer forms, must be lodged with the Company's branch share registrar in Hong Kong, Computershare Hong Kong Investor Services Limited, at Shops 1712-1716, 17th Floor, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong, for registration not later than 4:30 p.m. on Friday, 22 December 2023.

RECOMMENDATION

The Directors consider that the terms of the Investment Agreement are fair and reasonable and the proposed Subscription is in the best interests of the Group and the Shareholders as a whole. Accordingly, the Directors recommend you to vote in favour of the ordinary resolution to be proposed at the SGM.

ADDITIONAL INFORMATION

Your attention is also drawn to the additional information set out in the appendices to this circular.

MISCELLANEOUS

This circular is in English and Chinese. In case of any inconsistency, the English version shall prevail.

WARNING

Shareholders should take note that the Closing is subject to fulfilment of the Conditions Precedent as set out in the Investment Agreement including the approval of the Shareholders at the SGM, and therefore may or may not proceed. The Shareholders and potential investors of the Company are reminded to exercise caution when dealing in the shares in the Company. If in doubt, the Shareholders and the potential investors of the Company are recommended to consult their professional adviser(s).

Yours faithfully
By order of the Board
Shandong Hi-Speed Holdings Group Limited
Wang Xiaodong
Chairman

1. FINANCIAL INFORMATION OF THE GROUP

Financial information of the Group for each of the three years ended 31 December 2022, 2021 and 2020 and the six months ended 30 June 2023 is disclosed in the following documents which have been published on the websites of the Stock Exchange (http://www.hkexnews.hk) and the Company's website (http://www.sdhg.com.hk) and can be accessed at the website addresses below:

- Interim report of the Company for the six months ended 30 June 2023 (pages 37 to 125)

  https://www1.hkexnews.hk/listedco/listconews/sehk/2023/0927/2023092701437.pdf

- Annual report of the Company for the year ended 31 December 2022 (pages 134 to 447)

  https://www1.hkexnews.hk/listedco/listconews/sehk/2023/0428/2023042800109.pdf

- Annual report of the Company for the year ended 31 December 2021 (pages 119 to 391)

  https://www1.hkexnews.hk/listedco/listconews/sehk/2022/0427/2022042701579.pdf

- Annual report of the Company for the year ended 31 December 2020 (pages 71 to 243)

  https://www1.hkexnews.hk/listedco/listconews/sehk/2021/0430/2021043001239.pdf

2. STATEMENT OF INDEBTEDNESS

As at the close of business of 31 October 2023, being the latest practicable date for the purpose of ascertaining the indebtedness of the Group prior to the printing of this circular, the Group had outstanding indebtedness as follows:

Borrowings

The Group had outstanding (i) guaranteed and secured bank borrowings of approximately HK$12,480 million; (ii) guaranteed and unsecured bank borrowings of approximately HK$10,184 million; (iii) unguaranteed and secured bank borrowings of approximately HK$400 million; (iv) unguaranteed and unsecured bank borrowings of approximately HK$8,648 million; (v) guaranteed and unsecured bonds of approximately HK$6,356 million; (vi) unguaranteed and secured bonds of approximately HK$399 million; (vii) guaranteed and secured other borrowings of approximately HK$6,933 million; (viii) guaranteed and secured lease liabilities of approximately HK$2,662 million; and (ix) unguaranteed and unsecured lease liabilities of approximately HK$970 million.

The secured bank and other borrowings, bonds, lease liabilities under finance lease arrangements and bill payables of the Group as at 31 October 2023 are secured by:

(i) guarantees given by Shandong Hi-Speed Group Co. Ltd.;

(ii) guarantees given by the Company and/or its subsidiaries;

(iii) pledges over certain of the Group's finance lease receivables;

(iv) pledges over certain of the Group's property, plant and equipment and operating concessions;

(v) pledges over certain of the Group's trade receivables;

(vi) pledges over certain of the Group's contract assets;

(vii) pledges over the Group's equity interests in certain subsidiaries; and/or

(viii) pledges over certain of the Group's bank balances.

Guarantees issued

As at 31 October 2023, the Group provided the total maximum guarantees in relation to the investments in joint ventures and an unlisted equity investment of approximately HK$1,309 million.

Contingent liabilities

As at 31 October 2023, the Group did not have any material contingent liabilities.

Save as aforesaid or as otherwise disclosed herein, and apart from intra-group liabilities, the Group did not have outstanding at the close of business on 31 October 2023 (a) any guaranteed, unguaranteed, secured or unsecured debt securities issued and outstanding, and authorised or otherwise created but unissued; (b) any guaranteed, unguaranteed, secured or unsecured term loans; (c) any borrowings or indebtedness in the nature of borrowing including bank overdrafts and liabilities under acceptances (other than normal trade bills) or acceptance credits or hire purchase commitments; (d) any debentures, mortgages or charges; or (e) any guarantee or other contingent liabilities.

The Directors confirm that, save as disclosed above, there are no material changes in the indebtedness and contingent liabilities of the Group since 31 October 2023.

3. WORKING CAPITAL STATEMENT OF THE GROUP

The Directors are of opinion that, after due and careful enquiry and taking into account the Investment Agreement and the transactions contemplated thereunder, the financial resources available to the Group including the internally generated funds and the available banking facilities, the Group will have sufficient working capital for at least the next 12 months commencing from the date of this circular. The Directors confirm that requirements under Rule 14.66(12) have been complied with.

4. MATERIAL ADVERSE CHANGE

As at the Latest Practicable Date, the Directors were not aware of any material adverse change in the financial or trading position of the Group since 31 December 2022, being the date to which the latest published audited consolidated financial statements of the Group were made up.

5. FINANCIAL AND TRADING PROSPECTS OF THE GROUP

Based on the mid-to-long-term strategic transformation plan, the Group will continue to further optimize the asset allocation structure, with focus on industrial investment and supplemented by standard and non-standard investment, achieving the goal of long-term asset appreciation while maintaining sufficient short-term liquidity. The business development strategies of each business segment are as follows:

(i) Industrial investment

The Group will continue to steadily promote and deepen its strategic transformation, give full play to the industrial advantages and resource advantages of the controlling shareholder, utilize its own advantages in the combination of industry and finance and domestic and overseas linkage, focusing on and devote efforts to the two strategic emerging industries of new energy and new infrastructure, select target companies with excellent business models and stable cash flow, build organic portfolios of strategic equity investment and holding equity investment, steadily develop the Group's industrial investment business, expand the scale of industrial investment, and play a key role in the development of the Group's investment business. As regards the new energy industry, based on the existing new energy assets, the Group will seize the golden opportunity period of new energy development, and enhance its investment and merger and acquisition capability in the vertical industry chain of wind and solar power stations as well as horizontal assets of the same industry. As regards the new infrastructure industry, the Group will focus on the strategic opportunities of China's digital transformation, explore new infrastructure quality assets, create a new business model of "electric power + computing power", so as to formulate future-oriented core competitiveness.

At the same time, the Group will continue to strive to consolidate the results of industrial acquisition in 2022, accelerate the improvement of "investment + investment management" momentum, strengthen the empowerment post-investment management according to the corporate development cycle and industry cycle for the invested targets such as Shandong Hi-Speed New Energy Group Limited and Shandong Hi Speed Renewable Energy Group Limited, and promote the overall improvement of the value of the invested enterprises.

(ii) Standard investment business

It is expected that more policies will be introduced to expand domestic demand and enhance the high-quality development of the economy. As regards the selection of industries, the Group's priority will be given to science and technology industries that are in line with national strategies and could contribute to the upgrading of the manufacturing industry and the improvement of informatisation and intelligence, as well as big consumption industries related to the expansion of domestic demand, and at the same time, industries and companies that have bottomed out in terms of their performance or have maintained a high degree of prosperity will also be considered, so as to lay out at a low level and select high-quality companies.

(iii) Non-standard investment business

The Group will continue to take the mitigation of existing risks as its top priority, do a good job in post-investment management of its existing investment projects, reduce the credit exposure in the portfolio through asset revitalisation means such as debt restructuring, assignment of credit and litigation settlements; at the same time, the Group will leverage on the respective regional advantages and professional capabilities of its teams in Hong Kong, Mainland China and Singapore, pay close attention to the financing needs of new energy, new consumption, high-tech and other industries, focus on the direction of industrial transformation, select high-quality leading enterprises to provide capital support, and continuously optimise its business model.

(iv) Licensed financial services

The Group will continue to prudently carry out Hong Kong and the PRC licensed financial service business, mainly focusing on securities brokerage, qualified foreign limited partner and financial leasing, which have synergistic effects with the Group's strategic transformation direction, to develop business and improve comprehensive service capabilities.

FINANCIAL INFORMATION OF THE TARGET GROUP FOR EACH OF THE THREE YEARS ENDED 31 DECEMBER 2022, 2021 AND 2020 AND THE SIX MONTHS ENDED 30 JUNE 2023

For the purpose of this section only, unless the context requires otherwise, references to the "Company" are to Target Company and references to the "VNET Group" are to the Target Group, and references to "we", "us" and "our" shall be construed accordingly.

The following is an extract of the audited consolidated financial statements of Target Group for the years ended 31 December 2022, 2021 and 2020 and the unaudited consolidated financial statements of Target Group for the six months ended 30 June 2023, most of which were prepared in accordance with the US GAAP, as extracted from the respective annual reports/second quarter results and consolidated financial statements of the Target Group for the years ended 31 December 2022, 2021 and 2020 and the six months ended 30 June 2023. These financial statements were issued in English and the Chinese translated version is provided for information purposes only. In case of discrepancies between the two versions, the English version shall prevail.

The annual reports/second quarter results and consolidated financial statements of the Target Group for the three years ended 31 December 2022, 2021 and 2020 and the six months ended 30 June 2023 are available at the website of the SEC (https://www.sec.gov/).

The Directors wish to emphasise that the extracts reproduced below are not prepared for incorporation into this circular and the Company has not participated in their preparation. As such, the Directors do not express any view as to their truth, accuracy or completeness, and the shareholders and investors should exercise caution and should not place undue reliance on such information.

A. AUDITED CONSOLIDATED FINANCIAL STATEMENTS OF THE TARGET COMPANY FOR THE YEAR ENDED 31 DECEMBER 2020

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of 21Vianet Group, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of 21Vianet Group, Inc. (the "**Company**") as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive loss, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2020 and the related notes (collectively referred to as the "**consolidated financial statements**"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated April 28, 2021 expressed an unqualified opinion thereon.

Adoption of New Accounting Standards

As discussed in Note 2 to the consolidated financial statements, the Company changed its method for accounting for lease in the year ended December 31, 2019.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation allowance for deferred tax assets

Description of the Matter	As described in Notes 2 and 24 to the consolidated financial statements, the Company recorded deferred tax assets of RMB851.7 million, net of valuation allowance of RMB170.1 million as of December 31, 2020. The carrying amount of deferred tax assets is reviewed on an entity-by-entity basis and is reduced by a valuation allowance to the extent that it is more-likely-than-not that the benefits of the deferred tax assets will not be realized in future years. The valuation allowance is determined based on the weight of positive and negative evidence including future reversals of existing taxable temporary differences, the adequacy of future taxable income exclusive of reversing temporary differences and verifiable tax planning. Auditing the valuation allowance for deferred tax assets was complex and required significant auditor judgment and effort because management's estimate of future taxable income is judgmental and may be affected by future market conditions and the performance of the Company.

How we addressed the matter in our audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls that address the risks of material misstatement relating to the realizability of deferred tax assets. For example, we tested controls over management's projections of future taxable income. We performed procedures that included, among others, evaluating the assumptions used by the Company in estimating future taxable income and testing the completeness and accuracy of the underlying data used in the projections. For example, we evaluated the assumptions used by the Company to project future taxable income by comparing the forecasted revenue growth rate to historical revenue growth rates and management's plan of expanding the Company's operating capacity as well as current industry trends. We also assessed the historical accuracy of management's estimates by comparing the historical estimated future taxable income to the actual results.

/s/ Ernst & Young Hua Ming LLP

We have served as the Company's auditor since 2010.

Shanghai, the People's Republic of China

April 28, 2021

21VIANET GROUP, INC.
CONSOLIDATED BALANCE SHEETS
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Notes	As of December 31, 2019	2020	
		RMB	RMB	US$
ASSETS				
Current assets:				
Cash and cash equivalents		1,808,483	2,710,349	415,379
Restricted cash		478,873	270,450	41,448
Accounts and notes receivable (net of allowance for doubtful debt of RMB67,828 and RMB68,921 (US$10,563) as of December 31, 2019 and 2020, respectively)	5	657,158	847,233	129,844
Short-term investments	6	363,856	285,872	43,812
Prepaid expenses and other current assets	7	1,618,149	1,866,184	286,005
Amounts due from related parties	25	301,665	75,519	11,574
Total current assets		5,228,184	6,055,607	928,062
Non-current assets:				
Property and equipment, net	8	5,443,565	8,106,425	1,242,364
Intangible assets, net	9	410,595	658,195	100,873
Land use rights, net	10	233,154	255,373	39,138
Operating lease right-of-use assets, net	15	1,221,616	1,325,526	203,146
Goodwill	11	989,530	994,993	152,489
Restricted cash		69,821	135,638	20,787
Deferred tax assets, net	24	209,366	185,481	28,426
Long-term investments, net	12	169,653	135,517	20,769
Amounts due from related parties	25	20,654	20,562	3,151
Other non-current assets		277,568	1,500,438	229,952
Total non-current assets		9,045,522	13,318,148	2,041,095
Total assets		14,273,706	19,373,755	2,969,157

21VIANET GROUP, INC.
CONSOLIDATED BALANCE SHEETS (CONTINUED)
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Notes	As of December 31, 2019	2020	
		RMB	RMB	US$
LIABILITIES AND SHAREHOLDERS' EQUITY				
Current liabilities:				
Short-term bank borrowings (including short-term bank borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB232,323 and RMB34,000 (US$5,211) as of December 31, 2019 and 2020, respectively)	13	234,500	34,000	5,211
Accounts and notes payable (including accounts and notes payable of the Consolidated VIEs without recourse to the primary beneficiaries of RMB211,710 and RMB182,669 (US$27,995) as of December 31, 2019 and 2020, respectively)		303,128	289,387	44,350
Accrued expenses and other payables (including accrued expenses and other payables of the Consolidated VIEs without recourse to the primary beneficiaries of RMB622,160 and RMB981,961 (US$150,492) as of December 31, 2019 and 2020, respectively)	14	978,935	1,631,563	250,048
Advances from customers (including advances from customers of the Consolidated VIEs without recourse to the primary beneficiaries of RMB1,068,692 and RMB1,041,594 (US$159,631) as of December 31, 2019 and 2020, respectively)		1,068,692	1,041,594	159,631
Deferred revenue (including deferred revenue of the Consolidated VIEs without recourse to the primary beneficiaries of RMB52,088 and RMB58,066 (US$8,899) as of December 31, 2019 and 2020, respectively)		57,625	63,245	9,693
Income taxes payable (including income taxes payable of the Consolidated VIEs without recourse to the primary beneficiaries of RMB8,175 and RMB12,743 (US$1,953) as of December 31, 2019 and 2020, respectively)		48,032	29,028	4,449
Amounts due to related parties (including amounts due to related parties of the Consolidated VIEs without recourse to the primary beneficiaries of RMB56,977 and RMB50,193 (US$7,692) as of December 31, 2019 and 2020, respectively)	25	166,935	51,007	7,817

21VIANET GROUP, INC.
CONSOLIDATED BALANCE SHEETS (CONTINUED)
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

		As of December 31,		
	Notes	**2019**	**2020**	
		RMB	*RMB*	*US$*
Current portion of long-term borrowings (including current portion of long-term borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB32,500 and RMB165,328 (US$25,338) as of December 31, 2019 and 2020, respectively)	*13*	32,500	180,328	27,636
Current portion of finance lease liabilities (including current portion of finance lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB220,363 and RMB362,760 (US$55,595) as of December 31, 2019 and 2020, respectively)	*15*	227,115	403,843	61,892
Deferred government grants (including deferred government grants of the Consolidated VIEs without recourse to the primary beneficiaries of RMB2,595 and RMB2,074 (US$318) as of December 31, 2019 and 2020, respectively)	*19*	2,595	2,074	318
Current portion of bonds payable	*16*	911,147	1,943,619	297,873
Current portion of operating lease liabilities (including current portion of operating lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB410,422 and RMB427,114 (US$65,458) as of December 31, 2019 and 2020, respectively)	*15*	437,817	452,272	69,314
Total current liabilities		4,469,021	6,121,960	938,232

21VIANET GROUP, INC.
CONSOLIDATED BALANCE SHEETS (CONTINUED)
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

		As of December 31,		
	Notes	**2019**	**2020**	
		RMB	*RMB*	*US$*
Non-current liabilities:				
Long-term borrowings (including long-term borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB79,500 and RMB570,135 (US$87,377) as of December 31, 2019 and 2020, respectively)	*13*	79,500	886,996	135,938
Bonds payable	*16*	2,060,708	–	–
Convertible promissory notes	*18*	–	3,014,057	461,924
Non-current portion of finance lease liabilities (including non-current portion of finance lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB549,669 and RMB299,399 (US$45,885) as of December 31, 2019 and 2020, respectively)	*15*	896,927	688,128	105,460
Unrecognized tax benefits (including unrecognized tax benefits of the Consolidated VIEs without recourse to the primary beneficiaries of RMB1,991 and RMB68,317 (US$10,470) as of December 31, 2019 and 2020, respectively)	*24*	2,443	68,696	10,528
Deferred tax liabilities (including deferred tax liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB82,725 and RMB155,281 (US$23,798) as of December 31, 2019 and 2020, respectively)	*24*	202,572	299,093	45,838
Deferred government grants (including deferred government grants of the Consolidated VIEs without recourse to the primary beneficiaries of RMB5,906 and RMB4,100 (US$628) as of December 31, 2019 and 2020, respectively)	*19*	5,906	4,100	628
Amounts due to related parties (including amounts due to related parties of the Consolidated VIEs without resource to the primary beneficiaries of RMB745,899 and RMB747,746 (US$114,597) as of December 31, 2019 and 2020, respectively)	*25*	745,899	747,746	114,597

21VIANET GROUP, INC.
CONSOLIDATED BALANCE SHEETS (CONTINUED)
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

		As of December 31,		
	Notes	**2019**	**2020**	
		RMB	*RMB*	*US$*
Non-current portion of operating lease liabilities (including non-current portion of operating lease liabilities of the Consolidated VIEs without resource to the primary beneficiaries of RMB529,546 and RMB497,268 (US$76,210) as of December 31, 2019 and 2020, respectively)	*15*	579,102	645,499	98,927
Total non-current liabilities		4,573,057	6,354,315	973,840
Total liabilities		9,042,078	12,476,275	1,912,072
Commitments and contingencies	*30*			

21VIANET GROUP, INC.

CONSOLIDATED BALANCE SHEETS (CONTINUED)

(Amounts in thousands of RMB and US$, except for number of shares and per share data)

	Notes	As of December 31, 2019 *RMB*	2020 *RMB*	*US$*
Shareholders' equity:				
Class A Ordinary shares (par value of US$0.00001 per share; 1,200,000,000 and 1,199,790,000 shares authorized; 505,253,850 and 672,024,600 issued and outstanding as of December 31, 2019 and 2020, respectively)	*28*	34	44	7
Class B Ordinary Shares (par value of US$0.00001 per share; 300,000,000 and 300,000,000 shares authorized; 174,649,638 and 145,875,113 issued and outstanding as of December 31, 2019 and 2020, respectively)	*28*	12	12	2
Class C Ordinary Shares (par value of US$0.00001 per share; 60,000 and 60,000 shares authorized; 60,000 and 60,000 shares issued and outstanding as of December 31, 2019 and 2020, respectively)	*28*	–	–	–
Additional paid-in capital		9,202,567	13,083,119	2,005,076
Series A perpetual convertible preferred shares (par value of US$0.00001 per share; nil and 150,000 shares issued and outstanding as of December 31, 2019 and 2020, respectively)	*17*	–	1,047,468	160,531
Accumulated other comprehensive income (loss)	*21*	77,904	(55,535)	(8,511)
Statutory reserves		60,469	74,462	11,412
Accumulated deficit		(4,038,390)	(7,235,113)	(1,108,830)
Treasury stock	*20*	(349,523)	(349,523)	(53,567)
Total 21Vianet Group, Inc. shareholders' equity		4,953,073	6,564,934	1,006,120
Non-controlling interest		278,555	332,546	50,965
Total shareholders' equity		5,231,628	6,897,480	1,057,085
Total liabilities and shareholders' equity		14,273,706	19,373,755	2,969,157

The accompanying notes are an integral part of these consolidated financial statements

21VIANET GROUP, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

(Amounts in thousands of RMB and US$, except for number of shares and per shares data)

	Notes	For the years ended December 31, 2018	2019	2020	
		RMB	RMB	RMB	US$
Net revenues					
Hosting and related services		3,401,037	3,788,967	4,829,019	740,080
Cost of revenues					
Hosting and related services		(2,456,166)	(2,849,518)	(3,753,008)	(575,174)
Gross profit		944,871	939,449	1,076,011	164,906
Operating income (expenses)					
Operating income		5,027	6,862	7,619	1,168
Sales and marketing expenses		(172,176)	(206,309)	(235,012)	(36,017)
Research and development expenses		(92,109)	(88,792)	(112,891)	(17,301)
General and administrative expenses		(462,637)	(415,277)	(535,111)	(82,009)
Reversal (allowance) for doubtful debt		598	(1,557)	(2,393)	(367)
Impairment of receivables from equity investees		–	(52,142)	–	–
Changes in the fair value of contingent purchase consideration payables		13,905	–	–	–
Impairment of long-lived assets		–	–	(81,619)	(12,509)
Total operating expenses		(707,392)	(757,215)	(959,407)	(147,035)
Operating profit		237,479	182,234	116,604	17,871
Interest income		45,186	54,607	31,711	4,860
Interest expense		(236,066)	(345,955)	(380,609)	(58,331)
Gain on deconsolidation of subsidiaries	4	4,843	–	–	–
Loss on debt extinguishment		–	(18,895)	–	–
Other income		58,033	36,380	16,539	2,535
Other expenses		(4,103)	(5,632)	(36,912)	(5,657)
Changes in the fair value of convertible promissory notes		–	–	(2,544,220)	(389,919)
Impairment of long-term investment		–	–	(13,030)	(1,997)
Foreign exchange (loss) gain, net		(81,055)	(27,995)	228,125	34,962

21VIANET GROUP, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS (CONTINUED)

(Amounts in thousands of RMB and US$, except for number of shares and per shares data)

		For the years ended December 31,			
	Notes	**2018**	**2019**	**2020**	
		RMB	*RMB*	*RMB*	*US$*
Income (loss) before income taxes and (loss) gain from equity method investments		24,317	(125,256)	(2,581,792)	(395,676)
Income tax expenses	*24*	(24,411)	(5,437)	(109,336)	(16,756)
(Loss) gain from equity method investments		(186,642)	(50,553)	10,869	1,666
Net loss		(186,736)	(181,246)	(2,680,259)	(410,766)
Net income attributable to non-controlling interest		(18,329)	(1,046)	(29,088)	(4,458)
Net loss attributable to the 21Vianet Group, Inc.		(205,065)	(182,292)	(2,709,347)	(415,224)
Loss per share:					
Basic	*27*	RMB (0.30)	RMB (0.27)	RMB (4.47)	US$ (0.69)
Diluted	*27*	RMB (0.30)	RMB (0.27)	RMB (4.47)	US$ (0.69)
Shares used in loss per share computation:					
Basic	*27*	674,732,130	668,833,756	716,888,919	716,888,919
Diluted	*27*	674,732,130	668,833,756	716,888,919	716,888,919

The accompanying notes are an integral part of these consolidated financial statements

21VIANET GROUP, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(Amounts in thousands of RMB and US$)

	For the years ended December 31,			
	2018	**2019**	**2020**	
	RMB	*RMB*	*RMB*	*US$*
Net loss	(186,736)	(181,246)	(2,680,259)	(410,766)
Other comprehensive income (loss), net of tax of nil				
Foreign currency translation adjustments, net of tax of nil	88,652	(8,075)	(133,439)	(20,450)
Other comprehensive income (loss), net of tax of nil	88,652	(8,075)	(133,439)	(20,450)
Comprehensive loss	(98,084)	(189,321)	(2,813,698)	(431,216)
Comprehensive income attributable to non-controlling interest	(18,329)	(1,046)	(29,088)	(4,458)
Comprehensive loss attributable to 21Vianet Group, Inc.	(116,413)	(190,367)	(2,842,786)	(435,674)

The accompanying notes are an integral part of these consolidated financial statements

21VIANET GROUP, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands of RMB and US$)

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
CASH FLOWS FROM OPERATING ACTIVITIES				
Net loss	(186,736)	(181,246)	(2,680,259)	(410,766)
Adjustments to reconcile net loss to net cash generated from operating activities:				
Foreign exchange loss (gain), net	81,055	27,995	(228,125)	(34,962)
Changes in the fair value of contingent purchase consideration payables	(13,905)	–	–	–
Gain from settlement of contingent purchase consideration	(500)	–	–	–
Depreciation and amortization	634,606	772,205	988,983	151,568
(Gain) loss on disposal of property and equipment and intangible assets	(7,981)	271	6,032	922
(Reversal) allowance for doubtful debt	(598)	1,557	2,393	367
Share-based compensation expense	59,538	43,916	136,804	20,966
Impairment of receivables from equity investees	–	52,142	–	–
Deferred income tax benefits	(19,776)	(64,887)	(22,508)	(3,450)
Loss (gain) from equity method investments	186,642	50,553	(10,869)	(1,666)
Distribution received from an equity method investment	–	20,200	17,723	2,716
Gain from disposal of equity investments without readily determinable fair value	(20,496)	(5,536)	(257)	(39)
Gain from disposal of equity method investment	(16,509)	(17,853)	–	–
Dividend income of equity investments without readily determinable fair values	(406)	–	–	–
Gain from disposal of subsidiaries	(4,843)	–	–	–
Impairment of long-lived assets	–	–	81,619	12,509
Impairment of a long-term investment	–	–	13,030	1,997
Loss on debt extinguishment	–	18,895	–	–
Lease expense	–	205,787	375,112	57,488
Changes in the fair value of convertible promissory notes	–	–	2,544,220	389,919
Changes in operating assets and liabilities, net of effects of acquisitions and disposals:				
Accounts and notes receivable	(68,809)	(156,134)	(171,608)	(26,300)
Prepaid expenses and other current assets	(262,445)	(328,224)	(117,110)	(17,946)
Amounts due from related parties	(38,047)	11,352	37,468	5,742
Accounts and notes payables	41,380	9,185	(13,741)	(2,106)
Unrecognized tax benefits	(9,834)	(4,234)	66,253	10,154
Accrued expenses and other payables	77,744	77,275	91,123	13,966
Deferred revenue	2,001	(129)	5,620	861
Advances from customers	266,793	398,655	(27,098)	(4,153)
Income taxes payable	(198)	34,917	(19,004)	(2,912)
Deferred government grants	(6,643)	500	–	–
Amounts due to related parties	12,933	6,044	(5,605)	(859)
Operating lease liabilities	–	(170,284)	(355,953)	(54,552)
Net cash generated from operating activities	704,966	802,922	714,243	109,464

21VIANET GROUP, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)
(Amounts in thousands of RMB and US$)

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
CASH FLOWS FROM INVESTING ACTIVITIES				
Purchases of property and equipment	(435,220)	(1,248,834)	(2,473,332)	(379,055)
Purchases of intangible assets	(17,874)	(26,515)	(30,091)	(4,612)
Purchases of land use rights	–	(24,460)	–	–
Proceeds from disposal of property and equipment	15,429	2,484	1,777	272
Proceeds from disposal of land use right	–	–	9,397	1,440
Proceed from disposal of subsidiaries, net	3,389	–	5,802	889
Payments for short-term investments	(98,905)	(436,737)	(328,182)	(50,296)
Payment of loan to a third party	(20,000)	–	(12,562)	(1,925)
Payment of loans to related parties	–	(66,704)	(62,531)	(9,583)
Receipt of loans to third parties	20,413	–	30,000	4,598
Proceeds received from maturity of short-term investments	417,643	312,198	397,575	60,931
Proceeds from disposal of long-term investments	75,653	18,955	1,923	295
Proceeds from dividend income of equity investments without readily determinable fair values	406	–	–	–
Payments for long-term investments	(252,780)	(9,330)	–	–
Prepayments and deposits for acquiring data center	(13,000)	(82,536)	(1,302,601)	(199,633)
Collection of deposit for acquiring data center	–	30,000	106,436	16,312
Payments for acquisitions, net of cash acquired	–	(148,067)	(369,924)	(56,693)
Cash receipt from related parties due to restructuring	–	67,563	140,738	21,569
Payment for other investment activities	–	–	(3,599)	(552)
Net cash used in investing activities	(304,846)	(1,611,983)	(3,889,174)	(596,043)

21VIANET GROUP, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

(Amounts in thousands of RMB and US$)

	For the years ended December 31,			
	2018	2019	2020	
	RMB	RMB	RMB	US$
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds from loan from a related party	44,038	–	–	–
Repayment of loan from a related party	–	(47,893)	–	–
Proceeds from exercise of stock options	435	429	3,029	464
Proceeds from issuance of ordinary shares	–	572	2,680,421	410,792
Proceeds from Series A perpetual convertible preferred shares	–	–	1,058,325	162,195
Payment of issuance cost of Series A perpetual convertible preferred shares	–	–	(9,374)	(1,437)
Proceeds from issuance of convertible promissory notes	–	–	1,409,385	215,998
Payment of issuance cost of convertible promissory notes	–	–	(18,841)	(2,888)
Payment of conversion cost of convertible promissory notes	–	–	(2,763)	(423)
Proceeds from issuance of 2021 Notes (Note 16)	–	2,012,084	–	–
Payment of issuance cost of 2021 Notes (Note 16)	–	(35,610)	–	–
Repurchase and repayment of 2020 Notes (Note 16)	–	(1,148,092)	(915,543)	(140,313)
Proceeds from long-term bank borrowings	–	–	594,619	91,129
Proceeds from short-term bank borrowings	69,999	234,500	34,000	5,211
Proceeds from other long-term borrowings	–	110,000	374,448	57,387
Repayment of long-term bank borrowings	(70,643)	(85,110)	(33,000)	(5,057)
Repayment of short-term bank borrowings	(69,999)	(50,000)	(234,500)	(35,939)
Repayment and deposits for other long-term borrowings	(48,401)	(19,399)	(125,825)	(19,284)
Payments for purchase of property and equipment through finance leases	(279,886)	(333,614)	(376,232)	(57,660)
Repayment of loan from third parties	–	(67,659)	(169,325)	(25,950)
Contribution from non-controlling interest in subsidiaries	196,281	8,532	24,903	3,817
Prepayment for future share repurchase plan	–	(9,778)	–	–
Refund of prepayment for share repurchase plan	42,710	–	–	–
Payments for share repurchase	–	(11,840)	(130,472)	(19,996)
Proceeds from discounted notes	95,565	–	–	–
Repayment of notes payable	–	(95,565)	–	–
Net cash (used in) generated from financing activities	(19,901)	461,557	4,163,255	638,046
Effect of foreign exchange rate changes on cash and cash equivalents and restricted cash	85,333	43,660	(229,064)	(35,106)
Net increase (decrease) in cash and cash equivalents and restricted cash	465,552	(303,844)	759,260	116,361
Cash and cash equivalents and restricted cash at beginning of year	2,195,469	2,661,021	2,357,177	361,253
Cash and cash equivalents and restricted cash at end of year	2,661,021	2,357,177	3,116,437	477,614

21VIANET GROUP, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

(Amounts in thousands of RMB and US$)

	For the years ended December 31,			
	2018	**2019**	**2020**	
	RMB	*RMB*	*RMB*	*US$*
Reconciliation of cash and cash equivalents and restricted cash to the consolidated balance sheets				
Cash and cash equivalents	2,358,556	1,808,483	2,710,349	415,379
Restricted cash-current	265,214	478,873	270,450	41,448
Restricted cash-non-current	37,251	69,821	135,638	20,787
Total cash and cash equivalents and restricted cash	2,661,021	2,357,177	3,116,437	477,614
Supplemental disclosures of cash flow information:				
Income taxes paid	(57,407)	(41,684)	(102,330)	(15,683)
Interest paid	(160,984)	(215,889)	(284,270)	(43,566)
Interest received	50,793	59,054	37,817	5,796
Supplemental disclosures of non-cash activities:				
Right-of-use assets obtained in exchange for new operating lease liabilities	–	618,126	479,022	73,413
Purchase of property and equipment through finance leases	884,871	357,573	217,190	33,286
Purchase of property and equipment included in accrued expenses and other payables	21,918	344,248	591,187	90,603
Purchase of intangible assets included in accrued expenses and other payables	870	(1,642)	2,862	439
Contingent consideration related to the acquisitions included in amounts due to related parties and accrued expenses and other payables	36,734	–	–	–

The accompanying notes are an integral part of these consolidated financial statements

21VIANET GROUP, INC.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(Amounts in thousands of RMB and US$, except for number of shares)

	Notes	Number of ordinary shares	Treasury Stock	Ordinary shares	Additional paid-in capital	Accumulated other comprehensive (loss) income	Statutory reserves	Accumulated deficit	Total 21Vianet Group, Inc. shareholders' equity	Non-controlling interest	Total shareholders' equity
Balance as of January 1, 2018		671,285,766	(337,683)	46	8,980,407	(2,673)	38,736	(3,629,300)	5,049,533	151,471	5,201,004
Consolidated net loss		–	–	–	–	–	–	(205,065)	(205,065)	18,329	(186,736)
Foreign exchange difference		–	–	–	477	88,652	–	–	89,129	–	89,129
Issuance of new shares for share option exercise and restricted share units vested	*26*	3,070,500	–	–	–	–	–	–	–	–	–
Share-based compensation		–	–	–	67,009	–	–	–	67,009	–	67,009
Disposal of 49% interest in a subsidiary		–	–	–	93,166	–	–	–	93,166	103,115	196,281
Appropriation of statutory reserves	*5*	–	–	–	–	–	3,667	(3,667)	–	–	–
Disposal of subsidiaries		–	–	–	–	–	–	–	–	(3,938)	(3,938)
Share options exercised	*21*	219,972	–	–	435	–	–	–	435	–	435
Restricted share units vested		5,115,558	–	–	–	–	–	–	–	–	–
Settlement of share options and restricted share units with shares held by depository bank		(5,335,530)	–	–	–	–	–	–	–	–	–
Balance as of December 31, 2018		674,356,266	(337,683)	46	9,141,494	85,979	42,403	(3,838,032)	5,094,207	268,977	5,363,184
Balance as of January 1, 2019		674,356,266	(337,683)	46	9,141,494	85,979	42,403	(3,838,032)	5,094,207	268,977	5,363,184
Consolidated net loss		–	–	–	–	–	–	(182,292)	(182,292)	1,046	(181,246)
Contribution by non-controlling interest		–	–	–	–	–	–	–	–	8,532	8,532
Foreign exchange difference		–	–	–	24	(8,075)	–	–	(8,051)	–	(8,051)
Issuance of new shares	*28*	60,000	–	–	572	–	–	–	572	–	572
Issuance of new shares for share option exercise and restricted share units vested	*28*	304,200	–	–	–	–	–	–	–	–	–
Share-based compensation		–	–	–	60,048	–	–	–	60,048	–	60,048
Appropriation of statutory reserves	*5*	–	–	–	–	–	18,066	(18,066)	–	–	–
Share issued to depository bank		6,700,002	–	–	–	–	–	–	–	–	–
Share repurchase		(1,456,980)	(11,840)	–	–	–	–	–	(11,840)	–	(11,840)
Share options exercised	*23*	33,869	–	–	429	–	–	–	429	–	429
Restricted share units vested		5,136,306	–	–	–	–	–	–	–	–	–
Settlement of share options and restricted share units with shares held by depository bank		(5,170,175)	–	–	–	–	–	–	–	–	–
Balance as of December 31, 2019		679,963,488	(349,523)	46	9,202,567	77,904	60,469	(4,038,390)	4,953,073	278,555	5,231,628

21VIANET GROUP, INC.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY (CONTINUED)

(Amounts in thousands of RMB and US$, except for number of shares)

	Notes	Number of ordinary shares	Treasury Stock	Ordinary shares	Additional paid-in capital	Series A perpetual convertible preferred shareholders	Accumulated other comprehensive (loss) income	Statutory reserves	Accumulated deficit	Total 21Vianet Group, Inc. shareholders' equity	Non-controlling interest	Total shareholders' equity
Balance as of January 1, 2020		679,963,488	(349,523)	46	9,202,567	–	77,904	60,469	(4,038,390)	4,953,073	278,555	5,231,628
Consolidated net loss		–	–	–	–	–	–	–	(2,709,347)	(2,709,347)	29,088	(2,680,259)
Contribution by non-controlling interest		–	–	–	–	–	–	–	–	–	24,903	24,903
Cumulative adjustment for changes in accounting policy		–	–	–	–	–	–	–	(2,740)	(2,740)	–	(2,740)
Issuance of new shares		118,754,028	–	8	2,680,283	–	–	–	–	2,680,291	–	2,680,291
Issuance of perpetual convertible preferred shares		–	–	–	–	1,047,468	–	–	–	1,047,468	–	1,047,468
Deemed distribution to perpetual convertible preferred shares		–	–	–	470,643	–	–	–	(470,643)	–	–	–
Foreign exchange difference		–	–	–	–	–	(133,439)	–	–	(133,439)	–	(133,439)
Cancellation of shares issued in prior years		(104,304)	–	–	–	–	–	–	–	–	–	–
Conversion of convertible promissory notes		23,710,140	–	2	717,606	–	–	–	–	717,608	–	717,608
Shares repurchase		(4,363,639)	–	–	(130,650)	–	–	–	–	(130,650)	–	(130,650)
Share-based compensation	*26*	–	–	–	139,641	–	–	–	–	139,641	–	139,641
Appropriation of statutory reserves		–	–	–	–	–	–	13,993	(13,993)	–	–	–
Share options exercised	*21*	459,168	–	–	3,029	–	–	–	–	3,029	–	3,029
Restricted share units vested		2,603,430	–	–	–	–	–	–	–	–	–	–
Settlement of share options and restricted share units with shares held by depository bank		(3,062,598)	–	–	–	–	–	–	–	–	–	–
Balance as of December 31, 2020		817,959,713	(349,523)	56	13,083,119	1,047,468	(55,535)	74,462	(7,235,113)	6,564,934	332,546	6,897,480
Balance as of December 31, 2020 US$			(53,567)	9	2,005,076	160,531	(8,511)	11,412	(1,108,830)	1,006,120	50,965	1,057,085

The accompanying notes are an integral part of these consolidated financial statements

21VIANET GROUP, INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of RMB and US$, unless otherwise stated)

1. ORGANIZATION

21Vianet Group, Inc. was incorporated under the laws of the Cayman Islands on October 16, 2009 and its principal activity is investment holding. The Company through its consolidated subsidiaries and variable interest entities (the "**VIEs**") are principally engaged in the provision of hosting and related services.

(a) As of December 31, 2020, the significant subsidiaries of the Company and consolidated variable interest entities are as follows:

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company Direct	Principal activities
Subsidiaries:				
21ViaNet Group Limited ("**21Vianet HK**")	May 25, 2007	Hong Kong	100%	Investment holding
21Vianet Data Center Co., Ltd. ("**21Vianet China**") [(1)]	June 12, 2000	PRC	100%	Provision of technical and consultation services and rental of long-lived assets
21Vianet (Foshan) Technology Co.,Ltd. ("**FS Technology**") [(1)]	December 20, 2011	PRC	100%	Trading of network equipment, provision of technical and internet data center services
21Vianet Anhui Suzhou Technology Co.,Ltd. ("**SZ Technology**") [(1)]	November 16, 2011	PRC	100%	Trading of network equipment
21Vianet Hangzhou Information Technology Co., Ltd. ("**HZ Technology**") [(1)]	March 4, 2013	PRC	100%	Provision of internet data center services
iJoy Holding Limited ("**iJoy BVI**")	May 6, 2011	British Virgin Islands	100%	Investment holding
21Vianet Mobile Limited ("**21V Mobile**")	April 30, 2013	Hong Kong	100%	Investment holding and provision of telecommunication services
WiFire Group Inc. ("**WiFire Group**")	March 7, 2014	British Virgin Islands	100%	Investment holding
Joytone Infotech Co., Ltd. ("**SZ Zhuoaiyi**") [(1)]	April 30, 2013	PRC	100%	Provision of technical and consultation services
21Vianet Ventures Limited ("**Ventures**")	March 6, 2014	Hong Kong	100%	Investment holding
Abitcool (China) Broadband Inc. ("**aBitCool DG**") [(1)]	June 13, 2014	PRC	100%	Dormant company
Diyixian.com Limited ("**DYX**")	August 10, 2014	Hong Kong	100%	Provision of virtual private network services
21Vianet Zhuhai Financial Leasing Co., Ltd. ("**Zhuhai Financial Leasing**") [(1)]	April 9, 2015	PRC	100%	Provision of finance leasing business services
21Vianet DRP Investment Holdings Limited ("**DRP investment**")	January 10, 2017	Hong Kong	100%	Investment holding
Shihua DC Investment Holdings Limited ("**Shihua Investment**")	March 14, 2017	Cayman Islands	51%	Investment holding
21Vianet (Xi'an) Technology Co., Ltd. ("**Xi'an Tech**") [(1)]	July 5, 2012	PRC	51%	Provision of technical and internet data center services
Foshan Zhuoyi Intelligence Data Co., Ltd. ("**FS Zhuoyi**") [(1)]	July 7, 2017	PRC	51%	Provision of internet data center services
Beijing Hongyuan Network Technology Co., Ltd. ("**BJ Hongyuan**") [(1)]	December 8, 2014	PRC	51%	Provision of internet data center services

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company Direct	Principal activities
Dermot Holdings Limited ("**Dermot BVI**") [(3)]	August 8, 2014	British Virgin Islands	100%	Investment holding
Shihua DC Investment Holdings 2 Limited ("**Shihua Holdings 2**") [(4)]	August 20, 2019	Cayman Islands	100%	Investment holding
Shanghai Waigaoqiao Free Trade Zone Hongming Logistics Co., Ltd. ("**Hongming Logistics**") [(1)/(4)]	August 20, 2019	PRC	100%	Provision of internet data center services
Shanghai Edge Connect Technology Co., Ltd. ("**SH Edge Connect**") [(1)]	November 3, 2020	PRC	100%	Provision of technical and internet data center services
Beijing Jianghe Cloud Technology Co.,Ltd. ("**BJ JHC**") [(1)/(8)]	November 17, 2020	PRC	100%	Provision of internet data center services
Beijing Shuntou Green Energy Data Technology Co.,Ltd. ("**BJ ST**") [(1)/(8)]	November 17, 2020	PRC	100%	Provision of internet data center services
Variable Interest Entities (the "VIEs"):				
Beijing Yiyun Network Technology Co., Ltd. ("**21Vianet Technology**") [(1)/(2)]	October 22, 2002	PRC	–	Provision of internet data center services
Beijing iJoy Information Technology Co., Ltd. ("**BJ iJoy**") [(1)/(2)]	April 30, 2013	PRC	–	Provision of internet data center, content delivery network services
WiFire Network Technology (Beijing) Co., Ltd. ("**WiFire Network**") [(1)/(2)]	April 1, 2014	PRC	–	Provision of telecommunication services
Shanghai Zhiyan Yunwei Technology Co.,Ltd. ("**SH Zhiyan**") [(1)/(2)]	December 12, 2020	PRC	–	Provision of telecommunication services
Held directly by 21Vianet Technology:				
Beijing 21Vianet Broad Band Data Center Co., Ltd. ("**21Vianet Beijing**") [(1)/(2)]	March 15, 2006	PRC	–	Provision of internet data center services
Held directly by 21Vianet Beijing:				
21Vianet (Xi'an) Information Outsourcing Industry Park Services Co., Ltd. ("**Xi'an Sub**") [(1)/(2)]	June 23, 2008	PRC	–	Provision of internet data center services
Langfang Xunchi Computer Data Processing Co., Ltd. ("**LF Xunchi**") [(1)/(2)]	December 19, 2011	PRC	–	Dormant company
Beijing Yilong Xinda Technology Co., Ltd. ("**Yilong Xinda**") [(1)/(2)]	August 6, 2010	PRC	–	Provision of internet data center services
Beijing Yichengtaihe Investment Co., Ltd. ("**BJ Yichengtaihe**") [(1)/(2)]	September 30, 2014	PRC	–	Provision of internet data center services
Guangzhou Lianyun Big Data Co. Ltd. ("**GZ Lianyun**") [(1)/(2)]	April 14, 2016	PRC	–	Provision of internet data center services
Beijing Xianghu Yunlian Technology Co., Ltd. ("**Xianghu Yunlian**") [(1)/(2)]	November 7, 2018	PRC	–	Provision of internet data center services
Beijing Shuhai Hulian Technology Co., Ltd. ("**BJ Shuhai**") [(1)/(2)]	January 2, 2019	PRC	–	Provision of internet data center services
Nantong Chenghong Cloud Computing Co., Ltd. ("**NT Chenghong**") [(1)/(2)]	December 24, 2019	PRC	–	Provision of internet data center services
Shanghai Shuzhong Investment Management Co., Ltd. ("**SH Shuzhong**") [(1)/(2)/(5)]	June 30, 2020	PRC	–	Provision of internet data center services
Sanhe Shulifang Information Technology Co., Ltd. ("**Shulifang**") [(1)/(2)/(6)]	July 21, 2020	PRC	–	Provision of internet data center services
Langfang Huahai Internet Technology Co., Ltd. ("**LF Huahai**") [(1)/(2)/(7)]	September 11, 2020	PRC	–	Provision of internet data center services

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company Direct	Principal activities
Held directly by SH Zhiyan:				
Shanghai Blue Cloud Technology Co., Ltd. ("**SH Blue Cloud**") (1)/(2)	March 21, 2013	PRC	–	Provision of Office 365 and Windows Azure platform services
Held directly by DYX and LF Xunchi:				
Shenzhen Diyixian Telecommunication Co., Ltd. ("**SZ DYX**") (1)	August 10, 2014	PRC	100%	Provision of virtual private network services

(1) Collectively, the "PRC Subsidiaries".

(2) Collectively, the "Consolidated VIEs".

(3) On August 10, 2014, the Company and its subsidiary, LF Xunchi, acquired 100% equity interest of Dermot BVI and its subsidiaries (collectively referred to as "**Dermot Entities**").

(4) On August 20, 2019, the Company through its subsidiary, DRP Investment, became the sole shareholder in Shihua Holding 2 and its subsidiaries (Note 4).

(5) On June 30, 2020, the Company through its subsidiary, Shanghai Shilian Technology Co., Ltd ("**SH Shilian**"), acquired 100% equity interest of SH Shuzhong (Note 4).

(6) On July 21, 2020, the Company through its subsidiary, SH Shilian, acquired 100% equity interest of Shulifang (Note 4).

(7) On September 11, 2020, the Company through its subsidiaries, SH Shilian and 21Vianet Venus International Investment Limited ("**21Vianet Venus**"), acquired 100% equity interest of LF Huahai (Note 4).

(8) On November 17, 2020, the Company through its subsidiary, 21Vianet Saturn International Investment Limited ("**21Vianet Saturn**") and Beijing Zhongshun Yongfeng Investment Consulting Co.,Ltd. ("**YF WFOE**"), acquired 100% equity interest of BJ JHC and BJ ST (Note 4).

(b) PRC laws and regulations prohibit foreign ownership of internet and telecommunications-related businesses. To comply with these foreign ownership restrictions, the Company conducts its businesses in the PRC through its VIEs using contractual agreements (the "**VIE Agreements**"). The Company controls four VIEs, namely 21Vianet Technology, BJ iJoy, WiFire Network and SH Zhiyan as of December 31, 2020. The key terms of the VIE Agreements in relation to BJ iJoy, WiFire Network and SH Zhiyan are substantially similar to 21Vianet Technology, except for the terms separately disclosed as below.

The equity interests of 21Vianet Technology are legally held by certain PRC individuals, including Chen Sheng, the Executive Chairman of Board of Directors of the Company and Zhang Jun (collectively the "**Nominee Shareholders**". The following is a summary of the key terms of the VIE Agreements of 21Vianet Technology:

Exclusive option agreement

Pursuant to the exclusive option agreement entered into amongst 21Vianet China and the Nominee Shareholders of 21Vianet Technology, the Nominee Shareholders granted the Company or its designated party, an exclusive irrevocable option to purchase all or part of the equity interests held by the Nominee Shareholders in 21Vianet Technology, when and to the extent permitted under the PRC laws, at an amount equal to RMB1. 21Vianet Technology cannot declare any profit distributions or grant loans in any form without the prior written consent of 21Vianet China. The Nominee Shareholders must remit in full any funds received from 21Vianet Technology to 21Vianet China, in the event any distributions are made by 21Vianet Technology. The term of this agreement is 10 years, expiring on December 18, 2016, which is renewable at the sole discretion of 21Vianet China. On December 19, 2016, this agreement was renewed for another 10 years, expiring on December 18, 2026.

SH Zhiyan has substantially similar exclusive option agreement except that the term of SH Zhiyan will terminate when SH Edge Connect, the primary beneficiary, purchases all of SH Zhiyan's equity interest held by the Nominee Shareholder, Shanghai Rongyan Yunqi Technology Co.,Ltd. ("**SH Rongyan**").

Exclusive technical consulting and service agreement

Pursuant to the exclusive technical consulting and service agreement entered into between 21Vianet China and 21Vianet Technology, 21Vianet China is to provide exclusive management consulting services and internet technical services in return for fees based on of a predetermined hourly rate of RMB1, which is adjustable at the sole discretion of 21Vianet China. The term of this agreement is 10 years, expiring on December 18, 2016, which is renewable at the sole discretion of 21Vianet China. On December 19, 2016, this agreement was renewed for another 10 years, expiring on December 18, 2026.

SH Zhiyan has substantially similar exclusive technical consulting and service agreement except that the term for SH Zhiyan would be in effect for an unlimited term unless terminated in writing by SH Edge Connect, the primary beneficiary of VIE SH Zhiyan.

Loan agreement

In January 2011, 21Vianet China and the Nominee Shareholders entered into a loan agreement. Pursuant to the agreement, 21Vianet China has provided interest-free loan facilities of RMB7,000 and RMB3,000, respectively, to the Nominee Shareholders of 21Vianet Technology for the purpose of providing capital to 21Vianet Technology to develop its data center and telecommunications value-added business and related businesses. There is no fixed term for the loan.

The Nominee Shareholders of SH Zhiyan did not enter into any loan agreement to fund the capital injected in SH Zhiyan.

Power of attorney agreement

The Nominee Shareholders entered into the power of attorney agreement whereby they granted an irrevocable proxy of the voting rights underlying their respective equity interests in 21Vianet Technology to 21Vianet China, which includes, but are not limited to, all the shareholders' rights and voting rights empowered to the Nominee Shareholders by the company law and 21Vianet Technology's Articles of Association. The power of attorney remains valid and irrevocable from the date of execution, so long as each Nominee Shareholder remains as a shareholder of 21Vianet Technology.

The power of attorney agreement in relation to 21Vianet Technology was reassigned to 21Vianet Group, Inc. in September 2010.

Share pledge agreement

Pursuant to the share pledge agreement entered into amongst 21Vianet China, 21Vianet Technology and the Nominee Shareholders, the Nominee Shareholders have contemporaneously pledged all their equity interests in 21Vianet Technology to guarantee the repayment of the loan under the Loan Agreement between 21Vianet China and the Nominee Shareholders. On August 10, 2015, a Notification of Cancellation of share pledge registration was issued by Beijing Administration for Industry and Commerce, Pinggu Branch to cancel the registration of the share pledge by one of the Nominee Shareholders of 21Vianet Technology, Zhang Jun. Such cancellation does not affect the effectiveness of the share pledge agreement and does not lessen the control imposed on the contractual parties of the Company.

If 21Vianet Technology breaches its respective contractual obligations under the Share pledge agreement and the loan agreement, 21Vianet China, as pledgee, will be entitled to certain rights, including the right to sell the pledged equity interests. The Nominee Shareholders agreed not to transfer, sell, pledge, dispose of or otherwise create any new encumbrance on their equity interests in 21Vianet Technology without the prior written consent of 21Vianet China.

SH Zhiyan has substantially similar term the Nominee Shareholders of SH Zhiyan did not enter into any loan agreement to fund the capital injected in SH Zhiyan as mentioned above.

Financial support letter

Pursuant to the financial support letter, 21Vianet Group, Inc. agreed to provide unlimited financial support to 21Vianet Technology for its operations and agreed to forego the right to seek repayment in the event 21Vianet Technology is unable to repay such funding.

SH Zhiyan has substantially similar term except that SH Edge Connect provides unlimited financial support to SH Zhiyan for its operations.

Despite the lack of technical majority ownership, there exists a parent-subsidiary relationship between the Company and 21Vianet Technology through the irrevocable power of attorney agreement, whereby the Nominee Shareholders effectively assigned all of their voting rights underlying their equity interests in 21Vianet Technology to the Company. In addition, the Company, through 21Vianet China, obtained effective control over 21Vianet Technology through the ability to exercise all the rights of 21Vianet Technology's shareholders pursuant to the share pledge agreement and exclusive option agreement. The Company demonstrates its ability and intention to continue to exercise the ability to absorb substantially all of the expected losses through the financial support letter. In addition, the Company also demonstrates its ability to receive substantially all of the economic benefits of 21Vianet Technology through 21Vianet China through the consulting and service agreement. Thus, the Company is the primary beneficiary of 21Vianet Technology and consolidates 21Vianet Technology and its subsidiaries under Accounting Standards Codification ("**ASC**") Subtopic 810-10, *Consolidation: Overall* ("**ASC 810-10**"). Similar conclusion has been reached with respect to the VIE structures with the Company or the Company's subsidiaries, as the respective primary beneficiaries for other VIEs, i.e., BJ iJoy, WiFire Network and SH Zhiyan.

In the opinion of the Company's management and PRC counsel, (i) the ownership structure of the VIEs is in compliance with applicable PRC laws and regulations in any material respect, and (ii) each of the VIE Agreements is valid, legally binding and enforceable to each party of such agreements under the existing PRC laws and will not violate any PRC laws or regulations currently in effect.

However, there are substantial uncertainties regarding the interpretation and application of current and future PRC laws and regulations. Accordingly, the Company cannot be assured that PRC regulatory authorities will not ultimately take a contrary view to its opinion. If the current ownership structure of the Company and its contractual arrangements with the VIEs are found to be in violation of any existing or future PRC laws and regulations, the Company may be required to restructure its ownership structure and operations in the PRC to comply with the changing and new PRC laws and regulations. To the extent that changes and new PRC laws and regulations prohibit the Company's VIE arrangements from complying with the principles of consolidation, the Company would have to deconsolidate the financial position and results of operations of its VIEs. In the opinion of management, the likelihood of loss in respect of the Company's current ownership structure or the contractual arrangements with the VIEs is remote based on current facts and circumstances.

(c) VIE disclosures

Except for certain property with carrying amounts of RMB134,415 (US$20,600) that were pledged to secure banking borrowings granted to the Company (Note 13), there were no pledges or collateralization of the Consolidated VIEs' assets. Creditors of the Consolidated VIEs have no recourse to the general credit of the primary beneficiaries of the Consolidated VIEs, and such amounts have been parenthetically presented on the face of the consolidated balance sheets. The Consolidated VIEs operate the data centers and own facilities including data center buildings, leasehold improvements, fiber optic cables, computers and network equipment, which are recognized in the Company's consolidated financial statements. They also hold certain value-added technology licenses, registered copyrights, trademarks and registered domain names, including the official website, which are also considered as revenue-producing assets. However, none of such assets was recorded on the Company's consolidated balance sheets as such assets were all acquired or internally developed with insignificant cost and expensed as incurred. In addition, the Company also hires data center operation and marketing workforce for its daily operations and such costs are expensed when incurred. The Company has not provided any financial or other support that it was not previously contractually required to provide to the Consolidated VIEs during the periods presented.

(d) Cooperation with Waburg Pincus

In March 2017, the Company entered into an investment agreement with Warburg Pincus to establish a multi-stage joint venture and build a digital real estate platform in China. The Company seeded the initial JV with four existing high-performing IDC assets, and Warburg Pincus contributed direct capital and extensive industry network and resources in the real estate sector. The Company owns 51% of the equity interests in the four existing internet data center ("**IDC**") assets while Warburg Pincus owns the remaining 49%. On March 14, 2017, Shihua Investment was established by the Company and a subsidiary of Warburg Pincus, with the equity interest of 51% and 49%, respectively.

In March 2017, the Company and Warburg Pincus set up two joint ventures, Shihua Holdings 2 and Shihua DC Investment Management Limited ("**Shihua Investment Management**") (collectively, "**Shihua DC Holdings**") (Note 12), with the equity interest of 49% and 51%, respectively. The Company accounted for the investment in the two joint ventures under equity method investments for its ability to exercise significant influence.

In July 2019, the Company entered into restructuring agreements with Warburg Pincus. Pursuant to the restructuring agreement, Shihua Holdings 2 transferred 100% of the equity interest in some subsidiaries at the consideration equivalent to the subsidiaries' paid-in capital to Warburg Pincus. Thereafter, Shihua Holdings 2 repurchased and cancelled all Warburg Pincus's shares in Shihua Holdings 2. Upon completion of restructuring on August 20, 2019, the Company became the sole shareholder in Shihua Holdings 2, which was accounted for as an asset acquisition (Note 4).

The following tables represent the financial information of the Consolidated VIEs as of December 31, 2019 and 2020 and for the years ended December 31, 2018, 2019 and 2020 before eliminating the intercompany balances and transactions between the Consolidated VIEs and other entities within the Company:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
ASSETS			
Current assets:			
Cash and cash equivalents	591,503	737,556	113,035
Restricted cash	260,961	260,450	39,916
Accounts receivable (net of allowance for doubtful debt of RMB66,416 and RMB67,632 (US$10,365) as of December 31, 2019 and 2020, respectively)	513,440	664,610	101,856
Prepaid expenses and other current assets	1,371,564	1,622,662	248,684
Amounts due from related parties	57,982	12,968	1,987
Total current assets	2,795,450	3,298,246	505,478
Non-current assets:			
Property and equipment, net	3,580,341	5,170,878	792,472
Intangible assets, net	151,722	342,288	52,458
Land use rights, net	58,588	46,719	7,160
Operating lease right-of-use assets, net	1,144,846	1,134,073	173,804
Goodwill	302,647	308,110	47,220
Restricted cash	66,119	27,719	4,248
Deferred tax assets, net	180,959	168,181	25,775
Amounts due from related parties	20,654	20,562	3,151
Other non-current assets	262,685	435,144	66,689
Long-term investments, net	189,571	172,593	26,451
Total non-current assets	5,958,132	7,826,267	1,199,428
Total assets	8,753,582	11,124,513	1,704,906

	As of December 31,		
	2019	**2020**	
	RMB	*RMB*	*US$*
Current liabilities:			
Short-term bank borrowings	232,323	34,000	5,211
Accounts payable and notes payable	211,710	182,669	27,995
Accrued expenses and other payables	622,160	981,961	150,492
Advance from customers	1,068,692	1,041,594	159,631
Deferred revenue	52,088	58,066	8,899
Income tax payable	8,175	12,743	1,953
Amounts due to inter-companies (1)	2,786,838	4,248,422	651,099
Amounts due to related parties	56,977	50,193	7,692
Current portion of finance lease liabilities	220,363	362,760	55,595
Current portion of long-term borrowings	32,500	165,328	25,338
Current portion of deferred government grant	2,595	2,074	318
Current portion of operating lease liabilities	410,422	427,114	65,458
Total current liabilities	5,704,843	7,566,924	1,159,681
Non-current liabilities:			
Amounts due to inter-companies (1)	1,020,972	1,020,972	156,471
Amounts due to related parties	745,899	747,746	114,597
Long-term borrowings	79,500	570,135	87,377
Non-current portion of finance lease liabilities	549,669	299,399	45,885
Unrecognized tax benefits	1,991	68,317	10,470
Deferred tax liabilities	82,725	155,281	23,798
Non-current portion of deferred government grant	5,906	4,100	628
Non-current portion of operating lease liabilities	529,546	497,268	76,210
Total non-current liabilities	3,016,208	3,363,218	515,436
Total liabilities	8,721,051	10,930,142	1,675,117

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Net revenues	2,532,854	2,858,176	3,885,141	595,424
Net profit	52,986	111,592	73,748	11,302

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Net cash generated from operating activities	693,620	495,308	748,418	114,700
Net cash generated from (used in) investing activities	132,522	(1,247,764)	(1,943,358)	(297,833)
Net cash (used in) generated from financing activities	(423,467)	885,286	1,302,082	199,553
Net increase in cash and cash equivalents and restricted cash	402,705	132,830	107,142	16,420

(1) Amounts due to inter-companies consist of intercompany payables to the other companies within the Company for the purchase of telecommunication resources and property and equipment on behalf of the Consolidated VIEs.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) Basis of presentation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("**U.S. GAAP**").

(b) Principles of consolidation

The consolidated financial statements include the financial statements of the Company, its subsidiaries and the Consolidated VIEs for which the Company or a subsidiary of the Company is the primary beneficiary. All significant inter-company transactions and balances between the Company, its subsidiaries and the Consolidated VIEs are eliminated upon consolidation. Results of acquired subsidiaries and its Consolidated VIEs are consolidated from the date on which control is transferred to the Company.

(c) Use of estimates

The preparation of the consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the period. Significant estimates and assumptions reflected in the Company's financial statements include, but are not limited to, determining the valuation allowance for deferred tax assets, determining the fair value of convertible promissory notes and assessing the initial valuation of the assets acquired and liabilities assumed in acquisitions. Changes in facts and circumstances may result in revised estimates. Given the global economic climate and unforeseen effects from COVID-19 pandemic, the process of estimation has become more challenging. Actual results could differ from those estimates, and as such, differences may be material to the consolidated financial statements.

(d) Foreign currency

The functional currency of the Company and its overseas subsidiaries is the United States dollar ("**US$**"), whereas the functional currency of the Company's PRC subsidiaries and its Consolidated VIEs is the Chinese Renminbi ("**RMB**") as determined based on the criteria of ASC Topic 830, *Foreign Currency Matters* ("**ASC 830**"). The Company uses the RMB as its reporting currency.

The financial statements of the Company and its overseas subsidiaries are translated from the functional currency to the reporting currency, RMB. Transactions denominated in foreign currencies are re-measured into the functional currency at the exchange rates prevailing on the transaction dates. Monetary assets and liabilities denominated in foreign currencies are re-measured at the exchange rates prevailing at the balance sheet date. Non-monetary items that are measured in terms of historical costs in foreign currency are re-measured using the exchange rates at the dates of the initial transactions. Exchange gains and losses are included in the consolidated statements of operations.

The Company uses the average exchange rate for the year and the exchange rate at the balance sheet date to translate the operating results and financial position, respectively. Translation differences are recorded in accumulated other comprehensive income (loss) within the statements of comprehensive loss.

(e) Convenience translation

Amounts in US$ are presented for the convenience of the reader and are translated at the noon buying rate of US$1.00 to RMB6.5250 on December 31, 2020, the last business day in fiscal year 2020, representing the noon buying rate set forth in the H.10 statistical release of the U.S. Federal Reserve Board. No representation is made that the RMB amounts could have been, or could be converted, realized or settled into US$ at such rate or at any other rate.

(f) Cash and cash equivalents

Cash and cash equivalents consist of cash on hand and demand deposits placed with banks which are unrestricted as to withdrawal and use and have original maturities less than three months. All highly liquid investments with a stated maturity of 90 days or less from the date of purchase are classified as cash equivalents.

(g) Restricted cash

Restricted cash mainly represents amounts held by a few banks in escrow as security for credit facilities, the guarantee of compliance with the network and service requirements of the radio spectrum license awarded by the Hong Kong Telecommunication Authority, the deposits for finance lease, the deposits for a lawsuit with a third party, the deposits held in escrow for the advances received from end customers subscribing Office 365 and Windows Azure services (the disbursement of which shall be agreed by both Microsoft (China) Co., Ltd. ("**Microsoft**") and the Company), the deposits for business operation, the deposits for loans.

(h) Short-term investments

All highly liquid investments with original maturities of greater than three months but less than twelve months, are classified as short-term investments. Interest income is included in earnings.

(i) Accounts receivable and allowance for doubtful debt

Prior to adopting ASC 326, *Financial Instruments-Credit Losses* ("**ASC326**"), accounts receivables are carried at net realizable value. An allowance for doubtful debt is recorded in the period when loss is probable based on an assessment of specific evidence indicating troubled collection, historical experience, accounts aging and other factors in accordance with ASC 310, *Receivables*. An accounts receivable is written off after all collection effort has ceased.

On January 1, 2020, the Company adopted ASC 326 using modified-retrospective transition approach. Following the adoption of this guidance, a cumulative- effect adjustment in accumulated deficit of RMB2,740 was recognized as of January 1, 2020. For the year ended December 31, 2020, the Company recorded credit losses of RMB2,393 (US$367).

Pursuant to ASC 326, an allowance for credit losses for financial assets, including accounts receivable, carried at amortized cost to present the net amount expected to be collected as of the balance sheet date. Such allowance is based on credit losses expected to arise over the life of the asset's contractual term, which includes consideration of prepayments. Assets are written off when the Company determines that such financial assets are deemed uncollectible and are recognized as a deduction from the allowance for credit losses. Expected recoveries of amounts previously written off, not to exceed the aggregate of the amount previously written off, are included in determining the necessary reserve at the balance sheet date. The Company pools financial assets based on similar risk characteristics to estimate expected credit losses. The Company estimates expected credit losses on financial assets individually when those assets do not share similar risk characteristics. The Company closely monitors its accounts receivable including timely account reconciliations, detailed reviews of past due accounts, updated credit limits, and monthly analysis of the adequacy of their reserve for credit losses.

The Company utilizes a loss rate approach to determine lifetime expected credit losses for its financial assets. This method is used for calculating an estimate of losses based primarily on the Company's historical loss experience. In determining loss rates, the Company evaluates information related to historical losses, adjusted for current conditions and further adjusted for the period of time that the Company can reasonably forecast. The Company has concluded that it can reasonably support a forecast period for the contractual life of its financial assets. Qualitative and quantitative adjustments related to current conditions and the reasonable and supportable forecast period consider the following: the customer or vendor 's creditworthiness, changes in the policy and procedures to establish customer credit limits, changes in the payment terms of receivables, existence and effect of any concentration of credit and changes in the level of such concentrations, and the effects of other external forces such as the current and forecasted direction of the economic and business environment.

(j) Property and equipment

Property and equipment are stated at cost less accumulated depreciation and any recorded impairment. Property and equipment acquired in a business combination are recognized initially at fair value at the data of acquisition. Property and equipment are depreciated using the straight-line method over the estimated useful lives of the assets, as follows:

Category	Estimated useful life
Property	25-46 years
Leasehold improvements	Over the shorter of lease term or the estimated useful lives of the assets
Optical fibers	10-20 years
Computer and network equipment	1-10 years
Office equipment	2-8 years
Motor vehicles	2-8 years

Repair and maintenance costs are charged to expense as incurred, whereas the costs of betterments that extend the useful life of property and equipment are capitalized as additions to the related assets. Retirements, sale and disposals of assets are recorded by removing the cost and accumulated depreciation with any resulting gain or loss reflected in the consolidated statements of operations.

Property and equipment that are purchased or constructed which require a period of time before the assets are ready for their intended use are accounted for as construction-in-progress. Construction-in-progress is recorded at acquisition cost, including installation costs. Construction-in-progress is transferred to specific property and equipment accounts and commences depreciation when these assets are ready for their intended use.

(k) Intangible assets

Intangible assets are carried at cost less accumulated amortization and any recorded impairment. Intangible assets acquired in a business combination are recognized initially at fair value at the date of acquisition. Intangible assets with finite useful lives are amortized using a straight-line method. These amortization methods reflect the estimated pattern in which the economic benefits of the respective intangible assets are to be consumed.

The Company has capitalized certain internal use software development costs in accordance with ASC Subtopic 350-40, *Intangibles-Goodwill and Other: Internal-Use Software* ("**ASC 350-40**"), amounting to RMB6,093, RMB13,189, and RMB8,684 (US$1,331) for the years ended December 31, 2018, 2019 and 2020, respectively. The Company capitalizes certain costs relating to software acquired, developed, or modified solely to meet the Company's internal requirements and for which there are no substantive plans to market the software. These costs mainly include the research staff costs directly associated with the internal-develop software projects during the application development stage. Capitalized internal-use software costs are included in "intangible assets, net".

Intangible assets have weighted average useful lives from the date of purchase/ acquisition as follows:

Purchased software	5.1 years
Radio spectrum license	15 years
Operating permits*	29.3 years
Contract backlog*	4.9 years
Customer relationships*	8.8 years
Licenses*	15 years
Supplier relationships*	10 years
Trade Names*	20 years
Platform software*	5 years
Non-complete agreements*	5 years
Internal use software	3.8 years
Customer contract*	6.5 years

* *Acquired in the acquisitions of subsidiaries.*

(l) Leases

Effective January 1, 2019, the Company adopted ASC Topic 842, *Lease* ("**ASC 842**") using the modified retrospective method and did not restate the comparable periods. The Company determines if an arrangement is a lease at inception. Leases are classified as operating or finance leases in accordance with the recognition criteria in ASC 842-20-25. The Company's leases do not contain any material residual value guarantees or material restrictive covenants.

The Company has elected the package of practical expedients, which allows the Company not to reassess (1) whether any expired or existing contracts as of the adoption date are or contain a lease, (2) lease classification for any expired or existing leases as of the adoption date and (3) initial direct costs for any expired or existing leases as of the adoption date. The Company has lease agreements with lease and non-lease components, which are generally accounted for separately. Lastly, the Company elected the short-term lease exemption for all contracts with lease term of 12 months or less.

At the commencement date of a lease, the Company determines the classification of the lease based on the relevant factors present and records a right-of-use ("**ROU**") asset and lease liability for operating lease, and records property and equipment and finance lease liability for finance lease. ROU assets and property and equipment acquired through lease represent the right to use an underlying asset for the lease term, and operating lease liabilities and finance lease liabilities represent the obligation to make lease payments arising from the lease. ROU assets and lease liabilities are calculated as the present value of the lease payments not yet paid. If the rate implicit in the Company's leases is not readily available, the Company uses an incremental borrowing rate based on the information available at the lease commencement date in determining the present value of lease payments. This incremental borrowing rate reflects the fixed rate at which the Company could borrow on a collateralized basis the amount of the lease payments in the same currency, for a similar term, in a similar economic environment. ROU assets include any lease prepayments and are reduced by lease incentives. Operating lease expense for lease payments is recognized on a straight-line basis over the lease term. Lease terms are based on the non-cancelable term of the lease and may contain options to extend the lease when it is reasonably certain that the Company will exercise that option.

Leases with an initial lease term of 12 months or less are not recorded on the consolidated balance sheets. Lease expense for these leases is recognized on a straight-line basis over the lease term.

(m) Land use right

The land use rights represent the operating lease prepayments for the rights to use the land in the PRC under ASC 842. Amortization of the prepayments is provided on a straight-line basis over the terms of the respective land use rights certificates.

(n) Long-term investments

The Company's long-term investments primarily consist of equity investments without readily determinable fair value, equity method investments.

Pursuant to ASC Topic 321, *Investments – Equity Securities* ("**ASC 321**"), equity investments, except for those accounted for under the equity method and those that result in consolidation of the investee and certain other investments, are measured at fair value, and any changes in fair value are recognized in earnings. For equity securities without readily determinable fair value and do not qualify for the existing practical expedient in ASC Topic 820, *Fair Value Measurements and Disclosures* ("**ASC 820**"), to estimate fair value using the net asset value per share (or its equivalent) of the investment, the Company elected to use the measurement alternative to measure those investments at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer, if any. Equity securities with readily determinable fair value are measured at fair values, and any changes in fair value are recognized in earnings.

For equity investments measured at fair value with changes in fair value recorded in earnings, the Company does not assess whether those securities are impaired. For those equity investments that the Company elects to use the measurement alternative, the Company makes a qualitative assessment of whether the investment is impaired at each reporting date. If a qualitative assessment indicates that the investment is impaired, the entity has to estimate the investment's fair value in accordance with the principles of ASC 820. If the fair value is less than the investment's carrying value, the entity has to recognize an impairment loss in net loss equal to the difference between the carrying value and fair value.

Investments in equity investees represent investments in entities in which the Company can exercise significant influence but does not own a majority equity interest or control are accounted for using the equity method of accounting in accordance with ASC Subtopic 323-10, *Investments-Equity Method and Joint Ventures: Overall* ("**ASC 323-10**"). The Company applies the equity method of accounting that is consistent with ASC 323-10 in limited partnerships in which the Company holds a three percent or greater interest. Under the equity method, the Company initially records its investment at cost and prospectively recognizes its proportionate share of each equity investee's net profit or loss into its consolidated statements of operations. The difference between the cost of the equity investee and the amount of the underlying equity in the net assets of the equity investee is recognized as equity method goodwill included in equity method investments on the consolidated balance sheets. The Company evaluates its equity method investments for impairment under ASC 323-10. An impairment loss on the equity method investments is recognized in the consolidated statements of operations when the decline in value is determined to be other-than-temporary.

(o) Goodwill

Goodwill represents the excess of the purchase price over the amounts assigned to the fair value of the assets acquired and the liabilities assumed of an acquired business. In accordance with ASC Topic 350, *Goodwill and Other Intangible Assets* ("**ASC 350**"), recorded goodwill amounts are not amortized, but rather are tested for impairment annually or more frequently if there are indicators of impairment present.

In accordance with ASC 350, the Company assigned and assessed goodwill for impairment at the reporting unit level. A reporting unit is an operating segment or one level below the operating segment. As of December 31, 2018, 2019 and 2020, there is only hosting and related services and the Company as a whole is one reporting unit.

Pursuant to ASC 350, in 2019 and 2020, the Company performed a qualitative assessment for hosting and related services and completed its annual impairment test for goodwill that has arisen out of its acquisitions. The Company evaluated all relevant factors including, but not limited to, macroeconomic conditions, industry and market conditions, financial performance, and the share price of the Company. The Company weighed all factors in their entirety and concluded that it was not more-likely-than-not the fair value was less than the carrying amount of the reporting unit, and further impairment testing on goodwill was unnecessary. No impairment loss of goodwill in hosting and related services was recognized for the years ended December 31, 2018, 2019 and 2020.

(p) Impairment of long-lived assets

The Company evaluates long-lived assets, such as fixed assets and purchased or internally developed intangible assets with finite lives for impairment whenever events or changes in circumstances indicate the carrying value of an asset may not be recoverable in accordance with ASC Topic 360, *Property, Plant and Equipment*. When such events occur, the Company assesses the recoverability of the asset group based on the undiscounted future cash flows the asset group is expected to generate and recognizes an impairment loss when estimated undiscounted future cash flows expected to result from the use of the asset group plus net proceeds expected from disposition of the asset group, if any, is less than the carrying value of the asset group. If the Company identifies an impairment, the Company reduces the carrying amount of the asset group to its estimated fair value based on a discounted cash flow approach or, when available and appropriate, to comparable market values and the impairment loss, if any, is recognized in the consolidated statements of operations.

As of December 31, 2020, due to continuing losses, the Company recorded the long-lived assets impairment amounting to RMB81,619 (US$12,509) for one of its asset groups, resulting from excess of the carrying amount of the asset group over the fair value of the asset group. The Company determined the fair value of the asset group using the income approach based on the discounted cash flows associated with the asset group. The discounted cash flows were based on a six-year projection for the asset group, which is consistent with the remaining useful life of its principal asset. The discount rate of 13% was derived and used in the valuations which reflect the market assessment of the risks specific to the Company and its industry and is based on its weighted average cost of capital. No impairment was recognized in other asset groups as there was no impairment indicator identified.

The impairment loss reduced the carrying amount of the long-lived assets of the group on a pro-rata basis using the relative carrying amount of those assets except that the loss allocated to an individual long-lived asset of the group shall not reduce the carrying amount of that asset below its fair value whenever that fair value is determinable without undue cost and effort.

The Company recorded impairment charges associated with its long-lived assets and acquired intangibles as follows:

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Impairment of equipment	–	–	35,793	5,486
Impairment of intangible assets	–	–	38,654	5,924
Impairment of other non-current assets	–	–	7,172	1,099

(q) Fair value of financial instruments

The Company's financial instruments include cash and cash equivalents, restricted cash, short-term investments, accounts receivable and payable, other receivables and payables, bonds payable, short-term and long-term borrowings, available-for-sale investments, liability classified restricted share units ("**RSU**") and convertible promissory notes. Other than the bonds payable, long-term borrowings and convertible promissory notes, the carrying values of these financial instruments approximate their fair values due to their short-term maturities.

The carrying amounts of bonds payable and long-term borrowings approximate their fair values since they bear interest rates which approximate market interest rates. The Company carries the bonds payable at face value less unamortized debt discount and issuance cost on its consolidated balance sheets and measures the fair value for disclosure purposes only. The Company elected the fair value option of convertible promissory notes when it initially recognized as financial liability as the fair value better represents the value of the underlying liabilities. The contingent purchase considerations in both cash and shares and share-settled bonus are initially measured at fair value on the acquisition dates of the acquired businesses and the date of grant, respectively, and subsequently remeasured at the end of each reporting period with an adjustment for fair value recorded to the current period income/(expense). Convertible promissory notes are measured at fair value in accordance with ASC 825, *Financial Instruments* on the issuance date and subsequently remeasured at the end of each reporting period with an adjustment for fair value recorded to the current period income/(expense), however, any fair value changes related to instrument- specific credit risk are recorded to other comprehensive income/(loss).

(r) Revenue recognition

The Company provides hosting and related services including hosting of customers' servers and networking equipment, connecting customers' servers with internet backbones ("**Hosting service**"), virtual private network services providing encrypted secured connection to public internet ("**VPN service**") and other value-added services and public cloud service through strategic partnership with Microsoft.

On January 1, 2018, the Company adopted ASU No. 2014-09, *Revenue from Contracts with Customers* ("**ASC 606**"), which supersedes the revenue recognition requirements in ASC Topic 605, *Revenue Recognition* ("**ASC 605**"), using the modified retrospective transition method applied to those contracts which were not completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under ASC 606, while prior period amounts have not been adjusted and continue to be reported in accordance with historic accounting under ASC 605. The impact of adopting the new revenue standard was not material to consolidated financial statements and there was no adjustment to beginning retained earnings on January 1, 2018.

Under ASC 606, an entity recognizes revenue as the Company satisfies a performance obligation when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of ASC 606, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price, including variable consideration, if any; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect the consideration to which it is entitled in exchange for the goods or services it transfers to the customer.

Once a contract is determined to be within the scope of ASC 606 at contract inception, the Company reviews the contract to determine which performance obligations it must deliver and which of these performance obligations are distinct. The Company recognizes revenue based on the amount of the transaction price that is allocated to each performance obligation when that performance obligation is satisfied or as it is satisfied.

The Company is a principal and records revenue on a gross basis when the Company is primarily responsible for fulfilling the service, has discretion in establishing pricing and controls the promised service before transferring that service to customers. Otherwise, the Company records revenue at the net amounts as commissions.

The Company's revenue recognition policies effective on the adoption date of ASC 606 are as follows:

Hosting services are services that the Company dedicates data center space to house customers' servers and networking equipment and provides tailored server administration services including operating system support and assistance with updates, server monitoring, server backup and restoration, server security evaluation, firewall services, and disaster recovery. The Company also provides interconnectivity services to connect customers with each other, internet backbones in China and other networks through Border Gateway Protocol, or BGP, network, or single-line, dual-line or multiple-line networks. Hosting services are typically provided to customers for a fixed amount over the contract service period and the related revenues are recognized on a straight-line basis over the term of the contract. For certain contracts where considerations are based on the usage of the Hosting services, the related revenues are recognized based on the consumption at the predetermined rate as the services are rendered throughout the contact term. The Company is a principal and records revenue for Hosting service on a gross basis.

VPN services are services that the Company extends customers' private networks by setting up secure and dedicated connections through the public internet. VPN services are provided to customers for a fixed amount over the contract service period and revenue are recognized on a straight-line basis over the term of the contract. The Company is a principal and records revenue for VPN service on a gross basis.

The Company partners with Microsoft to provide Cloud services that allow enterprise and individual customers to run their applications over the internet using the IT infrastructure. Cloud services are generally charged by the Company to the end customers for a fixed amount or based on the actual usage of the cloud resources at predetermined rates over the subscription period, which in general is one year. The Company fulfils its performance obligation of facilitating Microsoft to provide the Cloud services to the end customers by providing, but not limited to, contract processing management, billing, payment collection, maintenance, help desk supports and certain IT infrastructure services. These are considered as a series of distinct services that are substantially the same and have the same pattern of transfer to the customer; therefore, they are accounted for as a single performance obligation that is satisfied over time. The corresponding consideration that the Company is entitled to is recognized as revenue using a time-based method since this best depicts the pattern of the control transfer. Revenue from Cloud services consists of monthly incentive revenues received from Microsoft upon completion of certain conditions and gross billing amount received from end customers net of considerations remitted by the Company to Microsoft. When the contract is modified to add distinct services to the single performance obligation for additional fees, such changes are accounted for prospectively as a termination of the old contract and the creation of a new contract.

For certain arrangements, customers are required to pay the Company before the services are delivered. When either party to a revenue contract has performed, the Company recognizes a contract asset or a contract liability in the consolidated balance sheets, depending on the relationship between the Company's performance and the customer's payment. Contract liabilities were mainly related to fee received for Hosting services to be provided over the contract period, which were presented as deferred revenue on the consolidated balance sheets.

Deferred revenue represented the Company's obligation to transfer the goods or services to a customer for which the Company has received consideration (or an amount of consideration is due) from the customer. As of December 31, 2019 and 2020, the Company has deferred revenue amounting up to RMB57,625 and RMB63,245 (US$9,693), respectively. Revenue recognized from opening deferred revenue balance was RMB46,730 (US$7,162) for the year ended December 31, 2020.

The Company's certain Hosting service contains lease and non-lease components. The Company elected to adopt the practical expedient which allows lessors to combine lease and non-lease components and account for them as one component if 1) the timing and pattern of transfer of the lease component and non- lease component is the same; 2) the lease component should be classified as an operating lease if it were accounted for separately. The combined component is accounted for in accordance with the current lease accounting guidance ("**ASC 842**") if the lease component is predominant, and in accordance with the ASC 606 if the non-lease component is predominant. The Company has determined that the non-lease component is the predominant component in Hosting service. Therefore, the Company has accounted for the combined component in accordance with ASC 606.

The Company does not disclose the value of unsatisfied performance obligations as the Company's revenue contracts are (i) contracts with an original expected length of one year or less or (ii) contracts for which the Company recognizes revenue at the amount to which it has the right to invoice for services performed.

(s) Cost of revenues

Cost of revenues consists primarily of telecommunication costs, depreciation of the Company's long-lived assets, amortization of acquired intangible assets, maintenance, data center rental expenses directly attributable to the provision of the IDC services, payroll and other related costs of operations.

(t) Advertising expenditures

Advertising expenditures are expensed as incurred and are included in sales and marketing expenses, which amounted to RMB7,968, RMB6,095 and RMB7,779 (US$1,192) for the years ended December 31, 2018, 2019 and 2020, respectively.

(u) Research and development expenses

Research and development expenses consist primarily of payroll and related personnel costs for routine upgrades and related enhancements of the Company's services and network. Research and development expenses are expensed as incurred except for costs to develop internal-use software or add significant upgrades and enhancements resulting in additional functionality to internal-use software that meet the capitalization criteria in accordance with ASC Subtopic 350-40, *Intangibles-Goodwill and Other, Internal-Use Software.*

(v) Government grants

Government grants are provided by the relevant PRC municipal government authorities to subsidize the cost of certain research and development projects. The amount of such government grants is determined solely at the discretion of the relevant government authorities and there is no assurance that the Company will continue to receive these government grants in the future. Government grants are recognized when it is probable that the Company will comply with the conditions attached to them, and the grants are received. When the grant relates to an expense item, it is recognized in the consolidated statement of operations over the period necessary to match the grant on a systematic basis to the costs that it is intended to compensate, as a reduction of the related operating expense. When the grant relates to an asset, it is recognized as deferred government grants and released to the consolidated statement of operations in equal amounts over the expected useful life of the related asset, when operational, as a reduction of the related depreciation expense.

(w) Capitalized interest

Interest costs are capitalized if they are incurred during the acquisition, construction or production of a qualifying asset and such costs could have been avoided if expenditures for these assets have not been made.

As a result of total interest costs capitalized during the period, the interest expense for the years ended December 31, 2018, 2019 and 2020, was as follows:

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Interest expense and amortization cost of bonds payable	150,098	223,832	223,785	34,297
Interest expense on convertible promissory notes	–	–	18,880	2,893
Interest expense on bank and other borrowings	19,395	14,212	39,424	6,042
Interest expense on finance leases	79,935	120,185	130,196	19,953
Total interest costs	249,428	358,229	412,285	63,185
Less: Total interest costs capitalized	(13,362)	(12,274)	(31,676)	(4,854)
Interest expense, net	236,066	345,955	380,609	58,331

(x) Income taxes

The Company accounts for income taxes using the liability method. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial reporting and tax bases of assets and liabilities using enacted tax rates that will be in effect in the period in which the differences are expected to reverse. The carrying amount of deferred tax assets is reviewed on an entity-by-entity basis and is reduced by a valuation allowance to the extent that it is more-likely-than-not that the benefits of the deferred tax assets will not be realized in future years. The valuation allowance is determined based on the weight of positive and negative evidences including future reversals of existing taxable temporary differences, the adequacy of future taxable income exclusive of reversing temporary differences, and verifiable tax planning. The estimated future taxable income involves significant assumptions of forecasted revenue growth that take into consideration of the Company's historical financial results, its plan of expanding operating capacity as well as current industry trends. The effect on deferred taxes of a change in tax rates is recognized in income in the period that includes the enactment date of the change in tax rate. All deferred income tax assets and liabilities are classified as non-current on the consolidated balance sheets.

The Company applies ASC Topic 740, *Accounting for Income Taxes* ("**ASC 740**"), to account for uncertainty in income taxes. ASC 740 prescribes a recognition threshold a tax position is required to meet before being recognized in the financial statements.

The Company has elected to classify interest and penalties related to unrecognized tax benefits, if and when required, as part of "income tax expenses" in the consolidated statements of operations.

(y) Share-based compensation

Share options and Restricted Share Units ("**RSUs**") granted to employees are accounted for under ASC Topic 718, *Compensation – Stock Compensation* ("**ASC 718**"), which requires that share-based awards granted to employees be measured based on the grant date fair value and recognized as compensation expenses over the requisite service period and/or performance period (which is generally the vesting period) in the consolidated statements of operations. The Company accounts for forfeitures as they occur.

The Company has elected to recognize compensation expenses using the straight-line method for share-based awards granted with service conditions that have a graded vesting schedule. For share-based awards granted with performance conditions, the Company recognizes compensation expenses using the accelerated method. The Company commences recognition of the related compensation expenses if it is probable that the defined performance condition will be met. To the extent that the Company determines that it is probable that a different number of share-based awards will vest depending on the outcome of the performance condition, the cumulative effect of the change in estimate is recognized in the period of change. For share-based awards with market conditions, the probability to achieve market conditions is reflected in the grant date fair value. The Company recognized the related compensation expenses when the requisite service is rendered using the accelerate method.

On November 26, 2016, the Board approved a new incentive program to certain individuals with a new bonus scheme which will be settled by issuing a variable number of shares with a fair value equal to fixed dollar amount on the settlement date. The Company remeasures the fair value of such liability at each reporting period end through earnings until the actual settlement date, which is the date when the number of underlying shares were fixed and recorded the compensation cost over the remaining vesting term.

A cancellation of the terms or conditions of an equity award under original award in exchange for a new award should be treated as modification. The compensation costs associated with the modified awards are recognized if either the original vesting conditions or the new vesting conditions have been achieved. Total recognized compensation cost for the awards is at least equal to the fair value of the original awards at the grant date unless at the date of the modification the performance or service conditions of the original awards are not expected to be satisfied. The incremental compensation cost is measured as the excess of the fair value of the replacement awards over the fair value of original awards at the modification date. Therefore, in relation to the modified awards, the Company recognizes share-based compensation over the vesting periods of the new awards, which comprises (i) the amortization of the incremental portion of share-based compensation over the remaining vesting term, and (ii) any unrecognized compensation cost of original awards, using either the original term or the new term, whichever results in higher expenses for each reporting period. For a modification of a market condition, the incremental portion of share-based compensation and unrecognized compensation cost of original award are recognized over new vesting period. For modification of a liability award that remains a liability after modification, the liability award continues to be remeasured at fair value at each reporting date.

(z) Loss per share

In accordance with ASC Topic 260, *Earnings per Share* ("**ASC 260**"), basic loss per share is computed by dividing net loss attributable to ordinary shareholders by the weighted average number of unrestricted ordinary shares outstanding during the year using two-class method. Under the two-class method, net loss is allocated between ordinary shares and participating securities based on their participating rights. The company's series A preferred shares (Note 17) are participating securities. Diluted loss per share is calculated by dividing net loss attributable to ordinary shareholders using two-class method as adjusted for the effect of dilutive ordinary equivalent shares, if any, by the weighted average number of ordinary and dilutive ordinary equivalent shares outstanding during the period. Contingently issuable shares, including performance-based share awards and contingent considerations to be settled in shares, are included in the computation of basic earnings per share only when there is no circumstance under which those shares would not be issued. Contingently issuable shares are included in the denominator of the diluted loss per share calculation as of the beginning of the period or as of the inception date of the contingent share arrangement, if later, only when dilutive and when all the necessary conditions have been satisfied as of the reporting period end. For contracts that may be settled in ordinary shares or in cash at the election of the Company, share settlement is presumed, pursuant to which incremental shares relating to the number of shares that would be required to settle the contract are included in the denominator of diluted loss per share calculation if the effect is more dilutive. Ordinary equivalent shares consist of the ordinary shares issuable upon the exercise of the share options, using the treasury stock method and shares issuable upon the conversion of the company's series A preferred shares and convertible promissory notes using if converted method. Ordinary share equivalents are excluded from the computation of diluted loss per share if their effects would be anti-dilutive.

(aa) Share repurchase program

Pursuant to the Board of Directors' resolutions on December 2, 2019, the Company's management is authorized to repurchase, in one or more tranches, up to an aggregate of US$20,000 of its own outstanding shares (including shares represented by ADSs) (each such transaction a "**Repurchase**") over a period of 13 months ending on December 31, 2020.

The Company accounted for the repurchased shares as Treasury Stock at cost in accordance to ASC Subtopic 505-30, *Treasury Stock* ("**ASC 505-30**"), and the share repurchase is shown separately in the consolidated statement of shareholder's equity, as the Company has not yet decided on the ultimate disposition of those ADSs acquired. When the Company decides to retire the treasury stock, the difference between the original issuance price and the repurchase price is debited into accumulated deficit.

For the years ended December 31, 2018, 2019 and 2020, the Company repurchased nil, 242,830 and nil ADSs for a consideration of nil, RMB11,840 and nil, respectively.

(bb) Comprehensive loss

Comprehensive loss is defined as the decrease in equity of the Company during a period from transactions and other events and circumstances excluding transactions resulting from investments by owners and distributions to owners. Accumulated other comprehensive income of the Company includes only foreign currency translation adjustments related to the Company and its overseas subsidiaries, whose functional currency is US$.

(cc) Segment reporting

In accordance with ASC Topic 280, *Segment Reporting* ("**ASC 280**"), the Company had one reportable segment since the Company's chief executive officer, who has been identified as the Company's chief operating decision-maker ("**CODM**") formerly relied on the results of operations of hosting and related services when making decisions on allocating resources and assessing performance of the Company, the Company has only one hosting and related services and the CODM reviews the operation result of the Company as a whole. Hosting and related services business focuses primarily on colocation, interconnectivity, cloud, VPN, hybrid IT and other value-added services.

As of December 31, 2018, 2019 and 2020, the Company only had one reporting segment. Because substantially all of the Company's long-lived assets and revenues are located in and derived from the PRC, geographical segments are not presented.

(dd) Employee benefits

The full-time employees of the Company's PRC subsidiaries are entitled to staff welfare benefits including medical care, housing fund, pension benefits and unemployment insurance, which are governmental mandated defined contribution plans. These entities are required to accrue for these benefits based on certain percentages of the employees' respective salaries, subject to certain ceilings, in accordance with the relevant PRC regulations, and make cash contributions to the state-sponsored plans out of the amounts accrued.

(ee) Comparatives

Certain items reported in the prior year's consolidated financial statements have been reclassified to conform with the current year's presentation.

(ff) Recent accounting pronouncements

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform* (Topic 848), which is elective, and provides for optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The amendments apply only to contracts and hedging relationships that reference LIBOR or another reference rate expected to be discontinued due to reference rate reform. These amendments are effective immediately and may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022. The Company is currently evaluating the impact of reference rate reform and potential impact of adoption of these elective practical expedients on its condensed consolidated financial statements and will consider the impact of adoption during its analysis.

In August 2020, the FASB issued ASU No. 2020-06, *Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* ("**ASU 2020-06**"), which focuses on amending the legacy guidance on convertible instruments and the derivatives scope exception for contracts in an entity's own equity. ASU 2020-06 simplifies an issuer's accounting for convertible instruments by reducing the number of accounting models that require separate accounting for embedded conversion features. ASU 2020-06 also simplifies the settlement assessment that entities are required to perform to determine whether a contract qualifies for equity classification. Further, ASU 2020-06 enhances information transparency by making targeted improvements to the disclosures for convertible instruments and earnings-per-share (EPS) guidance, i.e., aligning the diluted EPS calculation for convertible instruments by requiring that an entity use the if-converted method and that the effect of potential share settlement be included in the diluted EPS calculation when an instrument may be settled in cash or shares, adding information about events or conditions that occur during the reporting period that cause conversion contingencies to be met or conversion terms to be significantly changed. This update will be effective for the Company's fiscal years beginning after December 15, 2021, and interim periods within those fiscal years. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. Entities can elect to adopt the new guidance through either a modified retrospective method of transition or a fully retrospective method of transition. The Company expects to early adopt ASU 2020-06 beginning January 1, 2021 and does not expect any material impact on its financial statement at the date of adoption.

3. CONCENTRATION OF RISKS

(a) Credit risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash and cash equivalents, short- term investments, accounts receivable, other receivables and amounts due from related parties. As of December 31, 2019 and 2020, the aggregate amount of cash and cash equivalents, restricted cash and short-term investments of RMB1,171,075 and RMB1,419,855 (US$217,602), respectively, were held at major financial institutions located in the PRC, and US$222,638 and US$303,824 (RMB1,982,454), respectively, were deposited with major financial institutions located outside the PRC. Management believes that these financial institutions are of high credit quality and continually monitors the credit worthiness of these financial institutions. Historically, deposits in Chinese banks are secure due to the state policy on protecting depositors' interests. However, China promulgated a new Bankruptcy Law in August 2006 that came into effect on June 1, 2007, which contains a separate article expressly stating that the State Council may promulgate implementation measures for the bankruptcy of Chinese banks based on the Bankruptcy Law. Under the new Bankruptcy Law, a Chinese bank may go into bankruptcy. In addition, since China's concession to the World Trade Organization, foreign banks have been gradually permitted to operate in China and have been significant competitors against Chinese banks in many aspects, especially since the opening of the Renminbi business to foreign banks in late 2006. Therefore, the risk of bankruptcy of those Chinese banks in which the Company has deposits has increased. In the event of bankruptcy of one of the banks which holds the Company's deposits, the Company is unlikely to claim its deposits back in full since the bank is unlikely to be classified as a secured creditor based on PRC laws.

(b) Business, supplier, customer, and economic risk

The Company participates in a relatively dynamic and competitive industry that is heavily reliant operation excellence of the services. The Company believes that changes in any of the following areas could have a material adverse effect on the Company's future financial position, result of operations or cash flows:

(i) Business Risk – Third parties may develop technological or business model innovations that address data center and network requirements in a manner that is, or is perceived to be, equivalent or superior to the Company's services. If competitors introduce services that compete with, or surpass the quality, price or performance of the Company's services, the Company may be unable to renew its agreements with existing customers or attract new customers at the prices and levels that allow the Company to generate reasonable rates of return on its investment.

(ii) Supplier Risk – The Company's operations are dependent upon bandwidth and cabinet capacity provided by the third-party telecom carriers. There can be no assurance that the Company will be able to secure the cabinet and bandwidth supply from the third-party telecom carriers, neither the Company is adequately prepared for unexpected increases in bandwidth demands by its customers. The communications capacity the Company has leased, include cabinet and bandwidth, may become unavailable for a variety of reasons, such as physical interruption, technical difficulties, contractual disputes, or the financial health of its third-party providers. Any failure of these network providers to provide the capacity the Company requires may result in a reduction in, or interruption of, service to its customers. A significant portion of the Company's total bandwidth and cabinet resources are purchased from its five largest suppliers, who collectively accounted for 19%, 21% and 39% of the Company's total bandwidth and cabinet resources for the years ended December 31, 2018, 2019 and 2020, respectively.

(iii) Customer Risk – The success of the Company's business going forward will rely in part on Company's ability to continue to obtain and expand business from existing customers while also attracting new customers. The Company has a diversified base of customers covering its services and the revenue from the largest single entity customer accounted for less than 9% and 8% of the Company's total net revenues for the years ended December 31, 2018 and 2019, and two single entity customers generated more than 10% of the Company's total net revenues for the year ended December 31, 2020. Certain customers are local subsidiaries of a telecommunication carrier in China, which the Company views as separate customers as it negotiates with, maintain and support each of these entities given that each of them has the separate decision-making authority and services procurement budget. None of these customers on a stand-alone basis contributed more than 2% of the Company's revenues in any given year but in the aggregate, they contributed approximately 4%, 4% and 3% of the Company's total revenues for the years ended December 31, 2018, 2019 and 2020, respectively.

(iv) Political, economic and social uncertainties – The Company's operations could be adversely affected by significant political, economic and social uncertainties in the PRC. Although the PRC government has been pursuing economic reform policies for more than 20 years, no assurance can be given that the PRC government will continue to pursue such policies or that such policies may not be significantly altered, especially in the event of a change in leadership, social or political disruption or unforeseen circumstances affecting the PRC political, economic and social conditions. There is also no guarantee that the PRC government's pursuit of economic reforms will be consistent or effective.

(v) Regulatory restrictions – The applicable PRC laws, rules and regulations currently prohibit foreign ownership of companies that provide internet related services, including hosting and related services. Accordingly, the Company's subsidiary, 21Vianet China, is currently ineligible to apply for the required licenses for providing IDC services in China. As a result, the Company operates its IDC services in the PRC through its Consolidated VIEs which holds the licenses and permits required to provide IDC services in the PRC. The PRC Government may also choose at anytime to block access to certain website operators which could also materially impact the Company's ability to generate revenue.

(c) Currency convertibility risk

The Company transacts substantially all its business in RMB, which is not freely convertible into foreign currencies. On January 1, 1994, the PRC government abolished the dual-rate system and introduced a single rate of exchange as quoted daily by the People's Bank of China (the "**PBOC**"). However, the unification of the exchange rates does not imply that the RMB may be readily convertible into US$ or other foreign currencies. All foreign exchange transactions continue to take place either through the PBOC or other banks authorized to buy and sell foreign currencies at the exchange rates quoted by the PBOC. Approval of foreign currency payments by the PBOC or other institutions requires submitting a payment application form together with suppliers' invoices, shipping documents and signed contracts.

(d) Foreign currency exchange rate risk

From July 21, 2005, the RMB is permitted to fluctuate within a narrow and managed band against a basket of certain foreign currencies. The depreciation (appreciation) of the RMB against US$ was approximately 5.0%, 1.6% and (6.5%) in the years ended December 31, 2018, 2019 and 2020, respectively.

(e) Interest rate risk

The Company is exposed to interest rate risk on its interest-bearing assets and liabilities. As part of its asset and liability risk management, the Company reviews and takes appropriate steps to manage its interest rate exposures on its interest-bearing assets and liabilities. The Company has not been exposed to material risks due to changes in market interest rates, and not used any derivative financial instruments to manage the interest risk exposure during the periods presented.

4. ACQUISITION AND DISPOSAL OF SUBSIDIARIES

Acquisitions in 2020

BJ JHC

On November 17, 2020, the Company through its subsidiaries, YF WOFE and 21Vianet Saturn, acquired 100% equity interests in Splendid Oriental Limited ("**Splendid**") which controls BJ JHC and its subsidiary BJ ST at a total cash consideration of RMB432,015 (US$66,209). Among which, RMB200,000 (US$30,651) is refundable if certain conditions are not achieved and is accounted as contingent consideration. The purpose of the transaction is to establish a new data center. As Splendid, BJ JHC and BJ ST do not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. As of December 31, 2020, certain conditions in relation to RMB200,000 (US$30,651) are not met and the corresponding asset is not recognized until the contingency is resolved. The carrying amount of the net identifiable assets were as follows:

	RMB	*US$*
Net assets acquired:		
Property and equipment, net	279,556	42,843
Operating permits *(Note 9)*	110,418	16,922
Customer contract *(Note 9)*	33,208	5,089
Operating lease right-of-use assets, net	112,398	17,226
Deferred tax assets	3,150	483
Other non-current assets	4,428	678
Cash and cash equivalents	30,319	4,647
Other current assets	8,833	1,354
Other current liabilities	(90,805)	(13,916)
Operating lease liabilities	(120,120)	(18,409)
Finance lease liabilities	(84,082)	(12,886)
Deferred tax liabilities	(55,288)	(8,473)
Total consideration in cash	232,015	35,558

As of December 31, 2020, the Company, through its subsidiaries, YF WOFE and 21Vianet Saturn, made prepayments amounting to RMB844,309 (US$129,396) to acquire potential equity interests for the purpose of establishing data centers. As the closing conditions have not been achieved and the prepayments were refundable if acquisition is not completed, the prepayments were recorded as other non-current assets on the consolidated balance sheet as of December 31, 2020.

SH Shuzhong

On June 30, 2020, as part of its business strategy to expand the existing hosting service, the Company through its subsidiary, SH Shilian, acquired 100% of the equity interests in SH Shuzhong which primarily provides internet data center service from a third party selling shareholder, for a total cash consideration of RMB36,667 (US$5,619). As SH Shuzhong is in operations and possess all the elements that are necessary to conduct normal operations as a business, such acquisition is accounted for as business combination. The initial accounting is incomplete as certain liabilities are provisional.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed as of the date of acquisition:

	RMB	*US$*
Property and equipment, net	348,475	53,406
Operating lease right-of-use assets, net	81,034	12,419
Customer contract *(Note 9)*	33,500	5,134
Purchased software	23	4
Deferred tax assets	14,848	2,275
Other non-current assets	1,685	258
Other current assets	44,774	6,862
Total assets acquired	524,339	80,358
Other current liabilities	(406,932)	(62,365)
Operating lease liabilities	(45,034)	(6,902)
Deferred tax liabilities	(41,169)	(6,309)
Total liabilities assumed	(493,135)	(75,576)
Net assets acquired	31,204	4,782
Purchase consideration	36,667	5,619
Goodwill	5,463	837

The revenue and net profit since the acquisition date included in the consolidated statement of operations for the year ended December 31, 2020 were RMB41,928 (US$6,426) and RMB5,579 (US$855), respectively. The goodwill, which is not tax deductible, is primarily attributable to synergies expected to be achieved from the acquisition.

Shulifang

On June 24, 2020, the Company through its subsidiary, SH Shilian, entered into a share purchase agreement to acquire 100% equity interests in Shulifang at a total cash consideration of RMB43,000 (US$6,590) in installment upon achievement of certain conditions which is accounted as contingent consideration and the corresponding asset will only be recognized when the contingency is resolved. The purpose is to establish a new data center. As Shulifang does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. The transaction was closed on July 21, 2020. As of December 31, 2020, the condition of the last contingent consideration amounted to RMB10,000 (US$1,533) was not yet met. The contingent consideration obligation is not accounted for until the contingency is resolved. Carrying amount of the net identifiable assets of Shulifang were as follows:

	RMB	*US$*
Net assets acquired:		
Operating permits *(Note 9)*	45,134	6,917
Operating lease right-of-use assets, net	15,206	2,330
Other non-current assets	15,409	2,362
Cash and cash equivalents	53	8
Other current assets	601	91
Operating lease liabilities	(15,206)	(2,330)
Other current liabilities	(16,913)	(2,592)
Deferred tax liabilities	(11,284)	(1,729)
Total consideration in cash	33,000	5,057

LF Huahai

On September 11, 2020 and October 28, 2020, the Company through its subsidiaries, SH Shilian and 21Vianet Venus International Investment Limited ("**21Vianet Venus**"), acquired 69.93% and 30.07% equity interests in LF Huahai at a total cash consideration of RMB59,500 (US$9,119) and RMB25,500 (US$3,908), respectively. The purpose is to establish a new data center with the acquired property. As LF Huahai does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. Carrying amount of the net identifiable assets of LF Huahai were as follows:

	RMB	*US$*
Net assets acquired:		
Operating permits *(Note 9)*	119,352	18,291
Operating lease right-of-use assets, net	183,174	28,073
Other non-current assets	27,524	4,218
Cash and cash equivalents	173	27
Other current assets	4,088	627
Other current liabilities	(35,600)	(5,456)
Operating lease liabilities	(183,873)	(28,180)
Deferred tax liabilities	(29,838)	(4,573)
Total consideration in cash	85,000	13,027

Acquisitions in 2019

BJ Shuhai

On January 2, 2019, the Company through its subsidiary, 21Vianet Beijing acquired 100% equity interests in BJ Shuhai at a total cash consideration of RMB98,255 in installment upon achievement of certain conditions which is accounted as contingent consideration and the corresponding asset will only be recognized when the contingency is resolved. The purpose is to establish a new data center with the acquired property. As BJ Shuhai does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets.

As of December 31, 2020, the condition of the last payment of the total consideration was not yet met. RMB30,000 in relation to the last payment was considered as a contingent consideration. The carrying amounts of the net identifiable assets of BJ Shuhai were as follows:

	RMB
Net assets acquired:	
Operating permits *(Note 9)*	100,380
Cash and cash equivalents	59
Other current assets	9,625
Right-of-use assets	129,937
Other current liabilities	(16,714)
Lease liabilities	(129,937)
Deferred tax liabilities	(25,095)
Total consideration in cash	68,255

Shihua Holdings 2

In March 2017, the Company and Warburg Pincus set up a joint venture, Shihua Holdings 2, with the equity interest of 49% and 51%, respectively (Note 12). The Company accounted for the investment in the joint venture under equity method investments for its ability to exercise significant influence.

In July 2019, the Company entered into restructuring agreements with Warburg Pincus and the transaction. Pursuant to the restructuring agreement, Shihua Holdings 2 transferred 100% of the equity interest in some subsidiaries at the consideration equivalent to the subsidiaries' paid-in capital to Warburg Pincus's wholly owned subsidiaries, Marble SH and Marble Holdings. Thereafter, Shihua Holdings 2 repurchased and cancelled all Warburg Pincus's shares in Shihua Holdings 2. Upon completion of restructuring on August 20, 2019, the Company became the sole shareholder in Shihua Holdings 2, including its wholly owned subsidiary, Hongming Logistics. As Shihua Holdings 2 and its subsidiaries do not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. The carrying amounts of the net identifiable assets of Shihua Holdings 2 at the acquisition date were as follows:

	RMB
Net assets acquired:	
Property and land use right	150,880
Construction-in-progress	465
Cash and cash equivalents	67,563
Other current assets	1,333,329
Other current liabilities	(1,203,894)
Deferred tax liabilities	(33,096)
Total consideration*	315,247

* *Consideration transferred is the carrying amount of the previously held 49% of equity interest.*

NT Chenghong

On December 24, 2019, the Company through its subsidiary, 21Vianet Beijing acquired 100% equity interests in NT Chenghong with total cash consideration of RMB80,000. The purpose of this transaction for the Company is to acquire the property to establish a new data center. As NT Chenghong does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. The carrying amounts of the net identifiable assets of NT Chenghong at the acquisition date were as follows:

	RMB
Net assets acquired:	
Construction-in-progress	158,471
Equipment	13
Cash and cash equivalents	129
Other current assets	11,840
Other current liabilities	(88,830)
Deferred tax liabilities	(1,623)
Total consideration in cash	80,000

5. ACCOUNTS AND NOTES RECEIVABLE, NET

Accounts and notes receivable and the allowance for doubtful debt consisted of the following:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Accounts receivable	722,840	913,902	140,062
Notes receivable	2,146	2,252	345
Allowance for doubtful debt	(67,828)	(68,921)	(10,563)
	657,158	847,233	129,844

As of December 31, 2019 and 2020, all accounts and notes receivable were due from third party customers. An analysis of the allowance for doubtful debt was as follows:

	For the years ended December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Balance at beginning of the year	70,970	67,828	10,395
Cumulative adjustment for changes in accounting policy	–	2,740	420
Additional provision charged to expense	485	2,393	367
Write-off of accounts receivable	(3,627)	(4,040)	(619)
Balance at the end of the year	67,828	68,921	10,563

6. SHORT-TERM INVESTMENTS

Short-term investments consisted of the following as of December 31, 2019 and 2020:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Time deposits	363,856	285,872	43,812

The Company recorded interest income related to its short-term investments amounting to RMB7,303, RMB8,687 and RMB5,712 (US$875) for the years ended December 31, 2018, 2019 and 2020, respectively, in the consolidated statements of operations.

7. PREPAID EXPENSES AND OTHER CURRENT ASSETS

Prepaid expenses and other current assets consisted of the following:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Prepaid expenses	878,155	884,156	135,503
Tax recoverables	570,913	879,237	134,749
Deposits	17,391	31,774	4,870
Loan to third parties	73,557	19,107	2,928
Interest receivables	14,359	1,484	227
Staff advances	1,866	968	148
Others	61,908	49,458	7,580
	1,618,149	1,866,184	286,005

Prepaid expenses mainly represented the unamortized portion of prepayments made to Microsoft for the cloud computing services, the prepayments to telecommunication operators for bandwidth, data centers or cabinets and the prepayments for office expense.

8. PROPERTY AND EQUIPMENT, NET

Property and equipment, including those held under finance leases, consisted of the following:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
At cost:			
Property	899,609	1,511,429	231,637
Leasehold improvements	1,458,749	2,609,828	399,974
Computer and network equipment	3,539,709	4,899,577	750,893
Optical fibers	142,723	142,723	21,873
Office equipment	22,102	26,845	4,114
Motor vehicles	2,308	2,668	409
	6,065,200	9,193,070	1,408,900
Less: Accumulated depreciation	(2,514,800)	(3,285,138)	(503,469)
Impairment	–	(35,793)	(5,486)
	3,550,400	5,872,139	899,945
Construction-in-progress	1,893,165	2,234,286	342,419
	5,443,565	8,106,425	1,242,364

Depreciation expense was RMB566,491, RMB696,528 and RMB908,387 (US$139,216) for the years ended December 31, 2018, 2019 and 2020, respectively, and were included in the following captions:

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Cost of revenues	520,791	644,108	850,746	130,382
Sales and marketing expenses	986	2,107	2,399	368
General and administrative expenses	28,727	30,110	29,711	4,553
Research and development expenses	15,987	20,203	25,531	3,913
	566,491	696,528	908,387	139,216

The carrying amounts of the Company's property and equipment held under finance leases at respective balance sheet dates were as follows:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Property	365,353	921,970	141,298
Computer and network equipment	639,311	1,019,588	156,259
Optical fibers	142,723	137,924	21,138
	1,147,387	2,079,482	318,695
Less: Accumulated depreciation	(408,196)	(661,796)	(101,425)
	739,191	1,417,686	217,270
Construction-in-progress	659,014	92,545	14,183
	1,398,205	1,510,231	231,453

Depreciation of property, computer and network equipment and optical fibers under finance leases was RMB170,264, RMB216,664 and RMB255,458 (US$39,151) for the years ended December 31, 2018, 2019 and 2020, respectively.

The carrying amounts of property and equipment pledged by the Company to secure borrowings (Note 13) granted to the Company at the respective balance sheet dates were as follows:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Property	137,585	264,784	40,580
Leasehold improvements	66,162	90,947	13,938
Computer and network equipment	–	40,871	6,264
Construction-in-progress	–	238,771	36,593

9. INTANGIBLE ASSETS, NET

The following table presented the Company's intangible assets as of the respective balance sheet dates:

	Purchased software	Radio spectrum license	Operating Permits	Contract backlog	Customer relationships	Licenses	Supplier relationships	Trade names	Customer contract	Non-compete agreements	Internal use software	Total
	RMB	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*
Intangible assets, net January 1, 2019	47,254	72,908	–	5,162	112,961	3,883	17,070	90,591	–	44	5,440	355,313
Additions	11,128	–	100,380	–	–	–	–	–	–	–	13,189	124,697
Foreign currency translation difference	413	1,200	–	–	–	–	–	–	–	–	–	1,613
Amortization expense	(16,068)	(8,985)	(3,136)	(5,162)	(24,921)	(385)	(3,074)	(5,813)	–	(44)	(3,440)	(71,028)
Intangible assets, net December 31, 2019	42,727	65,123	97,244	–	88,040	3,498	13,996	84,778	–	–	15,189	410,595
Additions	12,893	–	274,904	–	–	–	–	–	66,708	–	8,684	363,189
Foreign currency translation difference	(32)	(4,213)	–	–	–	–	–	–	–	–	–	(4,245)
Amortization expense	(13,689)	(8,403)	(5,189)	–	(24,854)	(385)	(3,074)	(5,813)	(3,602)	–	(7,681)	(72,690)
Impairment	–	(38,654)	–	–	–	–	–	–	–	–	–	(38,654)
Intangible assets, net December 31, 2020	41,899	13,853	366,959	–	63,186	3,113	10,922	78,965	63,106	–	16,192	658,195
Intangible assets, net December 31, 2020 (US$)	6,421	2,123	56,239	–	9,684	477	1,674	12,102	9,671	–	2,482	100,873

Contract backlog relate to the order placed by the customers that have yet to be delivered at the acquisition date. Customer relationships relate to the relationships that arose as a result of existing customer agreements acquired and is derived from the estimated net cash flows that are expected to be derived from the expected renewal of these existing customer agreements after subtracting the estimated net cash flows from other contributory assets. Customer contract related to existing customer agreements acquired and is derived from the estimated net cash flows that are expected to be derived over the contractual period of the existing customer agreements after subtracting the estimated net cash flows from other contributory assets. Licenses mainly represented the telecommunication service license in relation to virtual private network services. Supplier relationships relate to the relationships that arose as a result of existing bandwidth supply agreements with certain network operators, which were valued using a replacement cost method given the relative ease of replacement. Trade names mainly relate to the trade names of Dermot Entities. Operating permits relate to the government authorized high-capacity utilities from the assets acquisitions (Note 4).

The intangible assets are amortized using the straight-line method, which is the Company's best estimate of how these assets will be economically consumed over their respective estimated useful lives ranging from 1 to 36 years.

Amortization expenses were approximately RMB68,115, RMB71,028 and RMB72,690 (US$11,140) for the years ended December 31, 2018, 2019 and 2020, respectively.

The annual estimated amortization expenses for the intangible assets for each of the next five years are as follows:

	RMB	*US$*
2021	78,149	11,977
2022	63,039	9,661
2023	41,574	6,371
2024	31,923	4,892
2025	27,424	4,203
	242,109	37,104

10. LAND USE RIGHTS, NET

Land use rights held by the Company represent operating lease prepayments and are amortized over the remaining term of the respective rights.

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Cost	249,804	278,138	42,627
Accumulated amortization	(16,650)	(22,765)	(3,489)
Land use rights, net	233,154	255,373	39,138

The carrying amounts of land use rights pledged by the Company to secure borrowings (Note 13) granted to the Company at the respective balance sheet dates were as follows:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Land use rights	15,989	141,000	21,609

11. GOODWILL

The changes in the carrying amount of goodwill were as follows:

	For the years ended December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Balance as of January 1	989,530	989,530	151,652
Additions	–	5,463	837
Balance as of December 31	989,530	994,993	152,489

As of December 31, 2018, 2019 and 2020, the Company has performed a qualitative assessment for hosting and related services and no impairment loss was recorded.

12. LONG-TERM INVESTMENTS, NET

The Company's long-term investments consisted of the following:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Equity investments without readily determinable fair values	43,824	17,137	2,626
Equity method investments	124,116	116,667	17,880
Available-for-sale debt investments	1,713	1,713	263
	169,653	135,517	20,769

Equity investments without readily determinable fair values

The Company disposed equity investments without readily determinable fair value at a consideration of RMB13,122 and RMB13,500 (US$2,069) in 2019 and 2020, respectively.

The investment income comprised of dividend income of RMB406, RMB461 and RMB607 (US$93), and disposal gain of RMB20,496, RMB5,536 and RMB257 (US$39) for the years ended December 31, 2018, 2019 and 2020, respectively.

The Company recorded an impairment loss of long-term investment amounting nil, nil and RMB13,030 (US$1,997) for the years ended December 31, 2018, 2019 and 2020, respectively.

Equity method investments:

	As of December 31, 2018			Increase (decrease) during the year ended December 31, 2019			As of December 31, 2019		
	Cost of investments *RMB*	Share equity gain (loss) *RMB*	Investments in equity investee *RMB*	Cost of investments *RMB*	Share equity gain (loss) *RMB*	Distribution/ derecognize of share equity (gain) loss *RMB*	Cost of investments *RMB*	Share equity gain (loss) *RMB*	Investments in equity investee *RMB*
Yizhuang Fund	101,000	25,681	126,681	–	1,671	(20,200)	101,000	7,152	108,152
Shihua DC Holdings	366,623	(33,658)	332,965	(337,555)	(17,718)	22,308	29,068	(29,068)	–
Jingliang Inter Cloud	6,000	(34)	5,966	–	(1,894)	–	6,000	(1,928)	4,072
Jingliang Century Cloud	4,000	–	4,000	–	–	–	4,000	–	4,000
Huaye Cloud	23,333	(6,319)	17,014	(23,333)	(11,534)	17,853	–	–	–
ZJK Energy	5,907	(2,157)	3,750	–	212	–	5,907	(1,945)	3,962
WiFire Entities	15,000	(15,000)	–	5,000	(5,000)	–	20,000	(20,000)	–
Qidi Chengxin	–	–	–	3,930	–	–	3,930	–	3,930
	521,863	(31,487)	490,376	(351,958)	(34,263)	19,961	169,905	(45,789)	124,116

	As of December 31, 2019			Increase (decrease) during the year ended December 31, 2020			As of December 31, 2020			
	Cost of investments *RMB*	Share equity gain (loss) *RMB*	Investments in equity investee *RMB*	Cost of investments *RMB*	Share equity gain (loss) *RMB*	Distribution/ derecognize of share equity (gain) loss *RMB*	Cost of investments *RMB*	Share equity gain (loss) *RMB*	Investments in equity investee *RMB*	Investments in equity investee *US$*
Yizhuang Fund	101,000	7,152	108,152	–	12,254	(17,723)	101,000	1,683	102,683	15,737
Shihua DC Holdings	29,068	(29,068)	–	(29,068)	–	29,068	–	–	–	–
Jingliang Inter Cloud	6,000	(1,928)	4,072	–	(903)	–	6,000	(2,831)	3,169	486
Jingliang Century Cloud	4,000	–	4,000	–	–	–	4,000	–	4,000	613
ZJK Energy	5,907	(1,945)	3,962	–	(803)	–	5,907	(2,748)	3,159	484
WiFire Entities	20,000	(20,000)	–	–	–	–	20,000	(20,000)	–	–
Qidi Chengxin	3,930	–	3,930	–	(274)	–	3,930	(274)	3,656	560
	169,905	(45,789)	124,116	(29,068)	10,274	11,345	140,837	(24,170)	116,667	17,880

The Company through its subsidiary, 21Vianet Beijing, entered into an agreement to invest in the Yizhuang Venture Investment Fund ("**Yizhuang Fund**") as a limited partner since April 2012 with capital injection of RMB101,000 and held 27.694% of the investee as of December 31, 2018, 2019 and 2020. Given the Company holds more than three percent interest in the Yizhuang Fund as a limited partner, the investment is accounted for under the equity method as prescribed in ASC Subtopic 323-10, *Investments – Equity Method* ("**ASC 323-10**"). In December 2019 and 2020, the Company received distribution from Yizhuang Fund as return on investments with an amount of RMB20,200 and RMB17,723 (US$2,716), respectively.

In March 2017, the Company through its subsidiary, 21Vianet HK, and Warburg Pincus jointly set up two JVs, Shihua Holdings 2 and Shihua Investment Management (collectively, "**Shihua DC Holdings**"). The Company injected capital of RMB133,639 and RMB13,537 to acquire 49% of equity interest in Shihua Holdings 2 and Shihua Investment Management, respectively. In the year of 2018, the Company increased the capital injection with the amount of RMB203,916 and RMB15,531 in Shihua Holdings 2 and Shihua Investment Management, respectively. In July 2019, the Company entered into restructuring agreements with Warburg Pincus. Pursuant to the restructuring agreements, Shihua Holdings 2 repurchased and cancelled Warburg Pincus's share in Shihua Holdings 2. Upon completion of restructuring on August 20, 2019, Shihua Holdings 2 became a wholly-owned subsidiary of the Company (Note 4), thus RMB337,555 and RMB22,308 of cost of investment and accumulative share equity loss in Shihua Holdings 2 were derecognized as of December 31, 2019. Pursuant to the restructuring agreements, the Company and Warburg Pincus would inject additional capital on pro-rata basis to liquidate and terminate Shihua Investment Management. Therefore, the Company recognized additional share equity loss in Shihua Investment Management with an amount of RMB16,290 as of December 31, 2019.

In September 2017, after the disposal of 66.67% equity interest in the WiFire Entities, the Company held the remaining 33.33% equity interest in the WiFire Entities, which is accounted for equity method investment at fair value at the disposal date. In 2019, the Company increased capital injection of RMB5,000 in the WiFire Entities. As of December 31, 2020, the equity method investment balance is reduced to nil after the pickup of loss in the WiFire Entities.

In January 2018, the Company through its subsidiary, 21Vianet Beijing, and a third company jointly set up Beijing Jingliang Interconnected Cloud Technology Inc. ("**Jingliang Inter Cloud**") and Jingliang Century Cloud Technology Inc. ("**Jingliang Century Cloud**"). The Company injected capital of RMB6,000 and RMB4,000 and the Company held 60% and 40% of equity interest in Jingliang Inter Cloud and Jingliang Century Cloud, respectively. Based on the article of association, the Company cannot exercise control over relevant activities of the investee, but it has the ability to exercise significant influence over Jingliang Inter Cloud's operation and financial decisions.

In March 2018, the Company through its subsidiary, 21Vianet Beijing, acquired 50% equity interest in Guangdong Huaye Cloud Inc. ("**Huaye Cloud**") with an amount of RMB23,333, with the ability to exercise significant influence. In November 2019, the Company disposed all its equity interest in Huaye Cloud with a total cash consideration of RMB23,333 and recognized investment loss with an amount of RMB17,853 and disposal gain with an amount of RMB17,853.

In December 2019, the Company through its subsidiary, 21Vianet Beijing, and a third company jointly set up Chengdu Qidi Chengxin Education Limit ("**Qidi Chengxin**"). The Company injected capital of RMB3,930 and hold 59% of equity interest in Qidi Chengxin. Based on the article of association, the Company cannot exercise control over relevant activities of the investee, but it has the ability to exercise significant influence over operation and financial decisions.

13. BORROWINGS

Borrowings were as follows as of the respective balance sheet dates:

	As of December 31,		
	2019	**2020**	
	RMB	*RMB*	*US$*
Short-term bank borrowings	234,500	34,000	5,211
Long-term bank borrowings, current portion	32,500	68,500	10,498
Other long-term borrowings, current portion	–	111,828	17,138
	267,000	214,328	32,847
Long-term bank borrowings, non-current portion	79,500	605,119	92,738
Other long-term borrowings, non-current portion	–	281,877	43,200
Total borrowings	346,500	1,101,324	168,785

The short-term borrowings outstanding as of December 31, 2019 and 2020 bore a weighted average interest rate of 4.56% and 4.46% per annum, respectively, and were denominated in RMB. These borrowings were obtained from financial institutions and have terms of one year. The long-term borrowings (including current portion) outstanding as of December 31, 2019 and 2020 bore a weighted average interest rate of 5.28% and 5.61% per annum, respectively, and were denominated in RMB. These loans were obtained from financial institutions located in the PRC.

As of December 31, 2019 and 2020, unused loan facilities for bank and other borrowings amounted to RMB326,068 and RMB1,574,556 (US$241,311), respectively.

Borrowings as of December 31, 2019 and 2020 were secured by the following:

December 31, 2019

Short-term bank borrowings *(RMB)*	**Secured by**
34,500	Unsecured borrowings.
200,000	Secured by restricted cash of RMB215,816.
234,500	

Long-term bank borrowings (including current portion) *(RMB)*	**Secured by**
112,000	Secured by a subsidiary's fixed assets and land-use right with net book value of RMB203,747 and RMB15,989, respectively (Note 8/Note 10).
112,000	

December 31, 2020

Short-term bank borrowings *(RMB)*	**Secured by**
34,000	Unsecured borrowings.
34,000	

Long-term borrowings (including current portion) *(RMB)*	Secured by
404,781	Secured by subsidiary's property and equipment and land-use right with net book value of RMB505,004 (US$77,395) and RMB40,034 (US$6,135), respectively (Note 8/Note 10).
271,861	Secured by a subsidiary's property and equipment and land-use right with net book value of RMB130,369 (US$19,980) and RMB100,966 (US$15,474), respectively (Note 8/Note 10), and a subsidiary's stock.
190,682	Unsecured borrowing.
100,000	Secured by a subsidiary's stock and the restricted cash of RMB104,400 (US$16,000).
100,000	Secured by a subsidiary's stock.
1,067,324	

14. ACCRUED EXPENSES AND OTHER PAYABLES

The components of accrued expenses and other payables were as follows:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Payables for purchase of property, equipment and software	554,693	1,148,742	176,052
Payroll and welfare payables	179,195	204,732	31,377
Amounts due to the original shareholders for acquired entities*	–	66,466	10,186
Payables for acquisitions	47,805	47,805	7,326
Accrued service fees	52,746	47,572	7,291
Payables for office supplies and utilities	24,562	38,485	5,898
Interest payables	58,961	37,799	5,793
Value-added tax and other taxes payable	14,523	10,473	1,605
Others	46,450	29,489	4,520
	978,935	1,631,563	250,048

* *This represented the balance of unpaid cash consideration and the payables in other current liabilities due to original shareholders related to the acquisition of SH Shuzhong and LF Huahai (Note 4).*

15. LEASES

Leases are classified as operating leases or finance leases in accordance with ASC 842. The Company's operating leases mainly related to building, office facilities and equipment and the rights to use the land in the PRC. For leases with terms greater than 12 months, the Company records the related asset and liability at the present value of lease payments over the term. Certain leases include rental escalation clauses, renewal options and/or termination options, which are factored into the Company's determination of lease payments when appropriate.

	As of December 31,	
	2019	2020
Weighted average remaining lease term:		
Operating lease	9.4 years	12.2 years
Finance lease	15.3 years	14.6 years
Weighted average discount rate:		
Operating lease	6.09%	6.56%
Finance lease	8.43%	8.63%

Lease cost for finance leases capitalized were immaterial for the years ended December 31, 2019 and 2020.

	For the year ended December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Lease cost			
Finance lease cost:			
Depreciation	216,664	255,458	39,151
Interest expenses	120,185	130,196	19,953
Operating lease cost	214,795	478,805	73,380
Total lease cost	551,644	864,459	132,484

Short-term lease cost and variable lease cost for operating leases and finance leases were immaterial for the years ended December 31, 2019 and 2020. Other information related to leases was as follows:

	For the year ended December 31,		
	2019	**2020**	
	RMB	*RMB*	*US$*
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash payments for operating leases	193,174	477,189	73,132
Financing cash payments for finance leases	333,614	376,232	57,660

Future lease payments under operating leases and finance leases as of December 31, 2020 were as follows:

	Operating Leases		**Finance Leases**	
	RMB	*US$*	*RMB*	*US$*
2021	415,892	63,738	542,268	83,106
2022	221,680	33,974	293,643	45,003
2023	146,115	22,393	195,320	29,934
2024	103,891	15,922	124,389	19,063
2025	70,494	10,804	95,054	14,568
2026 and thereafter	1,115,382	170,940	1,678,170	257,191
Total future lease payments	2,073,454	317,771	2,928,844	448,865
Less: Imputed interest	(728,543)	(111,654)	(1,286,619)	(197,183)
Present value of future lease payments*	1,344,911	206,117	1,642,225	251,682

* *Present value of future operating lease payments consisted of current portion of operating lease liabilities, non-current portion of operating lease liabilities and operating lease liabilities in amounts due to related parties, amounting to RMB452,272 (US$69,314), RMB645,499 (US$98,927) and RMB247,140 (US$37,876) for the year ended December 31, 2020, respectively.*

Present value of future finance lease payments consisted of current portion of finance lease liabilities, non-current portion of finance lease liabilities and finance lease liabilities in amounts due to related parties, amounting to RMB403,843 (US$61,892), RMB688,128 (US$105,460) and RMB550,254 (US$84,330) for the year ended December 31, 2020, respectively.

16. BONDS PAYABLE

On April 15, 2019, the Company issued and sold bonds with an aggregate principle amount of US$300,000 at a coupon rate of 7.875% per annum ("**2021 Notes**"). The 2021 Notes will mature on October 15, 2021. The 2021 Notes were listed and quoted on the SGX-ST. Interest on the 2021 Notes is payable semi-annually in arrears on April 15 and October 15 in each year, beginning from October 15, 2019.

Net proceeds from 2021 Notes after deducting issuance costs were RMB1,976,474. The 2021 Notes are unsecured and rank senior in right of payment to any of the Company's indebtedness that is expressly subordinated to the bonds; equal in right of payment to any of the Company's liabilities that are not so subordinated, including the 2020 Notes; effectively junior in the right of payment to any secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including accounts payables) of the Company's subsidiaries and Consolidated VIEs.

On April 16, 2019, the Company repurchased US$150,839 in principal amount of 2020 Notes, representing approximately 50.28% of the US$300,000 total aggregate principal amount of the 2020 Notes outstanding as at such date. On August 12, 2019, the Company repurchased US$18,000 in principal amount of 2020 Notes. The remaining outstanding 2020 Notes with principal amount of US$131,161 continue to be the obligation of the Company. The Company recognized loss on debt extinguishment of RMB18,895 during the year ended December 31, 2019. On August 4, 2020, the Company repaid the remaining outstanding 2020 Notes with principal amount of US$131,161.

The following table summarizes the aggregate required repayments of the principal amounts of the Company's long-term borrowings, including the bonds payable, bank and other borrowings (Note 13) in the succeeding five years and thereafter:

	RMB	*US$*
For the years ending December 31,		
2021	2,158,266	330,769
2022	222,796	34,145
2023	152,544	23,378
2024	189,988	29,117
2025	125,244	19,194
2026 and thereafter	222,119	34,041

17. PERPETUAL CONVERTIBLE PREFERRED SHARES

In June 2020, the Company issued 150,000 Series A perpetual convertible preferred shares (the "**Series A Preferred Shares**") at the subscription price of 1,000 US dollars per subscribed share for a total cash consideration of US$150,000.

The significant terms of the Series A Preferred Shares are summarized as follows:

Dividends

From and after the original issuance date, cumulative dividends on each Series A Preferred Share will accrue in arrears at the dividend rate of 4.5% per annum on the original issuance price of US$1,000 per subscribed share. All accrued dividends on any Series A Preferred Share will be paid in cash, when, as and if declared by the Board of Directors out of funds legally available therefor or upon a liquidation of the Company.

Holders of the Series A Preferred Shares will also be entitled to receive any dividends declared by the Board of Directors on a pro rata basis with the ordinary shares determined on an as-converted basis. The dividends or distributions shall be distributed among all holders of ordinary shares and Series A Preferred Shares in proportion to the number of ordinary shares that would be held by each such holder if all Series A Preferred Shares had been converted to ordinary shares as of the record date fixed for determining those entitled to receive such distribution.

For dividends on cumulative preferred stock classified in permanent equity, dividends are not recognized until declared by the Board of Directors. As of December 31,2020, no dividend was declared by the Company and the cumulative dividend was RMB22,806 (US$3,495).

Liquidation preference

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company, the holders of Series A Preferred Shares will be entitled to be paid out of the assets of the Company available for distribution to its shareholders before any distribution or payment out of the assets of the Company will be made to the holders of ordinary shares at a preferential amount in cash equal to the greater of (i) the aggregate original issuance price of US$1,000 per Series A Preferred Shares, plus any unpaid, accrued and accumulated dividends on all such Series A Preferred Shares (whether or not declared) and (ii) the aggregate value that such holders of Series A Preferred Shares would have received had all holders of Series A Preferred Shares, immediately prior to such Liquidation, converted all Series A Preferred Shares then outstanding (together with any unpaid, accrued and accumulated dividends thereon) into Class A ordinary shares at the applicable conversion price then in effect.

If the Company has insufficient assets to pay the holders of the Series A Preferred Shares the full preferential amount, (a) the holders of the Series A Preferred Shares will share ratably in any distribution of the remaining assets of the Company in proportion to the respective full preferential amounts which would otherwise be payable to each such holder in full, and (b) the Company will not make or agree to make, or set aside for the benefit of the holders of ordinary shares, any payments to the holders of ordinary shares.

Conversion

Series A Preferred Shares can be converted at any time at the option of the holder into Class A ordinary shares by dividing the original issuance price plus any unpaid, accrued and accumulated dividends up to, but excluding, the conversion date by the conversion price in effect immediately prior to such conversion. Series A Preferred Shares will be mandatorily converted into Class A ordinary shares at any time after six months from the original issuance date when the daily volume-weighted average price of the ADS ("**VWAP**") of certain period equals or exceeds the 200% of the conversion price per ADS ("**Conversion Threshold**").

Conversion price is initially, US$2.8333 per Class A Ordinary Shares or US$17.00 per ADS and is subject to additional adjustments if the Company makes certain dilutive issuances of shares.

Voting

Each Series A Preferred Shares holder will be entitled to a number of vote equal to the number of Class A ordinary shares then issuable upon its conversion into Class A ordinary shares at the record date for determination of the shareholders entitled to vote on such matters, or, if no such record date is established, at the date when such vote is taken or any written consent of shareholders is solicited.

Accounting for the Series A Preferred Shares

The Series A Preferred Shares are classified as permanent equity and initially recorded at the issuance price at the time of closing. There were no embedded features that qualified for bifurcation and separate accounting in accordance with ASC 815-10, Derivatives and Hedging. As the time of closing, beneficial conversion features with the amount of RMB470,643 (US$72,129) was recorded as a reduction to the respective preferred shares with an offsetting credit to additional paid-in capital. This amount was immediately accreted back as a deemed distribution to Series A perpetual convertible preferred shareholders.

18. CONVERTIBLE PROMISSORY NOTES

During the year ended December 31, 2020, a group of investors led by Goldman Sachs Asia Strategic Pte. Ltd. (the "**Purchasers**") subscribed and paid cash consideration of US$200,000 in aggregate for the Company's convertible promissory notes (the "**Notes**"). The Notes will mature in five years and, bear interest at the rate of 2% per annum from the issuance date which will be payable semiannually in arrears in cash.

Conversion

Purchasers have the option to convert all or a portion of the outstanding Notes and any accrued and unpaid interest, into ADSs at the conversion price at any time. The conversion price will initially be US$12.00 per ADS or will be subject to customary adjustments when the decrease in VWAP exceeds certain threshold. In addition, the conversion price will be adjusted in the event when the Company makes certain dilutive issuances of shares.

Redemption upon maturity

Unless previously redeemed or converted, the Company shall redeem the Notes on the maturity date in an amount equal to the sum of (i) 115% of the then outstanding principal amount of the Notes and (ii) the interest accrued but unpaid on the maturity date. The Company may not redeem the Notes at its option prior to the maturity date.

Early redemption at the option of the Purchasers

If any portion of the outstanding principal amount of the Notes has not been converted by the third anniversary of the date of issuance of the Notes, the Purchasers at their sole discretion will have the right to require the Company to redeem, in whole or in part, the outstanding principal amount of the Notes which has not been converted previously in an amount equal to the sum of (i) 109% of the outstanding principal amount and (ii) the interest accrued but unpaid on the outstanding principal amount.

The Company elected to account for the Notes at fair value as a whole. Issuance costs including underwriting commissions and offering expenses were approximately RMB18,932 (US$2,901), which were recognized in earnings as incurred.

In August and December 2020, Purchasers of the Notes exercised the right to convert 12,499,998 and 11,210,142 newly issued Class A ordinary shares at the conversion price of US$12 per ADS. Upon conversion, the fair value of converted portion was RMB720,547 (US$110,429) and issuance costs were approximately RMB2,939 (US$450), which were credited to capital accounts with the changes in the fair value up to the conversion date recorded in earning.

The interest expense on the convertible promissory was recorded based on the stated rate of 2% in the interest expense within the consolidated statements of operations. The Company elected the fair value option in accordance with ASC 825 to subsequently remeasure the Notes.

As of December 31, 2020, the fair value of the Notes was RMB3,014,057 (US$461,924), and the changes in fair value of convertible promissory notes of RMB2,544,220 (US$389,919) was recognized in the changes in the fair value of convertible promissory notes in the consolidated statement of operations for the year ended December 31, 2020. The fair value changes related to instrument-specific credit risk is nil for the year ended December 31, 2020.

19. DEFERRED GOVERNMENT GRANTS

During the years ended December 31, 2018, 2019 and 2020, the Company received RMB500, nil and nil, respectively, in government grants from the relevant PRC government authorities for the use in construction of property and equipment. These grants are initially deferred and subsequently recognized in the consolidated statements of operations when the Company has complied with the conditions or performance obligations attached to the related government grants, if any, and the grants are no longer refundable. Grants that subsidize the construction cost of property and equipment are amortized over the life of the related assets as a reduction of the associated depreciation expense.

Movements of deferred government grants were as follows:

	For the years ended December 31,			
	2018	**2019**	**2020**	
	RMB	*RMB*	*RMB*	*US$*
Balance at beginning of the year	22,435	15,792	8,501	1,303
Additions	500	–	–	–
Recognized as a reduction of depreciation expense	(7,143)	(7,291)	(2,327)	(357)
Balance at end of the year	15,792	8,501	6,174	946

20. TREASURY STOCK

For the years ended December 31, 2018, 2019 and 2020, the Company repurchased the number of nil, 242,830 and nil ADSs pursuant to the share repurchase plans.

21. ACCUMULATED OTHER COMPREHENSIVE INCOME

The changes in accumulated other comprehensive income by component, net of tax of nil, were as follows:

	Foreign currency translation
	RMB
Balance as of January 1, 2018	(2,673)
Current year other comprehensive income	88,652
Balance as of December 31, 2018	85,979
Current year other comprehensive loss	(8,075)
Balance as of December 31, 2019	77,904
Current year other comprehensive loss	(133,439)
Balance as of December 31, 2020	(55,535)
Balance as of December 31, 2020, in US$	(8,511)

22. MAINLAND CHINA EMPLOYEE CONTRIBUTION PLAN

As stipulated by the regulations of the PRC, full-time employees of the Company in the PRC participate in a government-mandated multiemployer defined contribution plan organized by municipal and provincial governments. Under the plan, certain pension benefits, medical care, unemployment insurance, employee housing fund and other welfare benefits are provided to employees. The Company is required to make contributions to the plan based on certain percentages of employees' salaries. The total expenses for the plan were RMB122,362, RMB121,266 and RMB77,982 (US$11,951) for the years ended December 31, 2018, 2019 and 2020, respectively.

23. SHARE-BASED COMPENSATION

Option granted to employees

In order to provide additional incentives to employees and to promote the success of the Company's business, the Company adopted a share incentive plan in 2010 (the "**2010 Plan**"). Under the 2010 Plan, the Company may grant options and RSUs to its employees, directors and consultants to purchase an aggregate of no more than 39,272,595 ordinary shares of the Company. The 2010 Plan was approved by the Board of Directors and shareholders of the Company on July 16, 2010. The 2010 Plan is administered by the Board of Directors or the Compensation Committee of the Board as set forth in the 2010 Plan (the "**Plan Administrator**"). All share options to be granted under the 2010 Plan have a contractual term of ten years and generally vest over 3 to 4 years in the grantee's option agreement.

In order to further promote the success and enhance the value, the Company adopted a share incentive plan in 2014 (the "**2014 Plan**"). Under the 2014 Plan, the Company may issue an aggregate of no more than 20,461,380 shares ("**Maximum Number**") and such Maximum Number should be automatically increased by a number that is equal to 15% of the number of new shares issued by the Company from time to time. The maximum aggregate number of ordinary shares to be issued under 2014 Plan was subsequently amended to 39,606,817, as approved by the Board of Directors and shareholders of the Company on October 30, 2015. All share options, restricted shares and restricted share units to be granted under the 2014 Plan have a contractual term of ten years and generally vest over 3 to 4 years in the grantee's option agreement.

In order to continuously attract and retain talents, the Company adopted a share incentive plan in 2020 (the "**2020 Plan**"). Under the 2020 Plan, the Company is authorized to issue an aggregate of 46,560,708 Class A ordinary shares of the Company (equal to the sum of (i) 5% of the Company's share capital as of the date hereof, calculated on an as-converted basis by taking into consideration all the convertible promissory notes issued and to be issued by the Company, and (ii) 7,562,532 Class A ordinary shares reserved under the "2010 Plan" and "2014 Plan" for future grants) will be reserved for future issuance. After adoption of the 2020 Plan, the Company will cease to grant any new awards under the 2010 Plan and 2014 Plan while the 2010 Plan and 2014 Plan and outstanding awards granted thereunder will remain effective and can be amended by the Company from time to time pursuant to the applicable terms thereto. The 2020 Plan was approved by the Board of Directors and shareholder of the Company on May 13, 2020.

The Company granted 487,368, 464,120 and 314,842 RSUs in 2018, 2019 and 2020, respectively, with performance conditions whereby a predetermined number will vest upon the assignment of an annual performance review in accordance with predetermined performance targets for the grantees over a one or four-year period. As it is probable for the Company to estimate the annual performance review ratings for the individual grantees, the Company recognized the related compensation expenses using the accelerated recognition method.

The Company granted 2,188,226, 64,000 and 1,848,701 RSUs in 2018, 2019 and 2020, respectively, with performance conditions whereby a predetermined number will vest upon with the achievement of predetermined operation performance targets for the Company. As it is probable for the Company to estimate the operation performance for the Company, the Company recognized the related compensation expenses using the accelerated recognition method.

The Company granted 547,056, 16,000 and nil RSUs in the years ended 2018, 2019 and 2020, respectively, with market conditions whereby a predetermined number will vest upon with the achievement of predetermined share price targets for the Company. The probability to achieve market condition is reflected in the grant date fair value of the award and thus compensation cost is recognized when the requisite service is rendered using the accelerated method.

The compensation expenses related to remaining unvested share options shall be recognized over the remaining requisite service period or the performance review period. As of December 31, 2020, options to purchase 508,866 of ordinary shares were outstanding.

The following table summarized the Company's employee share option activity under the 2010 Plan:

	Number of options	**Weighted average exercise price** *(US$)*	**Weighted average remaining contractual term** *(Years)*	**Aggregate intrinsic value** *(US$)*
Outstanding, January 1, 2020	1,445,345	0.51	1.3	–
Exercised	(459,168)	0.69		
Forfeited	(477,311)	0.53		
Outstanding, December 31, 2020	508,866	0.33	0.8	2,774
Vested and expected to vest at December 31, 2020	508,866	0.33	0.8	2,774
Exercisable as of December 31, 2020	508,866	0.33	0.8	2,774

The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying awards and the fair value of the underlying stock at each reporting date, for those awards that have an exercise price below the estimated fair value of the Company's shares. As of December 31, 2020, the Company had options outstanding to purchase an aggregate of 508,866 shares with an exercise price below the fair value of the Company's shares, resulting in an aggregate intrinsic value of RMB18,100 (US$2,774).

The aggregate fair value of the outstanding options at the grant date was determined to be RMB6,014 (US$922) as of December 31, 2020 and such amount is recognized as share-based compensation expenses using the straight-line method for all employee share options granted with graded vesting based on service conditions and the accelerated method for share options granted with graded vesting based on performance conditions. The total fair value of share options exercised during the years ended December 31, 2018, 2019 and 2020 was US$239, US$42 and US$594, respectively. The aggregate intrinsic value of options exercised during the years ended December 31, 2018, 2019 and 2020 was US$248, US$22, and US$2,336, respectively.

As of December 31, 2020, the Company has recorded all the share-based compensation expenses in relation to outstanding share options.

The following table summarized the Company's RSUs activity under the 2014 and 2020 Plan:

	Number of RSUs	Weighted average grant date fair value	Weighted average remaining contractual life	Aggregate intrinsic value
		(US$)	*(Years)*	*(US$)*
Unvested, January 1, 2020	2,696,129	6.83	7.8	
Granted	2,163,543	22.62		
Vested	(433,905)	8.91		
Forfeited	(333,310)	6.59		
Unvested, December 31, 2020	4,092,457	14.95	8.2	141,967

Share-based compensation expenses for RSUs are measured based on the closing fair market value of the Company's ADS on the date of grant and the reporting date for liability classified RSUs, respectively. The aggregate fair value of the unvested RSUs as of December 31, 2020 was RMB926,335 (US$141,967), and such amount is recognized as share-based compensation expenses using the straight-line method for the RSUs with graded vesting based on service conditions and the accelerated method for the RSUs with graded vesting based on performance conditions, market conditions and share-settled bonuses. The weighted average grant date fair value of RSUs granted during the years ended December 31, 2018, 2019 and 2020 was US$6.39, US$7.67 and US$22.62, respectively. The total fair value of RSUs vested during the years ended December 31, 2018, 2019 and 2020 was US$9,422, US$6,185 and US$3,866, respectively.

As of December 31, 2020, there was RMB219,998 (US$33,716) of unrecognized share-based compensation expenses related to RSUs which is expected to be recognized over a weighted average vesting period of 2.5 years. Total unrecognized share-based compensation expenses may be adjusted for future changes when actual forfeitures incurred.

Total share-based compensation expenses relating to share options and RSUs granted to employees recognized for the years ended December 31, 2018, 2019 and 2020 were as follows:

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Cost of revenues	2,668	1,884	15,251	2,337
Sales and marketing expenses	2,139	354	38,247	5,862
General and administrative expenses	53,346	40,501	82,672	12,670
Research and development expenses	1,385	1,177	634	97
	59,538	43,916	136,804	20,966

24. TAXATION

Enterprise income tax ("EIT")

Cayman Islands

The Company is incorporated in the Cayman Islands and conducts its primary business operations through the subsidiaries and VIEs in the PRC and Hong Kong. Under the current laws of the Cayman Islands, the Company is not subject to tax on income or capital gain arising in Cayman Islands.

British Virgin Islands

Subsidiaries in British Virgin Islands are not subject to tax on income or capital gains under the current laws of the British Virgin Islands. Additionally, upon payments of dividends by the Company to its shareholders, no British Virgin Islands withholding tax will be imposed.

Hong Kong

Subsidiaries in Hong Kong are subject to Hong Kong profits tax rate of 16.5% for the years ended December 31, 2018, 2019 and 2020. Additionally, upon payments of dividends by the Company to its shareholders, no HK withholding tax will be imposed.

Taiwan

DYX Taiwan branch is incorporated in Taiwan and is subject to Taiwan profits tax rate of 20%, 20% and 20% respectively for the years ended December 31, 2018, 2019 and 2020.

The PRC

The Company's PRC subsidiaries are incorporated in the PRC and subject to the statutory rate of 25% on the taxable income in accordance with the Enterprise Income Tax Law (The "**EIT Law**"), which was effective since January 1, 2008, except for certain entities eligible for preferential tax rates.

Dividends, interests, rent or royalties payable by the Company's PRC subsidiaries, to non-PRC resident enterprises, and proceeds from any such non-resident enterprise investor's disposition of assets (after deducting the net value of such assets) shall be subject to 10% withholding tax, unless the respective non-PRC resident enterprise's jurisdiction of incorporation has a tax treaty or arrangements with China that provides for a reduced withholding tax rate or an exemption from withholding tax.

21Vianet Beijing was qualified for a High and New Technology Enterprise ("**HNTE**") since 2008 and is eligible for a 15% preferential tax rate. In October 2014, 21Vianet Beijing obtained a new certificate and reapplied the certificate in October 2017 and 2020, with a validity term of three years. In accordance with the PRC Income Tax Laws, an enterprise awarded with the HNTE certificate may enjoy a reduced EIT rate of 15%. For the years ended December 31, 2018, 2019 and 2020, the tax rate for 21Vianet Beijing was 15%, 15% and 15%, respectively.

In April 2011, Xi'an Sub, a subsidiary located in Shaanxi Province, was qualified for a preferential tax rate of 15% and started to apply this rate from then on. The preferential tax rate is awarded to companies that are located in West Regions of China which operate in certain encouraged industries. For the years ended December 31, 2018, 2019 and 2020, the tax rate assessed for Xi'an Sub was 15%, 15% and 15%, respectively.

In October 2015, SH Blue Cloud, a subsidiary located in Shanghai, was qualified for a HNTE and became eligible for 15% preferential tax rate. The certificate was reapplied in November 2018 with a validity term of three years. Accordingly, for the years ended December 31, 2018, 2019 and 2020, SH Blue Cloud enjoyed a preferential tax rate of 15%.

In November 2016, SZ DYX, a subsidiary located in Guangdong Province, was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years and the certificate was reapplied in November 2019 with a validity term of three years. Accordingly, for the years ended December 31, 2018, 2019 and 2020, SZ DYX enjoyed a preferential tax rate of 15%.

The New EIT Law also provides that enterprises established under the laws of foreign countries or regions and whose "place of effective management" is located within the PRC are considered PRC tax resident enterprises and subject to PRC income tax at the rate of 25% on worldwide income. The definition of "place of effective management" refers to an establishment that exercises, in substance, overall management and control over the production and business, personnel, accounting, properties, etc. of an enterprise.

As of December 31, 2020, the administrative practice associated with interpreting and applying the concept of "place of effective management" is unclear. If the Company is deemed as a PRC tax resident, it will be subject to 25% PRC EIT under the New EIT Law on its worldwide income, meanwhile the dividend it receives from another PRC tax resident company will be exempted from 25% PRC income tax. The Company will continue to monitor changes in the interpretation or guidance of this law.

Loss before income taxes consisted of:

	For the years ended December 31,			
	2018	**2019**	**2020**	
	RMB	*RMB*	*RMB*	*US$*
Non-PRC	(214,063)	(178,762)	(2,708,101)	(415,033)
PRC	51,738	2,953	137,178	21,023
	(162,325)	(175,809)	(2,570,923)	(394,010)

Income tax expenses comprised of:

	For the years ended December 31,			
	2018	**2019**	**2020**	
	RMB	*RMB*	*RMB*	*US$*
Current	(44,187)	(70,324)	(131,844)	(20,206)
Deferred	19,776	64,887	22,508	3,450
	(24,411)	(5,437)	(109,336)	(16,756)

The reconciliation of tax computed by applying the statutory income tax rate of 25% for the years ended December 31, 2018, 2019 and 2020 applicable to the PRC operations to income tax expenses were as follows:

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Loss before income taxes	(162,325)	(175,809)	(2,570,923)	(394,010)
Income tax benefits computed at applicable tax rates (25%)	40,581	43,952	642,731	98,503
Non-deductible expenses	(2,834)	(23,082)	(4,117)	(631)
Research and development expenses	25,906	19,688	32,777	5,023
Preferential rate	11,701	20,213	26,554	4,070
Current and deferred tax rate differences	37,934	(8,699)	(36,391)	(5,577)
International rate differences	(63,525)	(77,066)	(711,962)	(109,113)
Tax exempted income	–	754	1,087	167
PRC withholding tax	–	–	(10,263)	(1,573)
Unrecognized tax benefits (expenses)	1,472	1,728	(58,449)	(8,958)
Change in valuation allowance	(79,694)	25,423	6,465	991
Prior year provision to return true up	4,048	(8,348)	2,232	342
Income tax expenses	(24,411)	(5,437)	(109,336)	(16,756)

Deferred Tax

The significant components of deferred taxes were as follows:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Deferred tax assets			
Non-current			
Allowance for doubtful debt	48,568	39,886	6,113
Impairment of long-lived assets	–	13,467	2,064
Impairment of long-term investment	–	2,150	330
Accrued expense	21,139	24,986	3,829
Tax losses	146,996	171,211	26,239
Property and equipment	20,567	22,631	3,468
Intangible assets	3,691	5,765	884
Finance lease	395,555	390,925	59,912
Deferred government grant	1,189	1,357	208
Operating lease	269,468	292,210	44,783
Loss picked up on equity method investments	56,706	57,201	8,766
Valuation allowance	(158,638)	(170,104)	(26,070)
Total deferred tax assets, net of valuation allowance	805,241	851,685	130,526

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Deferred tax liabilities			
Non-current			
Intangible assets	104,217	186,258	28,545
Property and equipment	81,424	143,873	22,050
Capitalized interest expense	15,146	19,339	2,963
Finance lease	326,407	313,102	47,985
Operating lease	269,468	292,210	44,783
Investment in subsidiaries	–	10,263	1,573
Gain picked up from equity method investments	1,785	252	39
Total non-current deferred tax liabilities	798,447	965,297	147,938
Net deferred tax assets (liabilities)	6,794	(113,612)	(17,412)
Analysis as:			
Deferred tax assets	209,366	185,481	28,426
Deferred tax liabilities	202,572	299,093	45,838
Net deferred tax assets (liabilities)	6,794	(113,612)	(17,412)

As of December 31, 2020, the Company has net tax operating losses from its PRC subsidiaries and its Consolidated VIEs, as per filed tax returns, of RMB710,815 (US$108,937), which will expire between 2021 to 2030.

As of December 31, 2020, the undistributed earnings of the Company's PRC subsidiaries the Company intends to permanently reinvested were RMB1,262,028 (US$193,414). In 2020, other than these indefinitely reinvested amount, the Company has other operation or distribution plan for the new VIE, SH Zhiyan. As of December 31, 2020, the related PRC withholding tax liability accrued was RMB10,263 (US$1,573).

Unrecognized Tax Benefits

As of December 31, 2019 and 2020, the Company recorded unrecognized tax benefits of RMB2,443 and RMB68,696 (US$10,528), respectively.

The unrecognized tax benefits and its related interest are primarily related to non-deductible expenses and accrued expenses. RMB58,916 of the total unrecognized tax benefits, ultimately recognized, will impact the effective tax rate. It is possible that the amount of uncertain tax benefits will change in the next 12 months, however, an estimate of the range of the possible outcomes cannot be made at this time.

A roll-forward of unrecognized tax benefits principle was as follows:

	For the years ended December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Balance at beginning of year	4,509	1,722	264
Reversal based on tax positions related to prior years	(3,266)	(629)	(96)
Additions based on tax positions related to the current year	479	61,491	9,423
Balance at end of year	1,722	62,584	9,591

For the years ended December 31, 2018, 2019 and 2020, the Company reversed (recorded) interest expense of RMB (2,761), RMB (1,447) and RMB5,391 (US$826), respectively. Accumulated interest expense recorded by the Company was RMB721 and RMB6,112 (US$937) as of December 31, 2019 and 2020, respectively. As of December 31, 2020, the tax years ended December 31, 2015 through 2020 for the PRC subsidiaries remain open for statutory examination by the PRC tax authorities.

25. RELATED PARTY TRANSACTIONS

a) Related parties*

Name of related parties	Relationship with the Company
Xiaomi Ventures Limited ("**Xiaomi**"), Xiaomi Communication Technology Co.,Ltd., and its subsidiary, Beijing Xiaomi Mobile Software Co., Ltd., (collectively, "**Xiaomi Group**") (2)	A company controlled by principal shareholder of the Company before December 30, 2020
King Venture Holdings Limited ("**King Venture**") and Beijing Kingsoft Cloud Network Technology Co., Ltd. ("**BJ Kingsoft**") (1)	A company controlled by principal shareholder of the Company before December 30, 2020
Beijing Cheetah Mobile Technology Co., Ltd. ("**BJ Cheetah**") (1)	A company controlled by principal shareholder of the Company before December 30, 2020
Unisvnet Technology Co., Ltd. ("**Unisvnet**")	A company controlled by controlling shareholder of the Company

Name of related parties	Relationship with the Company
Beijing Tuspark Harmonious Investment Development Co., Ltd. ("**Tuspark Harmonious**")	A company controlled by controlling shareholder of the Company
Ziguang Financial Leasing Co., Ltd. ("**Ziguang Finance Leasing**")	A company controlled by principal shareholder of the Company
Qidi Bus (Beijing) Technology Co., Ltd. ("**Qidi Tech**")	A company controlled by controlling shareholder of the Company
Beijing Qidi Yefeng Investment Co., Ltd. ("**Beijing Qidi Yefeng**")	A company controlled by controlling shareholder of the Company
Beijing Huaqing Property Management Co., Ltd. ("**Beijing Huaqing**")	A company controlled by controlling shareholder of the Company
Shanghai Shibei Hi-Tech Co., Ltd. ("**SH Shibei**")	Non-controlling shareholder of a subsidiary
Marble Stone SH Group Limited ("**Marble SH**") (4)	A company controlled by minority shareholder of the Company
Marble Stone Holdings Limited ("**Marble Holdings**") (4)	A company controlled by minority shareholder of the Company
Shanghai Puping Information Technology Co., Ltd. ("**Shanghai Puping**")(4)	A company controlled by minority shareholder of the Company
Shihua DC Investment Holdings 2 Limited ("**Shihua Holdings 2**")	Equity investee of the Company in 2018 and wholly-owned subsidiary since August 20, 2019 (Note 4)
Beijing Chengyishidai Network Engineering Technology Co., Ltd. ("**CYSD**") (3)	Equity investee of the Company
WiFire (Beijing) Technology Co., Ltd. ("**WiFire BJ**") (3)	Equity investee of the Company
Beijing Fastweb Network Technology Co., Ltd. ("**BJ Fastweb**") (3)	Equity investee of the Company
Shanghai Fawei Technology Co., Ltd. ("**SH Fawei**") (3)	Equity investee of the Company

Name of related parties	Relationship with the Company
Wuhan Fastweb Cloud Computing Co., Ltd. ("**WH Fastweb**") (3)	Equity investee of the Company
Beijing Bozhi Ruihai Network Technology Co., Ltd. ("**BZRH**") (3)	Equity investee of the Company
WiFire (Shanghai) Network Technology Co., Ltd. ("**SH Guotong**") (3)	Equity investee of the Company
Jingliang Interconnected Cloud Technology Co., Ltd. ("**Jingliang Inter Cloud**")	Equity investee of the Company
Beijing Taiji Data Tech Co., Ltd. ("**Taiji**")	Equity investee of the Company in 2018, 2019 and wholly-owned subsidiary since January 31, 2020
Shihua DC Investment Management Limited ("**Shihua Investment Management**")	Equity investee of the Company in 2018, 2019 and wholly-owned subsidiary since January 31, 2020
Shihua DC Investment Management Group Limited ("**Shihua Investment Group**")	Equity investee of the Company in 2018, 2019 and wholly-owned subsidiary since January 31, 2020
Apurimac Partners Limited ("**APL**")	A company controlled by an officer of the Company
Asialeads Capital (Cayman) Limited	A company in which a director of the Company acts as an executive

* *These are the related parties that have engaged in significant transactions with the Company for the years ended December 31, 2018, 2019 and 2020.*

(1) These companies are ultimately controlled by the same party. King Venture made a significant investment in the Company in 2015. These companies ceased to be related parties as the Company repurchased the shares from King Venture on December 30, 2020.

(2) These companies are ultimately controlled by the same party. Xiaomi made a significant investment in the Company in 2015. These companies ceased to be related parties as the Company repurchased the shares from King Venture on December 30, 2020.

(3) These entities were disposed by the Company in September 2017, included in WiFire Entities, and determined by the Company as related parties as of December 31, 2018, 2019 and 2020.

(4) These entities are controlled by Waburg Pincus, a significant minority shareholder of the Company.

b) Other than disclosed elsewhere, the Company had the following significant related party transactions for the years ended December 31, 2018, 2019 and 2020:

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Services provided to:				
– Xiaomi Group	374,085	437,694	527,679	80,870
– Qidi Tech	–	7,427	3,478	533
– Jingliang Inter Cloud	–	–	880	135
– BJ Cheetah	2,079	169	98	15
– BJ Kingsoft	6,281	3,475	43	7
– Taiji	13,681	7,899	–	–
– WiFire BJ	16,490	1,934	–	–
– Unisvnet	1,011	–	–	–
– Others	4,493	1,494	305	47
Services provided by:				
– CYSD	18,667	38,918	38,918	5,964
– BJ Kingsoft	13,204	3,492	16,867	2,585
– APL	–	–	8,124	1,245
– Jingliang Inter Cloud	3,477	8,829	4,956	760
– Beijing Huaqing	–	–	4,389	673
– Taiji	7,095	19,942	–	–
– DCSS	5,238	–	–	–
– BZRH	4,239	–	–	–
– WiFire BJ	4,066	–	–	–
– Others	6,396	5,866	796	122
Loan to:				
– Shanghai Puping	–	–	62,531	9,583
– Taiji	–	1,500	–	–
Interest income from loan to:				
– BJ Fastweb	700	700	–	–
Lease deposit paid to:				
– Ziguang Finance Leasing	2,042	6,154	135	21
– Tuspark Harmonious	11,472	–	–	–
Lease payment paid to:				
– Tuspark Harmonious	–	68,832	43,703	6,698
– Ziguang Finance Leasing	4,897	17,156	30,776	4,717
– Beijing Qidi Yefeng	–	–	4,516	692
Cash consideration for shares repurchase				
– King Venture	–	–	130,472	19,996

During the year ended December 31, 2020, the company entered into an agreement with Asialeads Capital (Cayman) Limited purchased the Company's convertible promissory notes for total gross proceeds of US$50,000.

c) The Company had the following related party balances as of December 31, 2019 and 2020:

	As of December 31,		
	2019	**2020**	
	RMB	*RMB*	*US$*
Amounts due from related parties:			
Current:			
– Shanghai Puping	–	62,531	9,583
– SH Shibei	9,800	9,800	1,502
– Ziguang Finance Leasing	–	2,042	313
– Marble SH (2)	100,106	–	–
– Shihua Investment Group (3)	82,542	–	–
– Xiaomi Group	39,778	–	–
– Marble Holdings (2)	29,736	–	–
– Shihua Investment Management (3)	27,905	–	–
– Taiji	9,499	–	–
– Qidi Tech	1,249	–	–
– Others	1,050	1,146	176
	301,665	75,519	11,574
Non-current:			
– Tuspark Harmonious	11,863	11,863	1,818
– Ziguang Finance Leasing	8,195	6,289	964
– Beijing Qidi Yefeng	–	1,124	172
– Others	596	1,286	197
	20,654	20,562	3,151
Amounts due to related parties:			
Current:			
– Ziguang Finance Leasing	27,160	31,681	4,855
– Tuspark Harmonious	24,917	13,557	2,078
– Beijing Qidi Yefeng	–	4,410	676
– Shihua Investment Group (3)	84,021	–	–
– Shihua Investment Management (3)	22,484	–	–
– WiFire BJ (1)	6,330	–	–
– BJ Kingsoft	1,073	–	–
– APL	–	783	120
– Others	950	576	88
	166,935	51,007	7,817
Non-current:			
– Tuspark Harmonious	698,511	715,992	109,731
– Ziguang Finance Leasing	47,388	22,247	3,409
– Beijing Qidi Yefeng	–	9,507	1,457
	745,899	747,746	114,597

(1) In 2019, RMB20,367 of amounts due from/to WiFire Entities were offset according to the multi-party debt offset agreement signed in 2019. The remaining RMB52,142 of amounts due from WiFire Entities was fully impaired considering low collectability.

(2) Amounts due from Marble SH and Marble Holdings represented the unpaid cash consideration to the Company for acquiring the 100% equity interest in certain of Shihua Holdings 2's subsidiaries in 2019 (Note 4).

(3) Amounts due from/to Shihua Investment Management and Shihua Investment Group were generated from the assets acquisition of Shihua Holdings 2 (Note 4).

26. RESTRICTED NET ASSETS

The Company's ability to pay dividends is primarily dependent on the Company receiving distributions of funds from its subsidiaries. Relevant PRC statutory laws and regulations permit payments of dividends by the Company's PRC subsidiaries only out of their retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. The results of operations reflected in the consolidated financial statements prepared in accordance with U.S. GAAP differ from those reflected in the statutory financial statements of the Company's PRC subsidiaries.

In accordance with the PRC Regulations on Enterprises with Foreign Investment and the articles of association of the Company's PRC subsidiaries, a foreign-invested enterprise established in the PRC is required to provide certain statutory reserves, namely general reserve fund, the enterprise expansion fund and staff welfare and bonus fund which are appropriated from net profit as reported in the enterprise's PRC statutory accounts. A foreign-invested enterprise is required to allocate at least 10% of its annual after-tax profit to the general reserve until such reserve has reached 50% of its respective registered capital based on the enterprise's PRC statutory accounts. Appropriations to the enterprise expansion fund and staff welfare and bonus fund are at the discretion of the board of directors for all foreign-invested enterprises. The aforementioned reserves can only be used for specific purposes and are not distributable as cash dividends. 21Vianet China was established as a foreign-invested enterprise and, therefore, is subject to the above mandated restrictions on distributable profits. As of December 31, 2019, and 2020, the Company's PRC subsidiaries had appropriated RMB60,469 and RMB74,462 (US$11,412), respectively, in its statutory reserves.

As a result of these PRC laws and regulations subject to the limit discussed above that require annual appropriations of 10% of after-tax income to be set aside, prior to payment of dividends as general reserve fund, the Company's PRC subsidiaries are restricted in their ability to transfer a portion of their net assets to the Company. Amounts restricted include paid-in capital, additional paid in capital and statutory reserve funds of the Company's PRC subsidiaries and the equity of the Consolidated VIEs, as determined pursuant to PRC generally accepted accounting principles, totaling an aggregate of RMB9,885,573 (US$1,515,030) as of December 31, 2020.

27. LOSS PER SHARE

Basic and diluted loss per share for each of the years presented were calculated as follows:

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Numerator:				
Net loss	(186,736)	(181,246)	(2,680,259)	(410,766)
Net profit attributable to non-controlling interest	(18,329)	(1,046)	(29,088)	(4,458)
Net loss attributable to the Company	(205,065)	(182,292)	(2,709,347)	(415,224)
Plus undeclared cumulative dividend on perpetual convertible preferred shares	–	–	(22,806)	(3,495)
Deemed distribution to perpetual convertible preferred shareholders	–	–	(470,643)	(72,129)
Adjusted net loss attributable to ordinary shareholders	(205,065)	(182,292)	(3,202,796)	(490,848)
Denominator:				
Weighted average number of shares outstanding – basic	674,732,130	668,833,756	716,888,919	716,888,919
Weighted average number of shares outstanding – diluted	674,732,130	668,833,756	716,888,919	716,888,919
Loss per share – Basic:				
Net loss	(0.30)	(0.27)	(4.47)	(0.69)
	(0.30)	(0.27)	(4.47)	(0.69)
Loss per share – Diluted:				
Net loss	(0.30)	(0.27)	(4.47)	(0.69)
	(0.30)	(0.27)	(4.47)	(0.69)

In 2018, 2019 and 2020, the Company issued nil, 6,700,002 and nil ordinary shares to its share depositary bank which will be used to settle stock option awards upon their exercise, respectively. No consideration was received by the Company for this issuance of ordinary shares. These ordinary shares are legally issued and outstanding but are treated as escrowed shares for accounting purposes and therefore, have been excluded from the computation of loss per share. Any ordinary shares not used in the settlement of stock option awards will be returned to the Company.

28. SHARE CAPITAL

Holders of Class A Ordinary Shares, Class B Ordinary Shares and Class C Ordinary Shares are entitled to the same rights except for voting and conversion rights. In respect of matters requiring a shareholder's vote, each Class A Ordinary Share is entitled to one vote right, each Class B Ordinary Share is entitled to ten votes, and each Class C Ordinary Share is entitled to one vote and certain veto rights. Each Class B Ordinary Share and Class C Ordinary Share is convertible into one Class A Ordinary Share at any time by the holder. Class A Ordinary Shares are not convertible into Class B Ordinary Share and Class C Ordinary Shares under any circumstances. Upon any transfer of Class B Ordinary Shares and Class C Ordinary Shares by a holder to any person or entity which is not an affiliate of such holder, such Class B Ordinary Shares and Class C Ordinary Share will be automatically converted into an equal number of Class A Ordinary Shares.

For the years ended December 31, 2018 and 2019, 3,070,500 and 304,200 Class A ordinary shares were issued to settle the share options exercised and RSUs vested. For the year ended December 31, 2020, 104,304 Class A ordinary shares issued to settle RSUs vested in prior years were repurchased and cancelled.

In October 2019, the Company issued 60,000 newly created Class C ordinary shares to Personal Group Limited, a British Virgin Islands company wholly owned by Mr. Sheng Chen, the executive chairman of our board of directors, at a price of US$1.35 per share, to execute business strategies over the long term under the leadership of the Company's board and senior management.

In August 2020, the Company completed a public offering in which the Company offered and sold 19,550,000 ADSs (or 117,300,000 Class A ordinary shares), including 2,550,000 ADSs (or 15,300,000 Class A ordinary shares) purchased by the underwriters by exercising their option. The Company raised a total of RMB2,680,421 (US$410,792) in proceeds from this public offering, net of underwriting discounts and commissions and other issuance costs.

In 2020, Purchaser of the convertible promissory notes exercised the right to convert approximately 23.7% of the total principal amount issued to 23,710,140 newly issued Class A ordinary shares at the conversion price of US$12 per ADS.

29. FAIR VALUE MEASUREMENTS

The Company applies ASC 820. ASC 820 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. ASC 820 requires disclosures to be provided on fair value measurement.

ASC 820 establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1 – Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2 – Include other inputs that are directly or indirectly observable in the marketplace.

Level 3 – Unobservable inputs which are supported by little or no market activity.

ASC 820 describes three main approaches to measuring the fair value of assets and liabilities: (1) market approach; (2) income approach; and (3) cost approach. The market approach uses prices and other relevant information generated from market transactions involving identical or comparable assets or liabilities. The income approach uses valuation techniques to convert future amounts to a single present value amount. The measurement is based on the value indicated by current market expectations about those future amounts. The cost approach is based on the amount that would currently be required to replace an asset.

Cash equivalents, time deposits and bonds payable are classified within Level 1 because they are valued by using quoted market prices.

The contingent considerations for the acquired businesses, convertible promissory notes, liability classified RSU and long-term investments are classified within Level 3. The contingent considerations are based on the achievement of certain financial targets in accordance with the sales and purchase agreements for the various periods, as well as other non-financial measures. The fair value of liability classified RSU was estimated using the share price and exchange rate that the Company estimates to be settled in shares. The fair value of convertible promissory notes is measured using binomial tree pricing model that involves several parameters including the Company's stock price, stock price volatility determined from the Company's historical stock prices, the remaining maturity term and the discount rate.

The Company measures equity investments elected to use the measurement alternative at fair value on a non-recurring basis, in the cases of an impairment charge is recognized, fair value of an investment is remeasured in an acquisition/a disposal, and an orderly transaction for identical or similar investments of the same issuer was identified.

Assets and liabilities measured at fair value on a recurring basis were summarized below:

	Fair value measurement using:			
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Unobservable inputs (Level 3)	Fair value at December 31, 2019
	RMB	*RMB*	*RMB*	*RMB*
Cash equivalents:				
– Time deposits	117,825	–	–	117,825
Short-term investments:				
– Time deposits	363,856	–	–	363,856
Long-term investments				
– Available-for-sale debt securities	–	–	1,713	1,713
Assets	481,681	–	1,713	483,394
Short-term borrowings:				
– Current portion of bonds payable	912,416	–	–	912,416
Long-term borrowings:				
– Bonds payable	2,089,114	–	–	2,089,114
Other liabilities:				
– Liability classified RSU	–	–	2,109	2,109
Liabilities	3,001,530	–	2,109	3,003,639

	Fair value measurement using:				
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Unobservable inputs (Level 3)	Fair value at December 31, 2020	
	RMB	*RMB*	*RMB*	*RMB*	*US$*
Cash equivalents:					
– Time deposits	645,879	–	–	645,879	98,985
Short-term investments:					
– Time deposits	285,872	–	–	285,872	43,812
Long-term investments:					
– Available-for-sale debt securities	–	–	1,713	1,713	263
Assets	931,751	–	1,713	933,464	143,060
Short-term borrowings:					
– Current portion of bonds payable	1,998,088	–	–	1,998,088	306,220
Convertible promissory notes	–	–	3,014,057	3,014,057	461,924
Other liabilities:					
– Liability classified RSU	–	–	–	–	–
Liabilities	1,998,088	–	3,014,057	5,012,145	768,144

The following table presented a reconciliation of all liabilities measured at fair value on a recurring basis using significant unobservable inputs (level 3):

	Liability classified RSU
	RMB
Fair value at January 1, 2019	4,970
Reclassification to equity	(2,861)
Reversal	–
Transfers in and/or out of Level 3	–
Fair value at December 31, 2019	2,109
Reclassification to equity	(2,109)
Reversal	–
Transfers in and/or out of Level 3	–
Fair value at December 31, 2020	–
Fair value at December 31, 2020 (US$)	–

	Convertible promissory notes	
	RMB	*US$*
Convertible promissory notes fair value *(Note 18)*	1,409,385	215,998
Foreign exchange loss	(219,001)	(33,564)
Changes in the fair value	2,544,220	389,919
Reclassification to equity	(720,547)	(110,429)
Transfers in and/or out of Level 3	–	–
Fair value at December 31, 2020	3,014,057	461,924

Assets measured at fair value on a non-recurring basis

The Company measures certain non-financial assets on a non-recurring basis. The Company's non-financial long-lived assets, such as intangible assets, goodwill and fixed assets, would be measured at fair value only if they were determined to be impaired on an other-than-temporary basis. The fair values of non-financial long-lived assets were measured under income approach, based on the Company's best estimation which primarily includes significant unobservable inputs (level 3) such as future cash flows and discount rate.

30. COMMITMENTS AND CONTINGENCIES

Capital commitments

As of December 31, 2020, the Company has the following commitments to purchase certain computer and network equipment and construction-in-progress:

	RMB	*US$*
For the year ending December 31,		
2021	1,678,273	257,207
2022 and thereafter	–	–
	1,678,273	257,207

Bandwidth and cabinet capacity purchase commitments

As of December 31, 2020, the Company has outstanding purchase commitments in relation to bandwidth and cabinet capacity consisting of the following:

	RMB	*US$*
For the year ending December 31,		
2021	706,715	108,309
2022	149,331	22,886
2023	6,458	990
2024	2,189	335
2025 and thereafter	6,512	998
	871,205	133,518

Income Taxes

As of December 31, 2020, the Company has recognized an accrual of RMB68,696 (US$10,528) for unrecognized tax benefits and its interest (Note 24). The final outcome of the tax uncertainty is dependent upon various matters including tax examinations, interpretation of tax laws or expiration of status of limitation. However, due to the uncertainties associated with the status of examinations, including the protocols of finalizing audits by the relevant tax authorities, there is a high degree of uncertainty regarding the future cash outflows associated with these tax uncertainties.

Securities Litigation

In 2014, the Company and certain of its officers and directors were named as defendants in two putative securities class actions filed in U.S. federal district courts in Texas, the complaints in both actions alleged that certain of the Company's financial statements and other public disclosures contained misstatements or omissions and asset claims under the U.S. securities laws. In 2016, the Company filed a motion to dismiss the complaint and in 2017, the magistrate judge issued a report and recommendation to deny the Company's motion to dismiss.

On April 9, 2018, the lead plaintiff of the putative class action filed an unopposed motion for preliminary approval of settlement for both of the aforementioned class actions, requesting that, among others, the Court preliminarily approve a settlement agreement that the parties reached to settle the case for RMB58,808. On November 9, 2018, the Court approved the settlement and issued final judgment, ending the case. The Company has paid the settlement amount as of December 31, 2018.

Operating litigation

In March 2019, a third-party supplier filed a lawsuit against the Company, alleging that the Company had not fully fulfilled its obligations under a network infrastructure cooperation agreement entered into in 2013.

On October 30, 2020, the court announced the first judgement settlement and the settlement came into force from November 18, 2020. The Company assessed that the settlement is probable and recorded an estimated loss of RMB1,628 (US$250) within accrued expenses and other payables in the consolidated balance sheet as of December 31, 2020.

In the ordinary course of business, the Company may from time to time be involved in legal proceedings and litigations. As of December 31, 2020, the Company did not consider an unfavorable outcome in any material respects in the outstanding legal proceedings and litigations to be probable.

31. SUBSEQUENT EVENTS

In January 2021, the Company has issued a zero-coupon rate convertible senior notes for a total aggregate principal amount of US$600,000. The convertible notes will mature in five years from the date of issuance if not converted.

On March 1, 2021, 150,000 Series A perpetual convertible preferred shares has been converted into 54,570,816 Class A Ordinary Shares.

In April 2021, the Company repurchased from Tuspark Innovation Venture Ltd., ("**Tuspark**") 48,634,493 Class B ordinary shares for an aggregate purchase price of approximately US$260 million. The repurchase price will be at US$5.346 per ordinary share, or US$32.076 per ADS. The director appointed by Tuspark has resigned from the board of directors of the Company. Immediately following the consummation of the transaction, all of the remaining Class B ordinary shares held by Tuspark have been converted into the same number of Class A ordinary shares of the Company. Tuspark has also agreed to sell and transfer additional ordinary shares to Beacon Capital Group Inc., a company affiliated with Mr. Josh Sheng Chen, at the same price. If this additional share transfer is consummated, Tuspark will retain a small shareholding of less than 5% in the Company.

32. PARENT COMPANY ONLY CONDENSED FINANCIAL INFORMATION

Condensed balance sheets

	Notes	As of December 31, 2019	2020	
		RMB	*RMB*	*US$*
ASSETS				
Current assets				
Cash and cash equivalents		243,989	62,116	9,520
Short-term investments		138,848	–	–
Prepaid expenses and other current assets		105,597	97,391	14,925
Amounts due from subsidiaries	*(b)*	6,128,595	9,320,580	1,428,441
Total current assets		6,617,029	9,480,087	1,452,886
Non-current assets				
Investments in subsidiaries		1,446,563	2,169,222	332,448
Total non-current assets		1,446,563	2,169,222	332,448
Total assets		8,063,592	11,649,309	1,785,334
LIABILITIES AND SHAREHOLDERS' EQUITY				
Current liabilities:				
Accrued expenses and other payables		57,612	49,648	7,609
Account payables		56	52	8
Interest payable		58,525	37,353	5,725
Current portion of bonds payable		911,147	1,943,619	297,873
Amount due to related parties		–	783	120
Amounts due to subsidiaries	*(b)*	22,471	38,863	5,955
Total current liabilities		1,049,811	2,070,318	317,290
Non-current liabilities				
Bonds payable	*(c)*	2,060,708	–	–
Convertible promissory notes		–	3,014,057	461,924
Total non-current liabilities		2,060,708	3,014,057	461,924
Total liabilities		3,110,519	5,084,375	779,214

	Notes	As of December 31, 2019	2020	
		RMB	*RMB*	*US$*
Shareholders' equity:				
Class A Ordinary shares (par value of US$0.00001 per share; 1,200,000,000 and 1,199,790,000 shares authorized; 505,253,850 and 672,024,600 shares issued and outstanding as of December 31, 2019 and 2020, respectively)		34	44	7
Class B Ordinary shares (par value of US$0.00001 per share; 300,000,000 and 300,000,000 shares authorized; 174,649,638 and 145,875,113 shares issued and outstanding as of December 31, 2019 and 2020, respectively)		12	12	2
Class C Ordinary shares (par value of US$0.00001 per share; 60,000 and 60,000 shares authorized; 60,000 and 60,000 shares issued and outstanding as of December 31, 2019 and 2020, respectively)		–	–	–
Series A perpetual convertible preferred shares (par value of US$0.00001 per share; nil and 150,000 shares issued and outstanding as of December 31, 2019 and 2020, respectively)		–	1,047,468	160,531
Additional paid-in capital		9,202,567	13,083,119	2,005,076
Accumulated other comprehensive loss (income)		77,904	(55,535)	(8,511)
Accumulated deficit		(3,977,921)	(7,160,651)	(1,097,418)
Treasury stock		(349,523)	(349,523)	(53,567)
Total shareholders' equity		4,953,073	6,564,934	1,006,120
Total liabilities and shareholders' equity		8,063,592	11,649,309	1,785,334

Condensed statements of operations

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Operating Expenses				
General and administrative expenses	(65,949)	(44,490)	(94,175)	(14,433)
Changes in the fair value of contingent purchase consideration payables	13,905	–	–	–
Operating loss	(52,044)	(44,490)	(94,175)	(14,433)
Other loss	(262,186)	(274,572)	(168,656)	(25,846)
Changes in the fair value of convertible promissory notes	–	–	(2,544,220)	(389,919)
Share of profits from subsidiaries and Consolidated VIEs	109,165	136,770	97,704	14,974
Net loss attributable to 21Vianet Group, Inc.	(205,065)	(182,292)	(2,709,347)	(415,224)
Income tax expense	–	–	–	–
Net loss	(205,065)	(182,292)	(2,709,347)	(415,224)

Condensed statements of comprehensive loss

	For the years ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
Net loss	(205,065)	(182,292)	(2,709,347)	(415,224)
Other comprehensive income (loss), net of tax of nil:				
Foreign currency translation adjustments, net of tax of nil	88,652	(8,075)	(133,439)	(20,450)
Other comprehensive income (loss), net of tax of nil:	88,652	(8,075)	(133,439)	(20,450)
Comprehensive loss	(116,413)	(190,367)	(2,842,786)	(435,674)
Comprehensive loss attributable to 21Vianet Group, Inc.	(116,413)	(190,367)	(2,842,786)	(435,674)

Condensed statements of cash flows

	For the years ended December 31,			
	2018	**2019**	**2020**	
	RMB	*RMB*	*RMB*	*US$*
Net cash used in operating activities	(166,068)	(142,989)	(743,944)	(114,014)
Net cash used in investing activities	(203,651)	(1,011,257)	(3,036,370)	(465,344)
Net cash generated from financing activities	43,145	807,765	3,598,441	551,485
Net decrease in cash and cash equivalents and restricted cash	(326,574)	(346,481)	(181,873)	(27,873)
Cash and cash equivalents and restricted cash at beginning of the year	917,044	590,470	243,989	37,393
Cash and cash equivalents and restricted cash at end of the year	590,470	243,989	62,116	9,520

(a) Basis of presentation

In the Company-only financial statements, the Company's investment in subsidiaries is stated at cost plus equity in undistributed earnings of subsidiaries since inception.

The Company records its investment in its subsidiary under the equity method of accounting as prescribed in ASC 323-10, *Investment-Equity Method and Joint Ventures*, and such investment is presented on the balance sheets as "Investments in subsidiaries" and the share of the subsidiaries' profit or loss is presented as "Share of profits of subsidiaries and Consolidated VIEs" on the statements of operations.

The subsidiaries did not pay any dividends to the Company for the years presented.

Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted and as such, these Company-only financial statements should be read in conjunction with the Company's consolidated financial statements.

(b) Related party transactions

The Company had the following related party balances as of December 31, 2019 and 2020:

	As of December 31,		
	2019	2020	
	RMB	*RMB*	*US$*
Amounts due from subsidiaries			
– 21Vianet HK	5,855,452	7,043,586	1,079,477
– WiFire Open Network Group Ltd.	147,326	2,157,285	330,618
– HongKong Fastweb Holdings Co., Ltd.	67,088	62,780	9,621
– 21V Mobile	58,018	56,265	8,623
– WiFire Group	698	652	100
– Others	13	12	2
	6,128,595	9,320,580	1,428,441
Amounts due to subsidiaries			
– 21Vianet Beijing	19,449	35,783	5,484
– Others	3,022	3,080	471
	22,471	38,863	5,955

B. AUDITED CONSOLIDATED FINANCIAL STATEMENTS OF THE TARGET COMPANY FOR THE YEAR ENDED 31 DECEMBER 2021

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of VNET Group, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of VNET Group, Inc. (the "**Company**") as of December 31, 2021 and 2020, the related consolidated statements of operations, comprehensive (loss) income, cash flows and shareholders' equity for each of the three years in the period ended December 31, 2021 and the related notes (collectively referred to as the "**consolidated financial statements**"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated April 26, 2022 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation allowance for deferred tax assets

Description of the Matter	As described in Notes 2 and 25 to the consolidated financial statements, the Company recorded deferred tax assets of RMB1,218.2 million, net of valuation allowance of RMB262.0 million as of December 31, 2021. The carrying amount of deferred tax assets is reviewed on an entity-by-entity basis and is reduced by a valuation allowance to the extent that it is more-likely-than-not that the benefits of the deferred tax assets will not be realized in future years. The valuation allowance is determined based on the weight of positive and negative evidence, including future reversals of existing taxable temporary differences, future taxable income exclusive of reversing temporary differences and verifiable tax planning. Auditing the valuation allowance for deferred tax assets was complex and required significant auditor judgment and effort because management's estimate of future taxable income is judgmental and may be affected by future market conditions and the performance of the Company.
How we addressed the matter in our audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls that address the risks of material misstatement relating to the realizability of deferred tax assets, including controls over management's review of the significant assumptions used in the projections of future taxable income.

We performed procedures that included, among others, evaluating the significant assumptions used by the Company in estimating future taxable income and testing the completeness and accuracy of the underlying data used in the projections. For example, we compared the forecasted revenue growth rate to historical results, management's plan of expanding the Company's operating capacity, current industry trends, and other relevant external data. We also performed sensitivity analyses of the forecasted revenue growth rate to evaluate the changes in the valuation allowance for deferred tax assets that would result from changes in such growth rate.

/s/Ernst & Young Hua Ming LLP

We have served as the Company's auditor since 2010.

Shanghai, the People's Republic of China

April 26, 2022

VNET GROUP, INC.
CONSOLIDATED BALANCE SHEETS
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Notes	As of December 31, 2020 RMB	2021 RMB	2021 US$
ASSETS				
Current assets:				
Cash and cash equivalents		2,710,349	1,372,481	215,372
Restricted cash		270,450	327,767	51,434
Accounts and notes receivable (net of allowance for doubtful debt of RMB68,921 and RMB99,620 (US$15,633) as of December 31, 2020 and 2021, respectively)	*5*	847,233	1,405,997	220,632
Short-term investments	*6*	285,872	–	–
Prepaid expenses and other current assets	*7*	1,866,184	2,049,911	321,673
Amounts due from related parties	*26*	75,519	167,967	26,358
Total current assets		6,055,607	5,324,123	835,469
Non-current assets:				
Property and equipment, net	*8*	8,106,425	10,092,419	1,583,721
Intangible assets, net	*9*	658,195	900,335	141,282
Land use rights, net	*10*	255,373	337,235	52,920
Operating lease right-of-use assets, net	*16*	1,325,526	2,869,338	450,262
Goodwill	*11*	994,993	1,339,657	210,221
Restricted cash		135,638	8,225	1,291
Deferred tax assets, net	*25*	185,481	168,002	26,363
Long-term investments, net	*12*	135,517	98,243	15,416
Amounts due from related parties	*26*	20,562	–	–
Other non-current assets	*13*	1,500,438	1,957,462	307,169
Total non-current assets		13,318,148	17,770,916	2,788,645
Total assets		19,373,755	23,095,039	3,624,114

VNET GROUP, INC.

CONSOLIDATED BALANCE SHEETS (CONTINUED)

*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

		As of December 31,		
	Notes	**2020**	**2021**	
		RMB	*RMB*	*US$*
LIABILITIES AND SHAREHOLDERS' EQUITY				
Current liabilities:				
Short-term bank borrowings (including short-term bank borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB34,000 and nil as of December 31, 2020 and 2021, respectively)	*14*	34,000	–	–
Accounts and notes payable (including accounts and notes payable of the Consolidated VIEs without recourse to the primary beneficiaries of RMB182,669 and RMB352,478 (US$55,311) as of December 31, 2020 and 2021, respectively)		289,387	493,506	77,442
Accrued expenses and other payables (including accrued expenses and other payables of the Consolidated VIEs without recourse to the primary beneficiaries of RMB981,961 and RMB1,342,886 (US$210,728) as of December 31, 2020 and 2021, respectively)	*15*	1,631,563	2,298,089	360,620
Advances from customers (including advances from customers of the Consolidated VIEs without recourse to the primary beneficiaries of RMB1,041,594 and RMB1,041,902 (US$163,497) as of December 31, 2020 and 2021, respectively)		1,041,594	1,041,902	163,497
Deferred revenue (including deferred revenue of the Consolidated VIEs without recourse to the primary beneficiaries of RMB58,066 and RMB49,055 (US$7,698) as of December 31, 2020 and 2021, respectively)		63,245	55,695	8,740
Income taxes payable (including income taxes payable of the Consolidated VIEs without recourse to the primary beneficiaries of RMB12,743 and RMB20,972 (US$3,291) as of December 31, 2020 and 2021, respectively)		29,028	43,770	6,868
Amounts due to related parties (including amounts due to related parties of the Consolidated VIEs without recourse to the primary beneficiaries of RMB50,193 and RMB8,007 (US$1,256) as of December 31, 2020 and 2021, respectively)	*26*	51,007	8,772	1,377

VNET GROUP, INC.
CONSOLIDATED BALANCE SHEETS (CONTINUED)
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

		As of December 31,		
	Notes	**2020**	**2021**	
		RMB	*RMB*	*US$*
Current portion of long-term borrowings (including current portion of long-term borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB165,328 and RMB350,609 (US$55,018) as of December 31, 2020 and 2021, respectively)	*14*	180,328	384,158	60,283
Current portion of finance lease liabilities (including current portion of finance lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB362,760 and RMB200,961 (US$31,535) as of December 31, 2020 and 2021, respectively)	*16*	403,843	244,032	38,294
Deferred government grants (including deferred government grants of the Consolidated VIEs without recourse to the primary beneficiaries of RMB2,074 and RMB2,074 (US$325) as of December 31, 2020 and 2021, respectively)	*20*	2,074	2,074	325
Current portion of bonds payable	*17*	1,943,619	–	–
Current portion of operating lease liabilities (including current portion of operating lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB427,114 and RMB579,391 (US$90,919) as of December 31, 2020 and 2021, respectively)	*16*	452,272	607,997	95,408
Total current liabilities		6,121,960	5,179,995	812,854

VNET GROUP, INC.

CONSOLIDATED BALANCE SHEETS (CONTINUED)

*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Notes	As of December 31, 2020 *RMB*	2021 *RMB*	*US$*
Non-current liabilities:				
Long-term borrowings (including long-term borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB570,135 and RMB1,480,709 (US$232,356) as of December 31, 2020 and 2021, respectively)	*14*	886,996	2,215,015	347,584
Convertible promissory notes	*19*	3,014,057	4,266,951	669,578
Non-current portion of finance lease liabilities (including non-current portion of finance lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB299,399 and RMB704,255 (US$110,513) as of December 31, 2020 and 2021, respectively)	*16*	688,128	1,119,751	175,713
Unrecognized tax benefits (including unrecognized tax benefits of the Consolidated VIEs without recourse to the primary beneficiaries of RMB68,317 and RMB77,192 (US$12,113) as of December 31, 2020 and 2021, respectively)	*25*	68,696	77,573	12,173
Deferred tax liabilities (including deferred tax liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB155,281 and RMB132,370 (US$20,772) as of December 31, 2020 and 2021, respectively)	*25*	299,093	348,404	54,672
Deferred government grants (including deferred government grants of the Consolidated VIEs without recourse to the primary beneficiaries of RMB4,100 and RMB2,294 (US$360) as of December 31, 2020 and 2021, respectively)	*20*	4,100	2,294	360
Amounts due to related parties (including amounts due to related parties of the Consolidated VIEs without resource to the primary beneficiaries of RMB747,746 and nil as of December 31, 2020 and 2021, respectively)	*26*	747,746	–	–
Non-current portion of operating lease liabilities (including non-current portion of operating lease liabilities of the Consolidated VIEs without resource to the primary beneficiaries of RMB497,268 and RMB2,114,309 (US$331,781) as of December 31, 2020 and 2021, respectively)	*16*	645,499	2,284,055	358,418
Total non-current liabilities		6,354,315	10,314,043	1,618,498
Total liabilities		12,476,275	15,494,038	2,431,352
Commitments and contingencies	*31*			

VNET GROUP, INC.

CONSOLIDATED BALANCE SHEETS (CONTINUED)

*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

		As of December 31,		
	Notes	**2020**	**2021**	
		RMB	*RMB*	*US$*
Shareholders' equity:				
Class A Ordinary shares (par value of US$0.00001 per share; 1,199,790,000 and 1,199,790,000 shares authorized; 672,024,600 and 859,932,323 shares issued and outstanding as of December 31, 2020 and 2021, respectively)	*29*	44	56	8
Class B Ordinary Shares (par value of US$0.00001 per share; 300,000,000 and 300,000,000 shares authorized; 145,875,113 and 30,721,723 shares issued and outstanding as of December 31, 2020 and 2021, respectively)	*29*	12	4	1
Class C Ordinary Shares (par value of US$0.00001 per share; 60,000 and 60,000 shares authorized; 60,000 and 60,000 shares issued and outstanding as of December 31, 2020 and 2021, respectively)	*29*	–	–	–
Additional paid-in capital		13,083,119	15,198,055	2,384,906
Series A perpetual convertible preferred shares (par value of US$0.00001 per share; 150,000 and 150,000 shares authorized; 150,000 and nil shares issued and outstanding as of December 31, 2020 and 2021, respectively)	*18*	1,047,468	–	–
Accumulated other comprehensive loss	*22*	(55,535)	(90,443)	(14,192)
Statutory reserves		74,462	74,462	11,685
Accumulated deficit		(7,235,113)	(7,590,382)	(1,191,097)
Treasury stock	*21*	(349,523)	(349,523)	(54,848)
Total VNET Group, Inc. shareholders' equity		6,564,934	7,242,229	1,136,463
Non-controlling interest		332,546	358,772	56,299
Total shareholders' equity		6,897,480	7,601,001	1,192,762
Total liabilities and shareholders' equity		19,373,755	23,095,039	3,624,114

The accompanying notes are an integral part of these consolidated financial statements

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

(Amounts in thousands of RMB and US$, except for number of shares and per shares data)

		As of December 31,			
	Notes	**2019**	**2020**	**2021**	
		RMB	*RMB*	*RMB*	*US$*
Net revenues					
Hosting and related services		3,788,967	4,829,019	6,189,801	971,315
Cost of revenues					
Hosting and related services		(2,849,518)	(3,753,008)	(4,751,771)	(745,657)
Gross profit		939,449	1,076,011	1,438,030	225,658
Operating income (expenses)					
Operating income		6,862	7,619	–	–
Sales and marketing expenses		(206,309)	(235,012)	(255,400)	(40,078)
Research and development expenses		(88,792)	(112,891)	(188,489)	(29,578)
General and administrative expenses		(415,277)	(535,111)	(842,354)	(132,184)
Allowance for doubtful debt		(1,557)	(2,393)	(18,399)	(2,887)
Impairment of receivables from equity investees		(52,142)	–	–	–
Impairment of loan receivable to potential investee		–	–	(2,807)	(440)
Impairment of long-lived assets		–	(81,619)	(109,267)	(17,146)
Total operating expenses		(757,215)	(959,407)	(1,416,716)	(222,313)
Operating profit		182,234	116,604	21,314	3,345
Interest income		54,607	31,711	31,897	5,005
Interest expense		(345,955)	(380,609)	(334,950)	(52,561)
Loss on debt extinguishment		(18,895)	–	–	–
Other income		36,380	16,539	33,923	5,323
Other expenses		(5,632)	(36,912)	(22,700)	(3,562)
Changes in the fair value of convertible promissory notes		–	(2,544,220)	829,149	130,112
Impairment of long-term investment		–	(13,030)	(3,495)	(548)
Foreign exchange (loss) gain, net		(27,995)	228,125	110,036	17,267
(Loss) income before income taxes and (loss) gain from equity method investments		(125,256)	(2,581,792)	665,174	104,381
Income tax expenses	*25*	(5,437)	(109,336)	(111,407)	(17,482)
(Loss) gain from equity method investments		(50,553)	10,869	(38,666)	(6,068)

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS (CONTINUED)

(Amounts in thousands of RMB and US$, except for number of shares and per shares data)

		As of December 31,			
	Notes	**2019**	**2020**	**2021**	
		RMB	*RMB*	*RMB*	*US$*
Net (loss) income		(181,246)	(2,680,259)	515,101	80,831
Net profit attributable to non-controlling interest		(1,046)	(29,088)	(15,003)	(2,354)
		(182,292)	(2,709,347)	500,098	78,477
Net (loss) income attributable to the VNET Group, Inc.					
(Loss) earning per share:					
Basic	*28*	RMB(0.27)	RMB(4.47)	RMB0.57	USD0.09
Diluted	*28*	RMB(0.27)	RMB(4.47)	RMB(0.36)	USD(0.06)
Shares used in (loss) earning per share computation:					
Basic	*28*	668,833,756	716,888,919	865,352,554	865,352,554
Diluted	*28*	668,833,756	716,888,919	911,591,433	911,591,433

The accompanying notes are an integral part of these consolidated financial statements

VNET GROUP, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME
(Amounts in thousands of RMB and US$)

	As of December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Net (loss) income	(181,246)	(2,680,259)	515,101	80,831
Other comprehensive loss, net of tax of nil				
Foreign currency translation adjustments, net of tax of nil	(8,075)	(133,439)	(34,908)	(5,478)
Other comprehensive loss, net of tax of nil	(8,075)	(133,439)	(34,908)	(5,478)
Comprehensive (loss) income	(189,321)	(2,813,698)	480,193	75,353
Comprehensive income attributable to non-controlling interest	(1,046)	(29,088)	(15,003)	(2,354)
Comprehensive (loss) income attributable to VNET Group, Inc.	(190,367)	(2,842,786)	465,190	72,999

The accompanying notes are an integral part of these consolidated financial statements

VNET GROUP, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands of RMB and US$)

	As of December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
CASH FLOWS FROM OPERATING ACTIVITIES				
Net (loss) income	(181,246)	(2,680,259)	515,101	80,831
Adjustments to reconcile net loss to net cash generated from operating activities:				
Foreign exchange loss (gain), net	27,995	(228,125)	(110,036)	(17,267)
Depreciation and amortization	772,205	988,983	1,267,578	198,911
Loss on disposal of property and equipment and intangible assets	271	6,032	6,339	995
Allowance for doubtful debt	1,557	2,393	18,399	2,887
Share-based compensation expense	43,916	136,804	320,010	50,217
Impairment of receivables from equity investees	52,142	–	–	–
Impairment of loan receivable to potential investee	–	–	2,807	440
Deferred income tax (benefits) loss	(64,887)	(22,508)	325	51
Loss (gain) from equity method investments	50,553	(10,869)	38,666	6,068
Distribution received from an equity method investment	20,200	17,723	–	–
Gain from disposal of equity investments without readily determinable fair value	(5,536)	(257)	–	–
Gain from disposal of equity method investment	(17,853)	–	–	–
Gain from disposal of subsidiaries	–	–	(17,153)	(2,692)
Impairment of long-lived assets	–	81,619	109,267	17,146
Impairment of long-term investment	–	13,030	3,495	548
Loss on debt extinguishment	18,895	–	–	–
Lease expense	205,787	375,112	557,865	87,541
Changes in the fair value of convertible promissory notes	–	2,544,220	(829,149)	(130,112)
Changes in operating assets and liabilities, net of effects of acquisitions and disposals:				
Accounts and notes receivable	(156,134)	(171,608)	(533,323)	(83,690)
Prepaid expenses and other current assets	(328,224)	(117,110)	73,639	11,556
Amounts due from related parties	11,352	37,468	(17,502)	(2,746)
Accounts and notes payables	9,185	(13,741)	195,728	30,714
Unrecognized tax benefits	(4,234)	66,253	8,877	1,393
Accrued expenses and other payables	77,275	91,123	315,989	49,586
Deferred revenue	(129)	5,620	(7,550)	(1,185)
Advances from customers	398,655	(27,098)	307	48
Income taxes payable	34,917	(19,004)	14,742	2,313
Deferred government grants	500	–	93	15
Amounts due to related parties	6,044	(5,605)	7,431	1,166
Operating lease liabilities	(170,284)	(355,953)	(554,023)	(86,938)
Net cash generated from operating activities	802,922	714,243	1,387,922	217,796

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

(Amounts in thousands of RMB and US$)

	As of December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
CASH FLOWS FROM INVESTING ACTIVITIES				
Purchases of property and equipment	(1,248,834)	(2,473,332)	(2,691,928)	(422,422)
Purchases of intangible assets	(26,515)	(30,091)	(42,285)	(6,635)
Purchases of land use rights	(24,460)	–	(91,744)	(14,397)
Proceeds from disposal of property and equipment	2,484	1,777	10,220	1,604
Proceeds from disposal of land use right	–	9,397	–	–
Proceed from disposal of subsidiaries, net	–	5,802	–	–
Payments for short-term investments	(436,737)	(328,182)	(64,605)	(10,138)
Payment of loan to a third party	–	(12,562)	(16,474)	(2,585)
Payment of loans to related parties	(66,704)	(62,531)	(75,872)	(11,906)
Receipt of loans to third parties	–	30,000	17,010	2,669
Proceeds received from maturity of short-term investments	312,198	397,575	347,520	54,533
Proceeds from disposal of long-term investments	18,955	1,923	120	19
Payments for long-term investments	(9,330)	–	(5,000)	(785)
Prepayments and deposits for acquiring data center	(82,536)	(1,302,601)	(679,941)	(106,699)
Collection of deposit for acquiring data center	30,000	106,436	30,000	4,708
Payments for acquisitions, net of cash acquired	(148,067)	(369,924)	(509,634)	(79,973)
Cash receipt from related parties due to restructuring	67,563	140,738	–	–
Payment for other investment activities	–	(3,599)	–	–
Net cash used in investing activities	(1,611,983)	(3,889,174)	(3,772,613)	(592,007)
CASH FLOWS FROM FINANCING ACTIVITIES				
Repayment of loan from a related party	(47,893)	–	–	–
Proceeds from exercise of stock options, net of issuance cost	429	3,029	472	74
Proceeds from issuance of ordinary shares	572	2,680,421	(131)	(21)
Proceeds from issuance of Series A perpetual convertible preferred shares	–	1,058,325	–	–
Payment of issuance cost of Series A perpetual convertible preferred shares	–	(9,374)	–	–
Proceeds from issuance of 2025 Convertible Notes, net of issuance cost	–	1,387,781	–	–
Proceeds from issuance of 2021 Notes, net of issuance cost *(Note 17)*	1,976,474	–	–	–
Repurchase and repayment of 2020 Notes *(Note 17)*	(1,148,092)	(915,543)	–	–
Proceeds from issuance of 2026 Convertible Notes, net of issuance cost	–	–	3,790,396	594,796
Proceeds from long-term bank borrowings	–	594,619	1,628,438	255,537
Proceeds from short-term bank borrowings	234,500	34,000	–	–
Proceeds from other long-term borrowings	110,000	374,448	220,000	34,523
Repayment of long-term bank borrowings	(85,110)	(33,000)	(179,455)	(28,160)
Repayment of short-term bank borrowings	(50,000)	(234,500)	(34,000)	(5,335)
Repayment and deposits for other long-term borrowings	(19,399)	(125,825)	(175,123)	(27,481)
Payments for purchase of property and equipment through finance leases	(333,614)	(376,232)	(579,660)	(90,961)
Repayment of loan from third parties	(67,659)	(169,325)	(66,884)	(10,496)

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

(Amounts in thousands of RMB and US$)

	As of December 31,			
	2019	**2020**	**2021**	
	RMB	*RMB*	*RMB*	*US$*
Contribution from non-controlling interest in subsidiaries	8,532	24,903	11,223	1,761
Prepayment for future share repurchase plan	(9,778)	–	–	–
Payments for share repurchase and cancellation *(Note 29)*	(11,840)	(130,472)	(1,701,807)	(267,051)
Repayment of notes payable	(95,565)	–	(1,945,620)	(305,310)
Profit distribution to non-controlling interest	–	–	(272)	(43)
Net cash generated from financing activities	461,557	4,163,255	967,577	151,833
Effect of foreign exchange rate changes on cash and cash equivalents and restricted cash	43,660	(229,064)	9,150	1,438
Net (decrease) increase in cash and cash equivalents and restricted cash	(303,844)	759,260	(1,407,964)	(220,940)
Cash and cash equivalents and restricted cash at beginning of year	2,661,021	2,357,177	3,116,437	489,037
Cash and cash equivalents and restricted cash at end of year	2,357,177	3,116,437	1,708,473	268,097
Reconciliation of cash and cash equivalents and restricted cash to the consolidated balance sheets				
Cash and cash equivalents	1,808,483	2,710,349	1,372,481	215,372
Restricted cash-current	478,873	270,450	327,767	51,434
Restricted cash-non-current	69,821	135,638	8,225	1,291
Total cash and cash equivalents and restricted cash	2,357,177	3,116,437	1,708,473	268,097
Supplemental disclosures of cash flow information:				
Income taxes paid	(41,684)	(102,330)	(82,995)	(13,024)
Interest paid	(215,889)	(284,270)	(259,765)	(40,763)
Interest received	59,054	37,817	30,121	4,727
Supplemental disclosures of non-cash activities:				
Right-of-use assets obtained in exchange for new operating lease liabilities	618,126	479,022	2,080,748	326,515
Purchase of property and equipment through finance leases	357,573	217,190	284,007	44,567
Purchase of property and equipment included in accrued expenses and other payables	344,248	591,187	321,140	50,394
Purchase of intangible assets included in accrued expenses and other payables	(1,642)	2,862	(129)	(20)

The accompanying notes are an integral part of these consolidated financial statements

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(Amounts in thousands of RMB and US$, except for number of shares)

	Notes	Number of Ordinary shares	Treasury Stock	Ordinary shares	Additional paid-in capital	Accumulated other comprehensive income	Statutory reserves	Accumulated deficit	Total VNET Group, Inc. shareholders' equity	non-controlling interest	Total shareholders' equity
Balance as of January 1, 2019		674,356,266	(337,683)	46	9,141,494	85,979	42,403	(3,838,032)	5,094,207	268,977	5,363,184
Consolidated net loss		–	–	–	–	–	–	(182,292)	(182,292)	1,046	(181,246)
Contribution by non-controlling interest		–	–	–	–	–	–	–	–	8,532	8,532
Foreign exchange difference		–	–	–	24	(8,075)	–	–	(8,051)	–	(8,051)
Issuance of new shares	*29*	60,000	–	–	572	–	–	–	572	–	572
Issuance of new shares for share option exercise and restricted share units vested	*29*	304,200	–	–	–	–	–	–	–	–	–
Share-based compensation		–	–	–	60,048	–	–	–	60,048	–	60,048
Appropriation of statutory reserves		–	–	–	–	–	18,066	(18,066)	–	–	–
Share issued to depository bank		6,700,002	–	–	–	–	–	–	–	–	–
Share repurchase		(1,456,980)	(11,840)	–	–	–	–	–	(11,840)	–	(11,840)
Share options exercised	*24*	33,869	–	–	429	–	–	–	429	–	429
Restricted share units vested		5,136,306	–	–	–	–	–	–	–	–	–
Settlement of share options and restricted share units with shares held by depository bank		(5,170,175)	–	–	–	–	–	–	–	–	–
Balance as of December 31, 2019		6 79,963,488	(349,523)	46	9,202,567	77,904	60,469	(4,038,390)	4,953,073	278,555	5,231,628

VNET GROUP, INC.
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY (CONTINUED)
(Amounts in thousands of RMB and US$, except for number of shares)

	Notes	Number of Ordinary shares	Treasury Stock	Ordinary shares	Additional paid-in capital	Series A perpetual convertible preferred shareholders	Accumulated other comprehensive income	Statutory reserves	Accumulated deficit	Total VNET Group, Inc. shareholders' equity	non-controlling interest	Total shareholders' equity
Balance as of January 1, 2020		679,963,488	(349,523)	46	9,202,567	–	77,904	60,469	(4,038,390)	4,953,073	278,555	5,231,628
Consolidated net loss		–	–	–	–	–	–	–	(2,709,347)	(2,709,347)	29,088	(2,680,259)
Contribution by non-controlling interest		–	–	–	–	–	–	–	–	–	24,903	24,903
Cumulative adjustment for changes in accounting policy		–	–	–	–	–	–	–	(2,740)	(2,740)	–	(2,740)
Issuance of new shares		118,754,028	–	8	2,680,283	–	–	–	–	2,680,291	–	2,680,291
Issuance of perpetual convertible preferred shares		–	–	–	–	1,047,468	–	–	–	1,047,468	–	1,047,468
Deemed distribution to perpetual convertible preferred shares		–	–	–	470,643	–	–	–	(470,643)	–	–	–
Foreign exchange difference		–	–	–	–	–	(133,439)	–	–	(133,439)	–	(133,439)
Cancellation of shares issued in prior years		(104,304)	–	–	–	–	–	–	–	–	–	–
Conversion of convertible promissory notes		23,710,140	–	2	717,606	–	–	–	–	717,608	–	717,608
Shares repurchase		(4,363,639)	–	–	(130,650)	–	–	–	–	(130,650)	–	(130,650)
Share-based compensation	*24*	–	–	–	139,641	–	–	–	–	139,641	–	139,641
Appropriation of statutory reserves		–	–	–	–	–	–	13,993	(13,993)	–	–	–
Share options exercised	*24*	459,168	–	–	3,029	–	–	–	–	3,029	–	3,029
Restricted share units vested		2,603,430	–	–	–	–	–	–	–	–	–	–
Settlement of share options and restricted share units with shares held by depository bank		(3,062,598)	–	–	–	–	–	–	–	–	–	–
Balance as of December 31, 2020		817,959,713	(349,523)	56	13,083,119	1,047,468	(55,535)	74,462	(7,235,113)	6,564,934	332,546	6,897,480

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY (CONTINUED)

(Amounts in thousands of RMB and US$, except for number of shares)

	Notes	Number of Ordinary shares	Treasury Stock	Ordinary shares	Additional paid-in capital	Series A perpetual convertible preferred shareholders	Accumulated other comprehensive income	Statutory reserves	Accumulated deficit	Total VNET Group, Inc. shareholders' equity	non-controlling interest	Total shareholders' equity
Balance as of January 1, 2021		817,959,713	(349,523)	56	13,083,119	1,047,468	(55,535)	74,462	(7,235,113)	6,564,934	332,546	6,897,480
Consolidated net income		–	–	–	–	–	–	–	500,098	500,098	15,003	515,101
Contribution by non-controlling interest		–	–	–	–	–	–	–	–	–	11,223	11,223
Conversion of perpetual convertible preferred shares and cumulative dividend		54,507,816	–	3	1,076,208	(1,047,468)	(106)	–	(28,637)	–	–	–
Foreign exchange difference		–	–	–	–	–	(22,773)	–	–	(22,773)	–	(22,773)
Conversion of convertible promissory notes		42,401,010	–	3	1,639,803	–	–	–	–	1,639,806	–	1,639,806
Shares repurchase		(48,634,493)	–	(3)	(866,400)	–	(12,029)	–	(826,458)	(1,704,890)	–	(1,704,890)
Share-based compensation	*24*	–	–	–	264,854	–	–	–	–	264,854	–	264,854
Issuance of new shares for share option exercise and restricted share units vested	*29*	16,680,000	–	1	(1)	–	–	–	–	–	–	–
Share issued to depositary bank		7,800,000	–	–	–	–	–	–	–	–	–	–
Appropriation of dividend		–	–	–	–	–	–	–	(272)	(272)	–	(272)
Share options exercised	*24*	86,862	–	–	472	–	–	–	–	472	–	472
Restricted share units vested		5,929,122	–	–	–	–	–	–	–	–	–	–
Settlement of share options and restricted share units with shares held by depository bank		(6,015,984)	–	–	–	–	–	–	–	–	–	–
Balance as of December 31, 2021		890,714,046	(349,523)	60	15,198,055	–	(90,443)	74,462	(7,590,382)	7,242,229	358,772	7,601,001
Balance as of December 31, 2021 US$		890,714,046	(54,848)	9	2,384,906	–	(14,192)	11,685	(1,191,097)	1,136,463	56,299	1,192,762

The accompanying notes are an integral part of these consolidated financial statements

VNET GROUP, INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of RMB and US$, unless otherwise stated)

1. ORGANIZATION

VNET Group, Inc. was incorporated under the laws of the Cayman Islands on October 16, 2009 and its principal activity is investment holding. On October 8, 2021, 21Vianet Group, Inc. changed its name to VNET Group, Inc. to promote brand awareness. The Company through its consolidated subsidiaries and variable interest entities (the "**VIEs**") are principally engaged in the provision of hosting and related services.

(a) As of December 31, 2021, the significant subsidiaries of the Company and significant consolidated variable interest entities are as follows:

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company Direct	Principal activities
Subsidiaries:				
VNET Group Limited ("**VNET HK**")	May 25, 2007	Hong Kong	100%	Investment holding
VNET Data Center Co., Ltd. ("**VNET China**") [(1)]	June 12, 2000	PRC	100%	Provision of technical and consultation services and rental of long-lived assets
VNET (Foshan) Technology Co., Ltd. ("**FS Technology**") [(1)]	December 20, 2011	PRC	100%	Trading of network equipment, provision of technical and internet data center services
VNET Anhui Suzhou Technology Co., Ltd. ("**SZ Technology**") [(1)]	November 16, 2011	PRC	100%	Trading of network equipment
VNET Hangzhou Information Technology Co., Ltd. ("**HZ Technology**") [(1)]	March 4, 2013	PRC	100%	Provision of internet data center services
iJoy Holding Limited ("**iJoy BVI**")	April 30, 2013	British Virgin Islands	100%	Investment holding
VNET Mobile Limited ("**VNET Mobile**")	April 30, 2013	Hong Kong	100%	Investment holding and provision of telecommunication services
WiFire Group Inc. ("**WiFire Group**")	March 7, 2014	British Virgin Islands	100%	Investment holding
Joytone Infotech Co., Ltd. ("**SZ Zhuoaiyi**") [(1)]	April 30, 2013	PRC	100%	Provision of technical and consultation services
VNET Ventures Limited ("**Ventures**")	March 6, 2014	Hong Kong	100%	Investment holding
Abitcool (China) Broadband Inc. ("**aBitCool DG**") [(1)]	June 13, 2014	PRC	100%	Dormant company
Diyixian.com Limited ("**DYX**")	August 10, 2014	Hong Kong	100%	Provision of virtual private network services
VNET Zhuhai Financial Leasing Co., Ltd. ("**Zhuhai Financial Leasing**") [(1)]	April 9, 2015	PRC	100%	Provision of finance leasing business services
VNET DRP Investment Holdings Limited ("**DRP investment**")	January 13, 2017	Hong Kong	100%	Investment holding
Shihua DC Investment Holdings Limited ("**Shihua Investment**")	March 14, 2017	Cayman Islands	51%	Investment holding
VNET (Xi'an) Technology Co., Ltd. ("**Xi'an Tech**") [(1)]	July 5, 2012	PRC	51%	Provision of technical and internet data center services
Foshan Zhuoyi Intelligence Data Co., Ltd. ("**FS Zhuoyi**") [(1)]	July 7, 2016	PRC	51%	Provision of internet data center services

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company Direct	Principal activities
Beijing Hongyuan Network Technology Co., Ltd. ("**BJ Hongyuan**") (1)	December 8, 2014	PRC	51%	Provision of internet data center services
Dermot Holdings Limited ("**Dermot BVI**") (3)	August 10, 2014	British Virgin Islands	100%	Investment holding
Shihua DC Investment Holdings 2 Limited ("**Shihua Holdings 2**") (4)	August 20, 2019	Cayman Islands	100%	Investment holding
Shanghai Waigaoqiao Free Trade Zone Gaogang Technology Co., Ltd. ("**Waigaoqiao Technology**") (1)/(4)	August 20, 2019	PRC	100%	Provision of internet data center services
Shanghai Edge Connect Technology Co., Ltd. ("**SH Edge Connect**") (1)	November 3, 2020	PRC	100%	Provision of technical and internet data center services
Beijing Jianghe Cloud Technology Co., Ltd. ("**BJ JHC**") (1)/(8)	November 17, 2020	PRC	100%	Provision of internet data center services
Beijing Shuntou Green Energy Data Technology Co., Ltd. ("**BJ ST**") (1)/(8)	November 17, 2020	PRC	100%	Provision of internet data center services
Jiwa Senlin (Beijing) Engineering Co., Ltd. ("**Jiwa Engineering BJ**") (1)	April 8, 2021	PRC	100%	Provision of internet data center services
Beijing TenxCloud Technology Co., Ltd. ("**BJ TenxCloud**") (1)/(9)	July 15, 2021	PRC	100%	Provision of digitalization solution services
Zhongke Zijing Technology Co., Ltd. ("**Zhongke Zijing**") (1)/(10)	August 16, 2021	PRC	100%	Provision of technical and consultation services
Gu'an Junhui Network Technology Co., Ltd. ("**Gu'an Junhui**") (1)/(10)	August 16, 2021	PRC	100%	Provision of internet data center services
Variable Interest Entities (the "VIEs"):				
Beijing Yiyun Network Technology Co., Ltd. ("**VNET Technology**") (2)	October 22, 2002	PRC	–	Provision of internet data center services
Beijing iJoy Information Technology Co., Ltd. ("**BJ iJoy**") (2)	April 30, 2013	PRC	–	Provision of internet data center, content delivery network services
WiFire Network Technology (Beijing) Co., Ltd. ("**WiFire Network**") (2)	April 1, 2014	PRC	–	Provision of telecommunication services
Shanghai Zhiyan Yunwei Technology Co., Ltd. ("**SH Zhiyan**") (2)	December 12, 2020	PRC	–	Provision of telecommunication services
Held directly by VNET Technology:				
Beijing VNET Broad Band Data Center Co., Ltd. ("**VNET Beijing**") (2)	March 15, 2006	PRC	–	Provision of internet data center services
Shanghai Shilian Technology Co., Ltd. ("**SH Shilian**")	October 22, 2012	PRC	–	Provision of internet data center services
Held directly by VNET Beijing:				
VNET (Xi'an) Information Outsourcing Industry Park Services Co., Ltd. ("**Xi'an Sub**") (2)	June 23, 2008	PRC	–	Provision of internet data center services
Langfang Xunchi Computer Data Processing Co., Ltd. ("**LF Xunchi**") (2)	December 19, 2011	PRC	–	Dormant company
Beijing Yilong Xinda Technology Co., Ltd. ("**Yilong Xinda**") (2)	February 28, 2013	PRC	–	Provision of internet data center services
Beijing Yichengtaihe Investment Co., Ltd. ("**BJ Yichengtaihe**") (2)	September 30, 2014	PRC	–	Provision of internet data center services
Guangzhou Lianyun Big Data Co., Ltd. ("**GZ Lianyun**") (2)	April 14, 2016	PRC	–	Provision of internet data center services
Beijing Xianghu Yunlian Technology Co., Ltd. ("**Xianghu Yunlian**") (2)	November 7, 2018	PRC	–	Provision of internet data center services
Shanghai Hujiang Songlian Technology Co., Ltd. ("**Hujiang Songlian**") (2)	December 17, 2018	PRC	–	Provision of internet data center services

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company Direct	Principal activities
Beijing Shuhai Hulian Technology Co., Ltd. ("**BJ Shuhai**") (2)	January 2, 2019	PRC	–	Provision of internet data center services
Nantong Chenghong Cloud Computing Co., Ltd. ("**NT Chenghong**") (2)	December 24, 2019	PRC	–	Provision of internet data center services
Held directly by SH Shilian:				
Shanghai Shuzhong Investment Management Co., Ltd. ("**SH Shuzhong**") (2)/(5)	June 30, 2020	PRC	–	Provision of internet data center services
Sanhe Shulifang Information Technology Co., Ltd. ("**Shulifang**") (2)/(6)	July 21, 2020	PRC	–	Provision of internet data center services
Langfang Huahai Internet Technology Co., Ltd. ("**LF Huahai**") (2)/(7)	September 11, 2020	PRC	–	Provision of internet data center services
Shanghai Hesheng Data System Co., Ltd. ("**SH Hesheng**") (2)/(11)	November 11, 2021	PRC	–	Provision of internet data center services
Held directly by SH Zhiyan:				
Shanghai Blue Cloud Technology Co., Ltd. ("**SH Blue Cloud**") (2)	March 21, 2013	PRC	–	Provision of Office 365 and Windows Azure platform services
Shanghai Edge Blue Cloud Network Technology Co., Ltd. ("**SH Edge Network**") (2)/(12)	January 7, 2021	PRC	–	Provision of internet data center services
Held directly by DYX and LF Xunchi:				
Shenzhen Diyixian Telecommunication Co., Ltd. ("**SZ DYX**") (1)	August 10, 2014	PRC	20%	Provision of virtual private network services

(1) Collectively, the "PRC Subsidiaries".

(2) Collectively, the "Consolidated VIEs".

(3) On August 10, 2014, the Company and its subsidiary, LF Xunchi, acquired 100% equity interest of Dermot BVI and its subsidiaries (collectively referred to as "**Dermot Entities**").

(4) On August 20, 2019, the Company through its subsidiary, DRP Investment, became the sole shareholder in Shihua Holding 2 and its subsidiaries.

(5) On June 30, 2020, the Company through its subsidiary, SH Shilian, acquired 100% equity interest of SH Shuzhong (Note 4).

(6) On July 21, 2020, the Company through its subsidiary, SH Shilian, acquired 100% equity interest of Shulifang (Note 4).

(7) On September 11, 2020, the Company through its subsidiaries, SH Shilian and Linkcloud PTE. Ltd. ("**Linkcloud**"), acquired 100% equity interest of LF Huahai (Note 4).

(8) On November 17, 2020, the Company through its subsidiary, VNET Saturn International Investment Limited ("**VNET Saturn**") and Beijing Zhongshun Yongfeng Investment Consulting Co., Ltd. ("**YF WFOE**"), acquired 100% equity interest of BJ JHC and BJ ST (Note 4).

(9) On July 15, 2021, the Company through its subsidiary, Shenzhen Cloud Native Technology Co., Ltd. ("**SZ Cloud Native**"), acquired 100% equity interest of BJ TenxCloud (Note 4).

(10) On August 16, 2021, the Company through its subsidiary, Jiwa Engineering BJ, acquired 100% equity interest of Zhongke Zijing and Gu'an Junhui (Note 4).

(11) On November 11, 2021, the Company through its subsidiary, SH Shilian, acquired 100% equity interest of SH Hesheng (Note 4).

(12) On January 7, 2021, the Company, through SH Zhiyan, established SH Edge Network for internet data center services.

(b) PRC laws and regulations prohibit foreign ownership of internet and telecommunications-related businesses. To comply with these foreign ownership restrictions, the Company conducts its businesses in the PRC through its VIEs using contractual agreements (the "**VIE Agreements**"). The Company controls four significant VIEs, namely VNET Technology, BJ iJoy, WiFire Network and SH Zhiyan as of December 31, 2021. The key terms of the VIE Agreements in relation to BJ iJoy, WiFire Network and SH Zhiyan are substantially similar to VNET Technology, except for the terms separately disclosed as below.

The equity interests of VNET Technology are legally held by certain PRC individuals, including Chen Sheng, the Executive Chairman of Board of Directors of the Company and Zhang Jun (collectively the "**Nominee Shareholders**". The following is a summary of the key terms of the VIE Agreements of VNET Technology:

Exclusive option agreement

Pursuant to the exclusive option agreement entered into amongst VNET China and the Nominee Shareholders of VNET Technology, the Nominee Shareholders granted the Company or its designated party, an exclusive irrevocable option to purchase all or part of the equity interests held by the Nominee Shareholders in VNET Technology, when and to the extent permitted under the PRC laws, at an amount equal to RMB1. VNET Technology cannot declare any profit distributions or grant loans in any form without the prior written consent of VNET China. The Nominee Shareholders must remit in full any funds received from VNET Technology to VNET China, in the event any distributions are made by VNET Technology. The term of this agreement is 10 years, expiring on December 18, 2016, which is renewable at the sole discretion of VNET China. On December 19, 2016, this agreement was renewed for another 10 years, expiring on December 18, 2026.

SH Zhiyan has substantially similar exclusive option agreement except that the term of SH Zhiyan will terminate when SH Edge Connect, the primary beneficiary, purchases all of SH Zhiyan's equity interest held by the Nominee Shareholder, Shanghai Rongyan Yunqi Technology Co., Ltd. ("**SH Rongyan**").

Exclusive technical consulting and service agreement

Pursuant to the exclusive technical consulting and service agreement entered into between VNET China and VNET Technology, VNET China is to provide exclusive management consulting services and internet technical services in return for fees based on of a predetermined hourly rate of RMB1, which is adjustable at the sole discretion of VNET China. The term of this agreement is 10 years, expiring on December 18, 2016, which is renewable at the sole discretion of VNET China. On December 19, 2016, this agreement was renewed for another 10 years, expiring on December 18, 2026.

SH Zhiyan has substantially similar exclusive technical consulting and service agreement except that the term for SH Zhiyan would be in effect for an unlimited term unless terminated in writing by SH Edge Connect, the primary beneficiary of VIE SH Zhiyan.

Loan agreement

In January 2011, VNET China and the Nominee Shareholders entered into a loan agreement. Pursuant to the agreement, VNET China has provided interest-free loan facilities of RMB7,000 and RMB3,000, respectively, to the Nominee Shareholders of VNET Technology for the purpose of providing capital to VNET Technology to develop its data center and telecommunications value-added business and related businesses. There is no fixed term for the loan.

The Nominee Shareholders of SH Zhiyan did not enter into any loan agreement to fund the capital injected in SH Zhiyan.

Power of attorney agreement

The Nominee Shareholders entered into the power of attorney agreement whereby they granted an irrevocable proxy of the voting rights underlying their respective equity interests in VNET Technology to VNET China, which includes, but are not limited to, all the shareholders' rights and voting rights empowered to the Nominee Shareholders by the company law and VNET Technology's Articles of Association. The power of attorney remains valid and irrevocable from the date of execution, so long as each Nominee Shareholder remains as a shareholder of VNET Technology.

The power of attorney agreement in relation to VNET Technology was reassigned to VNET Group, Inc. in September 2010.

Share pledge agreement

Pursuant to the share pledge agreement entered into amongst VNET China, VNET Technology and the Nominee Shareholders, the Nominee Shareholders have contemporaneously pledged all their equity interests in VNET Technology to guarantee the repayment of the loan under the Loan Agreement between VNET China and the Nominee Shareholders. On August 10, 2015, a Notification of Cancellation of share pledge registration was issued by Beijing Administration for Industry and Commerce, Pinggu Branch to cancel the registration of the share pledge by one of the Nominee Shareholders of VNET Technology, Zhang Jun. Such cancellation does not affect the effectiveness of the share pledge agreement and does not lessen the control imposed on the contractual parties of the Company.

If VNET Technology breaches its respective contractual obligations under the Share pledge agreement and the loan agreement, VNET China, as pledgee, will be entitled to certain rights, including the right to sell the pledged equity interests. The Nominee Shareholders agreed not to transfer, sell, pledge, dispose of or otherwise create any new encumbrance on their equity interests in VNET Technology without the prior written consent of VNET China.

SH Zhiyan has substantially similar term the Nominee Shareholders of SH Zhiyan did not enter into any loan agreement to fund the capital injected in SH Zhiyan as mentioned above.

Financial support letter

Pursuant to the financial support letter, VNET Group, Inc. agreed to provide unlimited financial support to VNET Technology for its operations and agreed to forego the right to seek repayment in the event VNET Technology is unable to repay such funding.

SH Zhiyan has substantially similar term except that SH Edge Connect provides unlimited financial support to SH Zhiyan for its operations.

Despite the lack of technical majority ownership, there exists a parent-subsidiary relationship between the Company and VNET Technology through the irrevocable power of attorney agreement, whereby the Nominee Shareholders effectively assigned all of their voting rights underlying their equity interests in VNET Technology to the Company. In addition, the Company, through VNET China, obtained effective control over VNET Technology through the ability to exercise all the rights of VNET Technology's shareholders pursuant to the share pledge agreement and exclusive option agreement. The Company demonstrates its ability and intention to continue to exercise the ability to absorb substantially all of the expected losses through the financial support letter. In addition, the Company also demonstrates its ability to receive substantially all of the economic benefits of VNET Technology through VNET China through the consulting and service agreement. Thus, the Company is the primary beneficiary of VNET Technology and consolidates VNET Technology and its subsidiaries under Accounting Standards Codification ("**ASC**") Subtopic 810-10, *Consolidation: Overall* ("**ASC 810-10**"). Similar conclusion has been reached with respect to the VIE structures with the Company or the Company's subsidiaries, as the respective primary beneficiaries for other VIEs, i.e., BJ iJoy, WiFire Network and SH Zhiyan.

In the opinion of the Company's management and PRC counsel, (i) the ownership structure of the VIEs is in compliance with applicable PRC laws and regulations in any material respect, and (ii) each of the VIE Agreements is valid, legally binding and enforceable to each party of such agreements under the existing PRC laws and will not violate any PRC laws or regulations currently in effect.

However, there are substantial uncertainties regarding the interpretation and application of current and future PRC laws and regulations. Accordingly, the Company cannot be assured that PRC regulatory authorities will not ultimately take a contrary view to its opinion. If the current ownership structure of the Company and its contractual arrangements with the VIEs are found to be in violation of any existing or future PRC laws and regulations, the Company may be required to restructure its ownership structure and operations in the PRC to comply with the changing and new PRC laws and regulations. To the extent that changes and new PRC laws and regulations prohibit the Company's VIE arrangements from complying with the principles of consolidation, the Company would have to deconsolidate the financial position and results of operations of its VIEs. In the opinion of management, the likelihood of loss in respect of the Company's current ownership structure or the contractual arrangements with the VIEs is remote based on current facts and circumstances.

(c) VIE disclosures

Except for certain property with carrying amounts of RMB451,293 (US$70,818) that were pledged to secure banking borrowings granted to the Company (Note 14), there were no pledges or collateralization of the Consolidated VIEs' assets. Creditors of the Consolidated VIEs have no recourse to the general credit of the primary beneficiaries of the Consolidated VIEs, and such amounts have been parenthetically presented on the face of the consolidated balance sheets. The Consolidated VIEs operate the data centers and own facilities including data center buildings, leasehold improvements, fiber optic cables, computers and network equipment, which are recognized in the Company's consolidated financial statements. They also hold certain value-added technology licenses, registered copyrights, trademarks and registered domain names, including the official website, which are also considered as revenue-producing assets. However, none of such assets was recorded on the Company's consolidated balance sheets as such assets were all acquired or internally developed with insignificant cost and expensed as incurred. In addition, the Company also hires data center operation and marketing workforce for its daily operations and such costs are expensed when incurred. The Company has not provided any financial or other support that it was not previously contractually required to provide to the Consolidated VIEs during the periods presented.

The following tables represent the financial information of the Consolidated VIEs as of December 31, 2020 and 2021 and for the years ended December 31, 2019, 2020 and 2021 before eliminating the intercompany balances and transactions between the Consolidated VIEs and other entities within the Company:

	As of December 31,		
	2020	**2021**	
	RMB	*RMB*	*US$*
ASSETS			
Current assets:			
Cash and cash equivalents	737,556	660,234	103,605
Restricted cash	260,450	317,199	49,775
Accounts receivable (net of allowance for doubtful debt of RMB67,632 and RMB82,654 (US$12,970) as of December 31, 2020 and 2021, respectively)	664,610	1,139,372	178,792
Prepaid expenses and other current assets	1,622,662	1,781,456	279,549
Amounts due from related parties	12,968	29,812	4,678
Total current assets	3,298,246	3,928,073	616,399
Non-current assets:			
Property and equipment, net	5,170,878	6,754,511	1,059,930
Intangible assets, net	342,288	382,173	59,971
Land use rights, net	46,719	45,476	7,136
Operating lease right-of-use assets, net	1,134,073	2,666,182	418,382
Goodwill	308,110	308,110	48,349
Restricted cash	27,719	7,825	1,228
Deferred tax assets, net	168,181	136,903	21,483
Amounts due from related parties	20,562	–	–
Other non-current assets	435,144	612,198	96,067
Long-term investments, net	172,593	133,280	20,915
Total non-current assets	7,826,267	11,046,658	1,733,461
Total assets	11,124,513	14,974,731	2,349,860

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Current liabilities:			
Short-term bank borrowings	34,000	–	–
Accounts payable and notes payable	182,669	352,478	55,311
Accrued expenses and other payables	981,961	1,342,886	210,728
Advance from customers	1,041,594	1,041,902	163,497
Deferred revenue	58,066	49,055	7,698
Income tax payable	12,743	20,972	3,291
Amounts due to inter-companies (1)	4,248,422	5,203,974	816,617
Amounts due to related parties	50,193	8,007	1,256
Current portion of finance lease liabilities	362,760	200,961	31,535
Current portion of long-term borrowings	165,328	350,609	55,018
Current portion of deferred government grant	2,074	2,074	325
Current portion of operating lease liabilities	427,114	579,391	90,919
Total current liabilities	7,566,924	9,152,309	1,436,195
Non-current liabilities:			
Amounts due to inter-companies (1)	1,020,972	1,020,972	160,213
Amounts due to related parties	747,746	–	–
Long-term borrowings	570,135	1,480,709	232,356
Non-current portion of finance lease liabilities	299,399	704,255	110,513
Unrecognized tax benefits	68,317	77,192	12,113
Deferred tax liabilities	155,281	132,370	20,772
Non-current portion of deferred government grant	4,100	2,294	360
Non-current portion of operating lease liabilities	497,268	2,114,309	331,781
Total non-current liabilities	3,363,218	5,532,101	868,108
Total liabilities	10,930,142	14,684,410	2,304,303

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Net revenues	2,858,176	3,885,141	5,145,110	807,380
Net profit	111,592	73,748	92,594	14,530

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Net cash generated from operating activities	495,308	748,418	866,712	136,006
Net cash used in investing activities	(1,247,764)	(1,943,358)	(2,695,707)	(423,015)
Net cash generated from financing activities	885,286	1,302,082	1,788,528	280,659
Net increase (decrease) in cash and cash equivalents and restricted cash	132,830	107,142	(40,467)	(6,350)

(1) Amounts due to inter-companies consist of intercompany payables to the other companies within the Company for the purchase of telecommunication resources and property and equipment on behalf of the Consolidated VIEs.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) Basis of presentation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("**U.S. GAAP**").

(b) Principles of consolidation

The consolidated financial statements include the financial statements of the Company, its subsidiaries and the Consolidated VIEs for which the Company or a subsidiary of the Company is the primary beneficiary. All significant inter-company transactions and balances between the Company, its subsidiaries and the Consolidated VIEs are eliminated upon consolidation. Results of acquired subsidiaries and its Consolidated VIEs are consolidated from the date on which control is transferred to the Company.

(c) Use of estimates

The preparation of the consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the period. Significant estimates and assumptions reflected in the Company's financial statements include, but are not limited to, determining the valuation allowance for deferred tax assets and determining the fair value of convertible promissory notes. Changes in facts and circumstances may result in revised estimates. Given the global economic climate and unforeseen effects from COVID-19 pandemic, the process of estimation has become more challenging. Actual results could differ from those estimates, and as such, differences may be material to the consolidated financial statements.

(d) Foreign currency

The functional currency of the Company and its overseas subsidiaries is the United States dollar ("**US$**"), whereas the functional currency of the Company's PRC subsidiaries and its Consolidated VIEs is the Chinese Renminbi ("**RMB**") as determined based on the criteria of ASC Topic 830, *Foreign Currency Matters* ("**ASC 830**"). The Company uses the RMB as its reporting currency.

The financial statements of the Company and its overseas subsidiaries are translated from the functional currency to the reporting currency, RMB. Transactions denominated in foreign currencies are re-measured into the functional currency at the exchange rates prevailing on the transaction dates. Monetary assets and liabilities denominated in foreign currencies are re-measured at the exchange rates prevailing at the balance sheet date. Non-monetary items that are measured in terms of historical costs in foreign currency are re-measured using the exchange rates at the dates of the initial transactions. Exchange gains and losses are included in the consolidated statements of operations.

The Company uses the average exchange rate for the year and the exchange rate at the balance sheet date to translate the operating results and financial position, respectively. Translation differences are recorded in other comprehensive loss within the statements of comprehensive (loss) income.

(e) Convenience translation

Amounts in US$ are presented for the convenience of the reader and are translated at the noon buying rate of US$1.00 to RMB6.3726 on December 30, 2021, the last business day in fiscal year 2021, representing the noon buying rate set forth in the H.10 statistical release of the U.S. Federal Reserve Board. No representation is made that the RMB amounts could have been, or could be converted, realized or settled into US$ at such rate or at any other rate.

(f) Cash and cash equivalents

Cash and cash equivalents consist of cash on hand and demand deposits placed with banks which are unrestricted as to withdrawal and use and have original maturities less than three months. All highly liquid investments with a stated maturity of 90 days or less from the date of purchase are classified as cash equivalents.

(g) Restricted cash

Restricted cash mainly represents amounts held by a few banks in escrow as security for credit facilities, the guarantee of compliance with the network and service requirements of the radio spectrum license awarded by the Hong Kong Telecommunication Authority, the deposits for finance lease, the deposits for a lawsuit with a third party, the deposits held in escrow for the advances received from end customers subscribing Office 365 and Windows Azure services (the disbursement of which shall be agreed by both Microsoft (China) Co., Ltd. ("**Microsoft**") and the Company), the deposits for business operation, the deposits for loans.

(h) Short-term investments

All highly liquid investments with original maturities of greater than three months but less than twelve months, are classified as short-term investments. Interest income is included in earnings.

(i) Accounts receivable and allowance for doubtful debt

On January 1, 2020, the Company adopted ASC326, *Financial Instruments-Credit Losses* ("**ASC326**"), using modified-retrospective transition approach. Following the adoption of this guidance, a cumulative-effect adjustment in accumulated deficit of RMB2,740 was recognized as of January 1, 2020. For the year ended December 31, 2020 and 2021, the Company recorded credit losses of RMB2,393 and RMB18,399 (US$2,887), respectively.

Pursuant to ASC 326, an allowance for credit losses for financial assets, including accounts receivable, carried at amortized cost to present the net amount expected to be collected as of the balance sheet date. Such allowance is based on credit losses expected to arise over the life of the asset's contractual term, which includes consideration of prepayments. Assets are written off when the Company determines that such financial assets are deemed uncollectible and are recognized as a deduction from the allowance for credit losses. Expected recoveries of amounts previously written off, not to exceed the aggregate of the amount previously written off, are included in determining the necessary reserve at the balance sheet date. The Company pools financial assets based on similar risk characteristics to estimate expected credit losses. The Company estimates expected credit losses on financial assets individually when those assets do not share similar risk characteristics. The Company closely monitors its accounts receivable including timely account reconciliations, detailed reviews of past due accounts, updated credit limits, and monthly analysis of the adequacy of their reserve for credit losses.

The Company utilizes a loss rate approach to determine lifetime expected credit losses for its financial assets. This method is used for calculating an estimate of losses based primarily on the Company's historical loss experience. In determining loss rates, the Company evaluates information related to historical losses, adjusted for current conditions and further adjusted for the period of time that the Company can reasonably forecast. The Company has concluded that it can reasonably support a forecast period for the contractual life of its financial assets. Qualitative and quantitative adjustments related to current conditions and the reasonable and supportable forecast period consider the following: the customer or vendor's creditworthiness, changes in the policy and procedures to establish customer credit limits, changes in the payment terms of receivables, existence and effect of any concentration of credit and changes in the level of such concentrations, and the effects of other external forces such as the current and forecasted direction of the economic and business environment.

(j) Property and equipment

Property and equipment are stated at cost less accumulated depreciation and any recorded impairment. Property and equipment acquired in a business combination are recognized initially at fair value at the data of acquisition. Property and equipment are depreciated using the straight-line method over the estimated useful lives of the assets, as follows:

Category	**Estimated useful life**
Property	25-46 years
Leasehold improvements	Over the shorter of lease term or the estimated useful lives of the assets
Optical fibers	10-20 years
Computer and network equipment	1-10 years
Office equipment	2-8 years
Motor vehicles	2-8 years

Repair and maintenance costs are charged to expense as incurred, whereas the costs of betterments that extend the useful life of property and equipment are capitalized as additions to the related assets. Retirements, sale and disposals of assets are recorded by removing the cost and accumulated depreciation with any resulting gain or loss reflected in the consolidated statements of operations.

Property and equipment that are purchased or constructed which require a period of time before the assets are ready for their intended use are accounted for as construction-in-progress. Construction-in-progress is recorded at acquisition cost, including installation costs. Construction-in-progress is transferred to specific property and equipment accounts and commences depreciation when these assets are ready for their intended use.

(k) Intangible assets

Intangible assets are carried at cost less accumulated amortization and any recorded impairment. Intangible assets acquired in a business combination are recognized initially at fair value at the date of acquisition. Intangible assets with finite useful lives are amortized using a straight-line method. These amortization methods reflect the estimated pattern in which the economic benefits of the respective intangible assets are to be consumed.

The Company has capitalized certain internal use software development costs in accordance with ASC Subtopic 350-40, *Intangibles-Goodwill and Other: Internal-Use Software* ("**ASC 350-40**"), amounting to RMB13,189, RMB8,684, and RMB11,422 (US$1,792) for the years ended December 31, 2019, 2020 and 2021, respectively. The Company capitalizes certain costs relating to software acquired, developed, or modified solely to meet the Company's internal requirements and for which there are no substantive plans to market the software. These costs mainly include the research staff costs directly associated with the internal-develop software projects during the application development stage. Capitalized internal-use software costs are included in "intangible assets, net".

Intangible assets have weighted average useful lives from the date of purchase/acquisition as follows:

Purchased software	5.3 years
Radio spectrum license	15 years
Operating permits*	33.6 years
Customer relationships*	8.3 years
Licenses*	15 years
Supplier relationships*	10 years
Trade Names*	20 years
Platform software*	5 years
Non-complete agreements*	5 years
Internal use software	3.7 years
Customer contract*	6.2 years

* *Acquired in the acquisitions of subsidiaries.*

(l) Leases

Effective January 1, 2019, the Company adopted ASC Topic 842, *Lease* ("**ASC 842**") using the modified retrospective method and did not restate the comparable periods. The Company determines if an arrangement is a lease at inception. Leases are classified as operating or finance leases in accordance with the recognition criteria in ASC 842-20-25. The Company's leases do not contain any material residual value guarantees or material restrictive covenants.

The Company has elected the package of practical expedients, which allows the Company not to reassess (1) whether any expired or existing contracts as of the adoption date are or contain a lease, (2) lease classification for any expired or existing leases as of the adoption date and (3) initial direct costs for any expired or existing leases as of the adoption date. The Company has lease agreements with lease and non-lease components, which are generally accounted for separately. Lastly, the Company elected the short-term lease exemption for all contracts with lease term of 12 months or less.

At the commencement date of a lease, the Company determines the classification of the lease based on the relevant factors present and records a right- of-use ("**ROU**") asset and lease liability for operating lease, and records property and equipment and finance lease liability for finance lease. ROU assets and property and equipment acquired through lease represent the right to use an underlying asset for the lease term, and operating lease liabilities and finance lease liabilities represent the obligation to make lease payments arising from the lease. ROU assets and lease liabilities are calculated as the present value of the lease payments not yet paid. If the rate implicit in the Company's leases is not readily available, the Company uses an incremental borrowing rate based on the information available at the lease commencement date in determining the present value of lease payments. This incremental borrowing rate reflects the fixed rate at which the Company could borrow on a collateralized basis the amount of the lease payments in the same currency, for a similar term, in a similar economic environment. ROU assets include any lease prepayments and are reduced by lease incentives. Operating lease expense for lease payments is recognized on a straight-line basis over the lease term. Lease terms are based on the non-cancelable term of the lease and may contain options to extend the lease when it is reasonably certain that the Company will exercise that option.

Leases with an initial lease term of 12 months or less are not recorded on the consolidated balance sheets. Lease expense for these leases is recognized on a straight-line basis over the lease term.

(m) Land use right

The land use rights represent the operating lease prepayments for the rights to use the land in the PRC under ASC 842. Amortization of the prepayments is provided on a straight-line basis over the terms of the respective land use rights certificates.

(n) Long-term investments

The Company's long-term investments primarily consist of equity investments without readily determinable fair value, equity method investments.

Pursuant to ASC Topic 321, *Investments–Equity Securities (*"**ASC 321**"), equity investments, except for those accounted for under the equity method and those that result in consolidation of the investee and certain other investments, are measured at fair value, and any changes in fair value are recognized in earnings. For equity securities without readily determinable fair value and do not qualify for the existing practical expedient in ASC Topic 820, *Fair Value Measurements and Disclosures* ("**ASC 820**"), to estimate fair value using the net asset value per share (or its equivalent) of the investment, the Company elected to use the measurement alternative to measure those investments at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer, if any. Equity securities with readily determinable fair value are measured at fair values, and any changes in fair value are recognized in earnings.

For equity investments measured at fair value with changes in fair value recorded in earnings, the Company does not assess whether those securities are impaired. For those equity investments that the Company elects to use the measurement alternative, the Company makes a qualitative assessment of whether the investment is impaired at each reporting date. If a qualitative assessment indicates that the investment is impaired, the entity has to estimate the investment's fair value in accordance with the principles of ASC 820. If the fair value is less than the investment's carrying value, the entity has to recognize an impairment loss in net loss equal to the difference between the carrying value and fair value.

Investments in equity investees represent investments in entities in which the Company can exercise significant influence but does not own a majority equity interest or control are accounted for using the equity method of accounting in accordance with ASC Subtopic 323-10, *Investments-Equity Method and Joint Ventures: Overall* ("**ASC 323-10**"). The Company applies the equity method of accounting that is consistent with ASC 323-10 in limited partnerships in which the Company holds a three percent or greater interest. Under the equity method, the Company initially records its investment at cost and prospectively recognizes its proportionate share of each equity investee's net profit or loss into its consolidated statements of operations. The difference between the cost of the equity investee and the amount of the underlying equity in the net assets of the equity investee is recognized as equity method goodwill included in equity method investments on the consolidated balance sheets. The Company evaluates its equity method investments for impairment under ASC 323-10. An impairment loss on the equity method investments is recognized in the consolidated statements of operations when the decline in value is determined to be other-than-temporary.

(o) Goodwill

Goodwill represents the excess of the purchase price over the amounts assigned to the fair value of the assets acquired and the liabilities assumed of an acquired business. The Company assesses goodwill for impairment in accordance with ASC Subtopic 350-20, *Intangibles–Goodwill and Other: Goodwill* ("**ASC 350-20**"), which requires that goodwill to be tested for impairment at the reporting unit level at least annually and more frequently upon the occurrence of certain events, as defined by ASC 350-20.

The Company has the option to assess qualitative factors first to determine whether it is necessary to perform the quantitative test in accordance with ASC 350-20. In the qualitative assessment, the Company considers primary factors such as industry and market considerations, overall financial performance of the reporting unit, and other specific information related to the operations. If the Company believes, as a result of the qualitative assessment, that it is more-likely-than-not that the fair value of the reporting unit is less than its carrying amount, the quantitative impairment test described above is required. Otherwise, no further testing is required. The quantitative impairment test compares the fair value of the reporting unit with its carrying amount, including goodwill. If the carrying amount of a reporting unit exceeds its fair value, an impairment loss shall be recognized in an amount equal to that excess.

Pursuant to ASC 350-20, in 2020 and 2021, the Company performed assessment and completed its annual impairment test for goodwill that has arisen out of its acquisitions. No impairment loss of goodwill was recognized for the years ended December 31, 2019, 2020 and 2021.

(p) Impairment of long-lived assets

The Company evaluates long-lived assets, such as fixed assets and purchased or internally developed intangible assets with finite lives for impairment whenever events or changes in circumstances indicate the carrying value of an asset may not be recoverable in accordance with ASC Topic 360, *Property, Plant and Equipment.* When such events occur, the Company assesses the recoverability of the asset group based on the undiscounted future cash flows the asset group is expected to generate and recognizes an impairment loss when estimated undiscounted future cash flows expected to result from the use of the asset group plus net proceeds expected from disposition of the asset group, if any, is less than the carrying value of the asset group. If the Company identifies an impairment, the Company reduces the carrying amount of the asset group to its estimated fair value based on a discounted cash flow approach or, when available and appropriate, to comparable market values and the impairment loss, if any, is recognized in the consolidated statements of operations.

As of December 31, 2020 and 2021, due to continuing losses and physical condition changed, the Company recorded the long-lived assets impairment amounting to RMB81,619 and RMB109,267 (US$17,146) for relative asset groups, respectively, resulting from excess of the carrying amount of the asset group over the fair value of the asset group. The Company determined the fair value of the asset group using the income approach based on the discounted cash flows associated with the asset group. In 2020, the discounted cash flows were based on a six-year projection for the asset group, which is consistent with the remaining useful life of its principal asset. The discount rate of 13% was derived and used in the valuations which reflect the market assessment of the risks specific to the Company and its industry and is based on its weighted average cost of capital. In 2021, the Company provided full impairment for relative asset groups considering the fair value is immaterial. No impairment was recognized in other asset groups as there was no impairment indicator identified.

The impairment loss reduced the carrying amount of the long-lived assets of the group on a pro-rata basis using the relative carrying amount of those assets except that the loss allocated to an individual long-lived asset of the group shall not reduce the carrying amount of that asset below its fair value whenever that fair value is determinable without undue cost and effort.

The Company recorded impairment charges associated with its long-lived assets and acquired intangibles as follows:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Impairment of property and equipment	–	35,793	106,311	16,683
Impairment of intangible assets	–	38,654	–	–
Impairment of other non-current assets	–	7,172	2,956	463

(q) Fair value of financial instruments

The Company's financial instruments include cash and cash equivalents, restricted cash, short-term investments, accounts receivable and payable, other receivables and payables, bonds payable, short-term and long-term borrowings, available-for-sale investments and convertible promissory notes. Other than the bonds payable, long-term borrowings and convertible promissory notes, the carrying values of these financial instruments approximate their fair values due to their short-term maturities.

The carrying amounts of bonds payable, long-term borrowings and 2026 Convertible Notes (Note 19) approximate their fair values since they bear interest rates which approximate market interest rates. The Company carries the bonds payable at face value less unamortized debt discount and issuance cost on its consolidated balance sheets and measures the fair value for disclosure purposes only. The Company elected the fair value option of 2025 Convertible Notes (Note 19) when it initially recognized as financial liability as the fair value better represents the value of the underlying liabilities. The purchase consideration and contingent purchase considerations in both cash and shares are initially measured at fair value on the acquisition dates of the acquired businesses and the date of grant, respectively, and subsequently remeasured at the end of each reporting period with an adjustment for fair value recorded to the current period income/(expense). Convertible promissory notes are measured at fair value in accordance with ASC 825, *Financial Instruments* on the issuance date and subsequently remeasured at the end of each reporting period with an adjustment for fair value recorded to the current period income/(expense), however, any fair value changes related to instrument-specific credit risk are recorded to other comprehensive income/(loss).

(r) Revenue recognition

The Company provides hosting and related services including hosting of customers' servers and networking equipment, connecting customers' servers with internet backbones ("**Hosting service**"), virtual private network services providing encrypted secured connection to public internet ("**VPN service**") and other value-added services and public cloud service through strategic partnership with Microsoft.

The Company recognizes revenue as it satisfies a performance obligation when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of ASC Topic 606, *Revenue from Contracts with Customers* ("**ASC 606**"), the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price, including variable consideration, if any; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect the consideration to which it is entitled in exchange for the goods or services it transfers to the customer.

Once a contract is determined to be within the scope of ASC 606 at contract inception, the Company reviews the contract to determine which performance obligations it must deliver and which of these performance obligations are distinct. The Company recognizes revenue based on the amount of the transaction price that is allocated to each performance obligation when that performance obligation is satisfied or as it is satisfied.

The Company is a principal and records revenue on a gross basis when the Company is primarily responsible for fulfilling the service, has discretion in establishing pricing and controls the promised service before transferring that service to customers. Otherwise, the Company records revenue at the net amounts as commissions.

The Company's revenue recognition policies are as follows:

Hosting services are services that the Company dedicates data center space to house customers' servers and networking equipment and provides tailored server administration services including operating system support and assistance with updates, server monitoring, server backup and restoration, server security evaluation, firewall services, and disaster recovery. The Company also provides interconnectivity services to connect customers with each other, internet backbones in China and other networks through Border Gateway Protocol, or BGP, network, or single-line, dual- line or multiple-line networks. Through the acquisition of BJ TenxCloud in 2021, the Company also provides digitalization solution services based on in-house developed cloud native platform to customers as an expanded value-added service of its Hosting services. Hosting services are typically provided to customers for a fixed amount over the contract service period and the related revenues are recognized on a straight-line basis over the term of the contract. For certain contracts where considerations are based on the usage of the Hosting services, the related revenues are recognized based on the consumption at the predetermined rate as the services are rendered throughout the contact term. For the digitalization solution services provided from 2021, the Company primarily fulfills its performance obligation by delivering the customized cloud native platform and the revenue is recognized at the point in time when the platform is accepted by the customer. The Company is a principal and records revenue for Hosting service on a gross basis.

VPN services are services that the Company extends customers' private networks by setting up secure and dedicated connections through the public internet. VPN services are provided to customers for a fixed amount over the contract service period and revenue are recognized on a straight-line basis over the term of the contract. The Company is a principal and records revenue for VPN service on a gross basis.

The Company partners with Microsoft to provide Cloud services that allow enterprise and individual customers to run their applications over the internet using the IT infrastructure. Cloud services are generally charged by the Company to the end customers for a fixed amount or based on the actual usage of the cloud resources at predetermined rates over the subscription period, which in general is one year. The Company fulfils its performance obligation of facilitating Microsoft to provide the Cloud services to the end customers by providing, but not limited to, contract processing management, billing, payment collection, maintenance, help desk supports and certain IT infrastructure services. These are considered as a series of distinct services that are substantially the same and have the same pattern of transfer to the customer; therefore, they are accounted for as a single performance obligation that is satisfied over time. The corresponding consideration that the Company is entitled to is recognized as revenue using a time-based method since this best depicts the pattern of the control transfer. Revenue from Cloud services consists of monthly incentive revenues received from Microsoft upon completion of certain conditions and gross billing amount received from end customers net of considerations remitted by the Company to Microsoft. When the contract is modified to add distinct services to the single performance obligation for additional fees, such changes are accounted for prospectively as a termination of the old contract and the creation of a new contract.

For certain arrangements, customers are required to pay the Company before the services are delivered. When either party to a revenue contract has performed, the Company recognizes a contract asset or a contract liability in the consolidated balance sheets, depending on the relationship between the Company's performance and the customer's payment. Contract liabilities were mainly related to fee received for Hosting services to be provided over the contract period, which were presented as deferred revenue on the consolidated balance sheets.

Deferred revenue represented the Company's obligation to transfer the goods or services to a customer for which the Company has received consideration (or an amount of consideration is due) from the customer. As of December 31, 2020 and 2021, the Company has deferred revenue amounting up to RMB63,245 and RMB55,695 (US$8,740), respectively. Revenue recognized from opening deferred revenue balance was RMB53,499 (US$8,395) for the year ended December 31, 2021.

The Company's certain Hosting service contains lease and non-lease components. The Company elected to adopt the practical expedient which allows lessors to combine lease and non-lease components and account for them as one component if 1) the timing and pattern of transfer of the lease component and non-lease component is the same; 2) the lease component should be classified as an operating lease if it were accounted for separately. The combined component is accounted for in accordance with the current lease accounting guidance ("**ASC 842**") if the lease component is predominant, and in accordance with the ASC 606 if the non-lease component is predominant. The Company has determined that the non-lease component is the predominant component in Hosting service. Therefore, the Company has accounted for the combined component in accordance with ASC 606.

The Company does not disclose the value of unsatisfied performance obligations as the Company's revenue contracts are (i) contracts with an original expected length of one year or less or (ii) contracts for which the Company recognizes revenue at the amount to which it has the right to invoice for services performed.

(s) Cost of revenues

Cost of revenues consists primarily of telecommunication costs, depreciation of the Company's long-lived assets, amortization of acquired intangible assets, maintenance, data center rental expenses directly attributable to the provision of the IDC services, payroll and other related costs of operations.

(t) Advertising expenditures

Advertising expenditures are expensed as incurred and are included in sales and marketing expenses, which amounted to RMB6,095, RMB7,779 and RMB7,272 (US$1,141) for the years ended December 31, 2019, 2020 and 2021, respectively.

(u) Research and development expenses

Research and development expenses consist primarily of payroll and related personnel costs for routine upgrades and related enhancements of the Company's services and network. Research and development expenses are expensed as incurred except for costs to develop internal-use software or add significant upgrades and enhancements resulting in additional functionality to internal-use software that meet the capitalization criteria in accordance with ASC Subtopic 350-40, *Intangibles-Goodwill and Other, Internal-Use Software.*

(v) Government grants

Government grants are provided by the relevant PRC municipal government authorities to subsidize the cost of certain research and development projects. The amount of such government grants is determined solely at the discretion of the relevant government authorities and there is no assurance that the Company will continue to receive these government grants in the future. Government grants are recognized when it is probable that the Company will comply with the conditions attached to them, and the grants are received. When the grant relates to an expense item, it is recognized in the consolidated statement of operations over the period necessary to match the grant on a systematic basis to the costs that it is intended to compensate, as a reduction of the related operating expense. When the grant relates to an asset, it is recognized as deferred government grants and released to the consolidated statement of operations in equal amounts over the expected useful life of the related asset, when operational, as a reduction of the related depreciation expense.

(w) Capitalized interest

Interest costs are capitalized if they are incurred during the acquisition, construction or production of a qualifying asset and such costs could have been avoided if expenditures for these assets have not been made.

As a result of total interest costs capitalized during the period, the interest expense for the years ended December 31, 2019, 2020 and 2021, was as follows:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Interest expense and amortization cost of bonds payable	223,832	223,785	133,959	21,021
Interest expense and amortization cost of 2025 and 2026 Convertible Notes *(Note 19)*	–	18,880	25,919	4,067
Interest expense on bank and other borrowings	14,212	39,424	103,925	16,308
Interest expense on finance leases	120,185	130,196	124,567	19,547
Total interest costs	358,229	412,285	388,370	60,943
Less: Total interest costs capitalized	(12,274)	(31,676)	(53,420)	(8,382)
Interest expense, net	345,955	380,609	334,950	52,561

(x) Income taxes

The Company accounts for income taxes using the liability method. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial reporting and tax bases of assets and liabilities using enacted tax rates that will be in effect in the period in which the differences are expected to reverse. The carrying amount of deferred tax assets is reviewed on an entity-by-entity basis and is reduced by a valuation allowance to the extent that it is more-likely-than-not that the benefits of the deferred tax assets will not be realized in future years. The valuation allowance is determined based on the weight of positive and negative evidence including future reversals of existing taxable temporary differences, future taxable income exclusive of reversing temporary differences, and verifiable tax planning. The estimated future taxable income involves significant assumptions of forecasted revenue growth that take into consideration of the Company's historical financial results, its plan of expanding operating capacity as well as current industry trends. The effect on deferred taxes of a change in tax rates is recognized in income in the period that includes the enactment date of the change in tax rate. All deferred income tax assets and liabilities are classified as non-current on the consolidated balance sheets.

The Company applies ASC Topic 740, *Accounting for Income Taxes* ("**ASC 740**"), to account for uncertainty in income taxes. ASC 740 prescribes a recognition threshold a tax position is required to meet before being recognized in the financial statements.

The Company has elected to classify interest and penalties related to unrecognized tax benefits, if and when required, as part of "income tax expenses" in the consolidated statements of operations.

(y) Share-based compensation

Share options and Restricted Share Units ("**RSUs**") granted to employees are accounted for under ASC Topic 718, *Compensation–Stock Compensation* ("**ASC 718**"), which requires that share-based awards granted to employees be measured based on the grant date fair value and recognized as compensation expenses over the requisite service period and/or performance period (which is generally the vesting period) in the consolidated statements of operations. The Company accounts for forfeitures as they occur.

The Company has elected to recognize compensation expenses using the straight-line method for share-based awards granted with service conditions that have a graded vesting schedule. For share-based awards granted with performance conditions, the Company recognizes compensation expenses using the accelerated method. The Company commences recognition of the related compensation expenses if it is probable that the defined performance condition will be met. To the extent that the Company determines that it is probable that a different number of share-based awards will vest depending on the outcome of the performance condition, the cumulative effect of the change in estimate is recognized in the period of change. For share-based awards with market conditions, the probability to achieve market conditions is reflected in the grant date fair value. The Company recognized the related compensation expenses when the requisite service is rendered using the accelerate method.

On November 26, 2016, the Board approved a new incentive program to certain individuals with a new bonus scheme which will be settled by issuing a variable number of shares with a fair value equal to fixed dollar amount on the settlement date. The Company remeasures the fair value of such liability at each reporting period end through earnings until the actual settlement date, which is the date when the number of underlying shares were fixed and recorded the compensation cost over the remaining vesting term.

A cancellation of the terms or conditions of an equity award under original award in exchange for a new award should be treated as modification. The compensation costs associated with the modified awards are recognized if either the original vesting conditions or the new vesting conditions have been achieved. Total recognized compensation cost for the awards is at least equal to the fair value of the original awards at the grant date unless at the date of the modification the performance or service conditions of the original awards are not expected to be satisfied. The incremental compensation cost is measured as the excess of the fair value of the replacement awards over the fair value of original awards at the modification date. Therefore, in relation to the modified awards, the Company recognizes share-based compensation over the vesting periods of the new awards, which comprises (i) the amortization of the incremental portion of share-based compensation over the remaining vesting term, and (ii) any unrecognized compensation cost of original awards, using either the original term or the new term, whichever results in higher expenses for each reporting period. For a modification of a market condition, the incremental portion of share-based compensation and unrecognized compensation cost of original award are recognized over new vesting period. For modification of a liability award that remains a liability after modification, the liability award continues to be remeasured at fair value at each reporting date.

(z) (Loss) Earnings per share

In accordance with ASC Topic 260, *Earnings per Share* ("**ASC 260**"), basic (loss) earnings per share is computed by dividing net (loss) earnings attributable to ordinary shareholders by the weighted average number of unrestricted ordinary shares outstanding during the year using two-class method. Under the two-class method, net (loss) earnings is allocated between ordinary shares and participating securities based on their participating rights. The Company's series A preferred shares (Note 18) are participating securities. Diluted loss per share is calculated by dividing net loss attributable to ordinary shareholders using two-class method as adjusted for the effect of dilutive ordinary equivalent shares, if any, by the weighted average number of ordinary and dilutive ordinary equivalent shares outstanding during the period. Contingently issuable shares, including performance-based share awards and contingent considerations to be settled in shares, are included in the computation of basic (loss) earnings per share only when there is no circumstance under which those shares would not be issued. Contingently issuable shares are included in the denominator of the diluted loss per share calculation as of the beginning of the period or as of the inception date of the contingent share arrangement, if later, only when dilutive and when all the necessary conditions have been satisfied as of the reporting period end. For contracts that may be settled in ordinary shares or in cash at the election of the Company, share settlement is presumed, pursuant to which incremental shares relating to the number of shares that would be required to settle the contract are included in the denominator of diluted loss per share calculation if the effect is more dilutive. Ordinary equivalent shares consist of the ordinary shares issuable upon the exercise of the share options, using the treasury stock method and shares issuable upon the conversion of the company's series A preferred shares and convertible promissory notes using if converted method. Ordinary share equivalents are excluded from the computation of diluted loss per share if their effects would be anti-dilutive.

(aa) Share repurchase program

Pursuant to the Board of Directors' resolutions on December 2, 2019, the Company's management is authorized to repurchase, in one or more tranches, up to an aggregate of US$20,000 of its own outstanding shares (including shares represented by ADSs) (each such transaction a "**Repurchase**") over a period of 13 months ended on December 31, 2020.

The Company accounted for the repurchased shares as Treasury Stock at cost in accordance to ASC Subtopic 505-30, *Treasury Stock* ("**ASC 505-30**"), and the share repurchase is shown separately in the consolidated statement of shareholder's equity, as the Company has not yet decided on the ultimate disposition of those ADSs acquired. When the Company decides to retire the treasury stock, the difference between the original issuance price and the repurchase price is debited into accumulated deficit.

For the years ended December 31, 2019 and 2020, the Company repurchased 242,830 and nil ADSs under above program for a consideration of RMB11,840 and nil, respectively.

(bb) Comprehensive (loss) income

Comprehensive (loss) income is defined as the (decrease) increase in equity of the Company during a period from transactions and other events and circumstances excluding transactions resulting from investments by owners and distributions to owners. Accumulated other comprehensive loss of the Company includes only foreign currency translation adjustments related to the Company and its overseas subsidiaries, whose functional currency is US$.

(cc) Segment reporting

In accordance with ASC Topic 280, *Segment Reporting* ("**ASC 280**"), the Company had one reportable segment since the Company's chief executive officer, who has been identified as the Company's chief operating decision-maker ("**CODM**") formerly relied on the results of operations of hosting and related services when making decisions on allocating resources and assessing performance of the Company, and the CODM reviews the operation result of the Company as a whole. Hosting and related services business focuses primarily on colocation, interconnectivity, cloud, VPN, hybrid IT and other value-added services.

As of December 31, 2019, 2020 and 2021, the Company only had one reporting segment. Because substantially all of the Company's long-lived assets and revenues are located in and derived from the PRC, geographical segments are not presented.

(dd) Employee benefits

The full-time employees of the Company's PRC subsidiaries are entitled to staff welfare benefits including medical care, housing fund, pension benefits and unemployment insurance, which are governmental mandated defined contribution plans. These entities are required to accrue for these benefits based on certain percentages of the employees' respective salaries, subject to certain ceilings, in accordance with the relevant PRC regulations, and make cash contributions to the state-sponsored plans out of the amounts accrued.

(ee) Comparatives

Certain items reported in the prior year's consolidated financial statements have been reclassified to conform with the current year's presentation.

(ff) Recent accounting pronouncements

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform* (Topic 848), which is elective, and provides for optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The amendments apply only to contracts and hedging relationships that reference LIBOR or another reference rate expected to be discontinued due to reference rate reform. These amendments are effective immediately and may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022. The Company is currently evaluating the impact of reference rate reform and potential impact of adoption of these elective practical expedients on its condensed consolidated financial statements and will consider the impact of adoption during its analysis.

In October 2021, the FASB issued ASU 2021-08, *Business Combinations* (Topic 805) and require acquiring entities to apply Topic 606 to recognize and measure contract assets and contract liabilities in a business combination. The amendments apply to all entities that enter into a business combination within the scope of Subtopic 805-10, *Business Combinations–Overall*. The amendments are effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years and it should be applied prospectively to business combinations occurring on or after the effective date of the amendments. The Company is evaluating the impact of adopting this new standard will have on its consolidated financial statements.

3. CONCENTRATION OF RISKS

(a) Credit risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash and cash equivalents, short-term investments, accounts receivable, other receivables and amounts due from related parties. As of December 31, 2020 and 2021, the aggregate amount of cash and cash equivalents, restricted cash and short-term investments of RMB1,419,855 and RMB1,410,271 (US$221,303), respectively, were held at major financial institutions located in the PRC, and US$303,824 and US$46,794 (RMB298,202), respectively, were deposited with major financial institutions located outside the PRC. Management believes that these financial institutions are of high credit quality and continually monitors the credit worthiness of these financial institutions. Historically, deposits in Chinese banks are secure due to the state policy on protecting depositors' interests. However, China promulgated a new Bankruptcy

Law in August 2006 that came into effect on June 1, 2007, which contains a separate article expressly stating that the State Council may promulgate implementation measures for the bankruptcy of Chinese banks based on the Bankruptcy Law. Under the new Bankruptcy Law, a Chinese bank may go into bankruptcy. In addition, since China's concession to the World Trade Organization, foreign banks have been gradually permitted to operate in China and have been significant competitors against Chinese banks in many aspects, especially since the opening of the Renminbi business to foreign banks in late 2006. Therefore, the risk of bankruptcy of those Chinese banks in which the Company has deposits has increased. In the event of bankruptcy of one of the banks which holds the Company's deposits, the Company is unlikely to claim its deposits back in full since the bank is unlikely to be classified as a secured creditor based on PRC laws.

(b) Business, supplier, customer, and economic risk

The Company participates in a relatively dynamic and competitive industry that is heavily reliant operation excellence of the services. The Company believes that changes in any of the following areas could have a material adverse effect on the Company's future financial position, result of operations or cash flows:

(i) Business Risk – Third parties may develop technological or business model innovations that address data center and network requirements in a manner that is, or is perceived to be, equivalent or superior to the Company's services. If competitors introduce services that compete with, or surpass the quality, price or performance of the Company's services, the Company may be unable to renew its agreements with existing customers or attract new customers at the prices and levels that allow the Company to generate reasonable rates of return on its investment.

(ii) Supplier Risk – The Company's operations are dependent upon bandwidth and cabinet capacity provided by the third-party telecom carriers. There can be no assurance that the Company will be able to secure the cabinet and bandwidth supply from the third-party telecom carriers, neither the Company is adequately prepared for unexpected increases in bandwidth demands by its customers. The communications capacity the Company has leased, include cabinet and bandwidth, may become unavailable for a variety of reasons, such as physical interruption, technical difficulties, contractual disputes, or the financial health of its third-party providers. Any failure of these network providers to provide the capacity the Company requires may result in a reduction in, or interruption of, service to its customers. A significant portion of the Company's total bandwidth and cabinet resources are purchased from its five largest suppliers, who collectively accounted for 21%, 39% and 39% of the Company's total bandwidth and cabinet resources for the years ended December 31, 2019, 2020 and 2021, respectively.

(iii) Customer Risk – The success of the Company's business going forward will rely in part on Company's ability to continue to obtain and expand business from existing customers while also attracting new customers. The Company has a diversified base of customers covering its services and the revenue from the largest single entity customer accounted for less than 8% of the Company's total net revenues for the year ended December 31, 2019, and two and one single entity customer generated more than 10% of the Company's total net revenues for the years ended December 31, 2020 and 2021, respectively. Certain customers are local subsidiaries of a telecommunication carrier in China, which the Company views as separate customers as it negotiates with, maintain and support each of these entities given that each of them has the separate decision-making authority and services procurement budget. None of these customers on a stand-alone basis contributed more than 2% of the Company's revenues in any given year but in the aggregate, they contributed approximately 4%, 3% and 6% of the Company's total revenues for the years ended December 31, 2019, 2020 and 2021, respectively.

(iv) Political, economic and social uncertainties – The Company's operations could be adversely affected by significant political, economic and social uncertainties in the PRC. Although the PRC government has been pursuing economic reform policies for more than 20 years, no assurance can be given that the PRC government will continue to pursue such policies or that such policies may not be significantly altered, especially in the event of a change in leadership, social or political disruption or unforeseen circumstances affecting the PRC political, economic and social conditions. There is also no guarantee that the PRC government's pursuit of economic reforms will be consistent or effective.

(v) Regulatory restrictions – The applicable PRC laws, rules and regulations currently prohibit foreign ownership of companies that provide internet related services, including hosting and related services. Accordingly, the Company's subsidiary, VNET China, is currently ineligible to apply for the required licenses for providing IDC services in China. As a result, the Company operates its IDC services in the PRC through its Consolidated VIEs which holds the licenses and permits required to provide IDC services in the PRC. The PRC Government may also choose at anytime to block access to certain website operators which could also materially impact the Company's ability to generate revenue.

(c) Currency convertibility risk

The Company transacts substantially all its business in RMB, which is not freely convertible into foreign currencies. On January 1, 1994, the PRC government abolished the dual-rate system and introduced a single rate of exchange as quoted daily by the People's Bank of China (the "**PBOC**"). However, the unification of the exchange rates does not imply that the RMB may be readily convertible into US$ or other foreign currencies. All foreign exchange transactions continue to take place either through the PBOC or other banks authorized to buy and sell foreign currencies at the exchange rates quoted by the PBOC. Approval of foreign currency payments by the PBOC or other institutions requires submitting a payment application form together with suppliers' invoices, shipping documents and signed contracts.

(d) Foreign currency exchange rate risk

From July 21, 2005, the RMB is permitted to fluctuate within a narrow and managed band against a basket of certain foreign currencies. The depreciation (appreciation) of the RMB against US$ was approximately 1.6%, (6.5%) and (2.3%) in the years ended December 31, 2019, 2020 and 2021, respectively.

(e) Interest rate risk

The Company is exposed to interest rate risk on its interest-bearing assets and liabilities. As part of its asset and liability risk management, the Company reviews and takes appropriate steps to manage its interest rate exposures on its interest-bearing assets and liabilities. The Company has not been exposed to material risks due to changes in market interest rates, and not used any derivative financial instruments to manage the interest risk exposure during the periods presented.

4. ACQUISITION AND DISPOSAL OF SUBSIDIARIES

Acquisitions in 2021

BJ TenxCloud

On July 15, 2021, to strengthen the Company's leading position in carrier- and cloud-neutral IDC services, the Company through its wholly-owned subsidiary, SZ Cloud Native, acquired 100% of the equity interests in BJ TenxCloud from third party selling shareholders, for a total consideration of RMB414,743 (US$65,082), which consisted of cash consideration of RMB199,790 (US$31,351) and share-settled liabilities with estimated fair value of RMB214,953 (US$33,731) as of July 15, 2021. The estimated fair value of share-settled liabilities was RMB214,577 (US$33,672) as of December 31, 2021, which was included as share consideration due to the original shareholders for business combination in accrued expenses and other payables of the Company's consolidated balance sheet. BJ TenxCloud primarily provides cloud native applications and data platform services. As BJ TenxCloud is in operations and possess all the elements that are necessary to conduct normal operations as a business, such acquisition is accounted for as a business combination.

In addition, the Company is obligated to pay cash of RMB70,000 (US$10,985) and to issue various numbers of the shares of the Company or its subsidiary with estimated fair value of RMB167,342 (US$20,260) as of December 31, 2021 to certain selling shareholders who will remain as the key employees of BJ TenxCloud, determinable based on achievements of the financial and operational targets by BJ TenxCloud during various post-acquisition periods. As such cash and share-based payments will be forfeited if these key employees cease their employments with the Company, the Company recognized these payments as compensation costs over the requisite service periods ranging from 12 months to 36 months. The Company classified the share-based payments as liability classified share-based payments of RMB55,156 (US$8,655) as of December 31, 2021, which are included in accrued expenses and other payables of the Company's consolidated balance sheet and are remeasured at fair value through earnings. The related compensation for post-acquisition services provided by the employees is accounted as compensation and recorded in the Company's consolidated statements of operations (Note 24(c)).

The following table summarizes the estimated fair value of the assets acquired and liabilities assumed as of the date of acquisition:

	RMB	*US$*
Property and equipment, net	470	74
Operating lease right-of-use assets, net	2,376	373
Technology platform *(Note 9)*	27,800	4,362
Customer relationship *(Note 9)*	19,000	2,982
Deferred tax assets	11,097	1,741
Other current assets	52,328	8,210
Total assets acquired	113,071	17,742
Other current liabilities	(29,395)	(4,612)
Operating lease liabilities	(2,500)	(392)
Deferred tax liabilities	(11,097)	(1,741)
Total liabilities assumed	(42,992)	(6,745)
Net assets acquired	70,079	10,997
Purchase consideration	414,743	65,082
Goodwill	344,664	54,085

The revenue and net profit of BJ TenxCloud since the acquisition date included in the consolidated statement of operations for the year ended December 31, 2021 were RMB91,038 (US$14,286) and RMB9,351 (US$1,467), respectively. The goodwill, which is not tax deductible, is primarily attributable to synergies expected to be achieved from the acquisition.

The pro forma results of revenue and earnings of the acquiree as if the combinations occurred as of the beginning of the comparable prior annual reporting period of the acquiree were not presented because the effects of the business combination was not significant to the Company's consolidated results of operations.

Zhongke Zijing

On August 16, 2021, the Company through its subsidiary, Jiwa Engineering BJ acquired 100% of the equity interests in Zhongke Zijing at a total cash consideration of RMB151,884 (US$23,834). The purpose of the acquisition is to establish data center with the acquired property. As Zhongke Zijing does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. The carrying amounts of the net identifiable assets of Zhongke Zijing as of the date of acquisition were as follows:

	RMB	*US$*
Net assets acquired:		
Operating permits *(Note 9)*	203,586	31,947
Land use rights, net *(Note 10)*	36,013	5,651
Other non-current assets	7,349	1,154
Cash and cash equivalents	3	–
Other current assets	21,017	3,298
Other current liabilities	(65,125)	(10,219)
Deferred tax liabilities	(50,959)	(7,997)
Total consideration in cash	151,884	23,834

SH Hesheng

On November 11, 2021, the Company through its subsidiary, SH Shilian acquired 100% of the equity interests in SH Hesheng at a total cash consideration of RMB137,557 (US$21,586). The purpose of the acquisition is to acquire the assets and operating permits. As SH Hesheng does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. The carrying amounts of the net identifiable assets of SH Hesheng as of the date of acquisition were as follows:

	RMB	*US$*
Net assets acquired:		
Operating permits *(Note 9)*	27,646	4,338
Property and equipment, net	94,148	14,774
Operating lease right-of-use assets, net	20,929	3,284
Other non-current assets	872	136
Cash and cash equivalents	423	66
Other current assets	25,646	4,025
Operating lease liabilities	(20,292)	(3,184)
Other current liabilities	(962)	(150)
Deferred tax liabilities	(10,853)	(1,703)
Total consideration in cash	137,557	21,586

Acquisitions in 2020

BJ JHC

On November 17, 2020, the Company through its subsidiaries, YF WOFE and 21Vianet Saturn, acquired 100% equity interests in Splendid Oriental Limited ("**Splendid**") which controls BJ JHC and its subsidiary BJ ST at a total cash consideration of RMB432,015. Among which, RMB200,000 is refundable if certain conditions are not achieved and is accounted as contingent consideration. The purpose of the transaction is to establish a new data center. As Splendid, BJ JHC and BJ ST do not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. As of December 31, 2021, certain conditions in relation to RMB200,000 are not met and the corresponding asset is not recognized until the contingency is resolved. The carrying amount of the net identifiable assets were as follows:

	RMB
Net assets acquired:	
Property and equipment, net	279,556
Operating permits *(Note 9)*	110,418
Customer contract *(Note 9)*	33,208
Operating lease right-of-use assets, net	112,398
Deferred tax assets	3,150
Other non-current assets	4,428
Cash and cash equivalents	30,319
Other current assets	8,833
Other current liabilities	(90,805)
Operating lease liabilities	(120,120)
Finance lease liabilities	(84,082)
Deferred tax liabilities	(55,288)
Total consideration in cash	232,015

SH Shuzhong

On June 30, 2020, as part of its business strategy to expand the existing hosting service, the Company through its subsidiary, SH Shilian, acquired 100% of the equity interests in SH Shuzhong which primarily provides internet data center service from a third party selling shareholder, for a total cash consideration of RMB36,667. As SH Shuzhong is in operations and possess all the elements that are necessary to conduct normal operations as a business, such acquisition is accounted for as business combination.

The following table summarizes the estimated fair value of the assets acquired and liabilities assumed as of the date of acquisition:

	RMB
Property and equipment, net	348,475
Operating lease right-of-use assets, net	81,034
Customer contract *(Note 9)*	33,500
Purchased software	23
Deferred tax assets	14,848
Other non-current assets	1,685
Other current assets	44,774
Total assets acquired	524,339
Other current liabilities	(406,932)
Operating lease liabilities	(45,034)
Deferred tax liabilities	(41,169)
Total liabilities assumed	(493,135)
Net assets acquired	31,204
Purchase consideration	36,667
Goodwill	5,463

Shulifang

On June 24, 2020, the Company through its subsidiary, SH Shilian, entered into a share purchase agreement to acquire 100% equity interests in Shulifang at a total cash consideration of RMB43,000 in installment upon achievement of certain conditions which is accounted as contingent consideration and the corresponding asset will only be recognized when the contingency is resolved. The purpose is to establish a new data center. As Shulifang does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. The transaction was closed on July 21, 2020. As of December 31, 2020 and 2021, the condition of the last contingent consideration amounted to RMB10,000 were not yet met. The contingent consideration obligation is not accounted for until the contingency is resolved. Carrying amount of the net identifiable assets of Shulifang as of the acquisition date were as follows:

	RMB
Net assets acquired:	
Operating permits *(Note 9)*	45,134
Operating lease right-of-use assets, net	15,206
Other non-current assets	15,409
Cash and cash equivalents	53
Other current assets	601
Operating lease liabilities	(15,206)
Other current liabilities	(16,913)
Deferred tax liabilities	(11,284)
Total consideration in cash	33,000

LF Huahai

On September 11, 2020 and October 28, 2020, the Company through its subsidiaries, SH Shilian and 21Vianet Venus International Investment Limited ("**21Vianet Venus**"), acquired 69.93% and 30.07% equity interests in LF Huahai at a total cash consideration of RMB59,500 and RMB25,500, respectively. The purpose is to establish a new data center with the acquired property. As LF Huahai does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets.

Carrying amount of the net identifiable assets of LF Huahai as of the acquisition date were as follows:

	RMB
Net assets acquired:	
Operating permits *(Note 9)*	119,352
Operating lease right-of-use assets, net	183,174
Other non-current assets	27,524
Cash and cash equivalents	173
Other current assets	4,088
Other current liabilities	(35,600)
Operating lease liabilities	(183,873)
Deferred tax liabilities	(29,838)
Total consideration in cash	85,000

5. ACCOUNTS AND NOTES RECEIVABLE, NET

Accounts and notes receivable and the allowance for doubtful debt consisted of the following:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Accounts receivable	913,902	1,504,669	236,115
Notes receivable	2,252	948	150
Allowance for doubtful debt	(68,921)	(99,620)	(15,633)
	847,233	1,405,997	220,632

As of December 31, 2020 and 2021, all accounts and notes receivable were due from third party customers. An analysis of the allowance for doubtful debt was as follows:

	For the years ended December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Balance at beginning of the year	67,828	68,921	10,816
Cumulative adjustment for changes in accounting policy	2,740	–	–
Additional due to business combination	–	16,256	2,251
Additional provision charged to expense	2,393	14,990	2,352
Write-off of accounts receivable	(4,040)	(547)	(86)
Balance at the end of the year	68,921	99,620	15,633

6. SHORT-TERM INVESTMENTS

Short-term investments consisted of the following as of December 31, 2020 and 2021:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Time deposits	285,872	–	–

The Company recorded interest income related to its short-term investments amounting to RMB8,687, RMB5,712 and RMB894 (US$140) for the years ended December 31, 2019, 2020 and 2021, respectively, in the consolidated statements of operations.

7. PREPAID EXPENSES AND OTHER CURRENT ASSETS

Prepaid expenses and other current assets consisted of the following:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Prepaid expenses	884,156	942,990	147,975
Tax recoverable	879,237	964,262	151,313
Deposits	31,774	68,887	10,809
Loan to third parties	19,107	17,492	2,745
Staff advances	968	1,561	245
Interest receivables	1,484	728	114
Others	49,458	53,991	8,472
	1,866,184	2,049,911	321,673

Prepaid expenses mainly represented the unamortized portion of prepayments made to Microsoft for the cloud computing services, the prepayments to telecommunication operators for bandwidth, data centers or cabinets and the prepayments for office expense.

8. PROPERTY AND EQUIPMENT, NET

Property and equipment, including those held under finance leases, consisted of the following:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
At cost:			
Property	1,511,429	1,778,377	279,066
Leasehold improvements	2,609,828	3,302,883	518,294
Computer and network equipment	4,899,577	5,923,149	929,471
Optical fibers	142,723	142,723	22,396
Office equipment	26,845	32,561	5,110
Motor vehicles	2,668	3,959	621
	9,193,070	11,183,652	1,754,958
Less: Accumulated depreciation	(3,285,138)	(4,206,943)	(660,160)
	5,907,932	6,976,709	1,094,798
Construction-in-progress	2,234,286	3,239,407	508,334
Impairment	(35,793)	(123,697)	(19,411)
Property and equipment, net	8,106,425	10,092,419	1,583,721

Depreciation expense was RMB696,528, RMB908,387 and RMB1,164,725 (US$182,771) for the years ended December 31, 2019, 2020 and 2021, respectively, and were included in the following captions:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Cost of revenues	644,108	850,746	1,107,655	173,815
Sales and marketing expenses	2,107	2,399	963	151
General and administrative expenses	30,110	29,711	23,186	3,639
Research and development expenses	20,203	25,531	32,921	5,166
	696,528	908,387	1,164,725	182,771

The carrying amounts of the Company's property and equipment held under finance leases at respective balance sheet dates were as follows:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Property	921,970	993,158	155,848
Computer and network equipment	1,019,588	823,625	129,245
Optical fibers	137,924	137,924	21,643
	2,079,482	1,954,707	306,736
Less: Accumulated depreciation	(661,796)	(629,927)	(98,849)
	1,417,686	1,324,780	207,887
Construction-in-progress	92,545	–	–
Impairment	(17,613)	(17,377)	(2,727)
	1,492,618	1,307,403	205,160

Depreciation of property, computer and network equipment and optical fibers under finance leases was RMB216,664, RMB255,458 and RMB274,052 (US$43,005) for the years ended December 31, 2019, 2020 and 2021, respectively.

The carrying amounts of property and equipment pledged by the Company to secure borrowings (Note 14) granted to the Company at the respective balance sheet dates were as follows:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Property	264,784	253,979	39,855
Leasehold improvements	90,947	160,959	25,258
Computer and network equipment	40,871	159,909	25,093
Office equipment	–	660	104
Construction-in-progress	238,771	–	–

9. INTANGIBLE ASSETS, NET

The following table presented the Company's intangible assets as of the respective balance sheet dates:

	Purchased software *RMB*	Radio spectrum license *RMB*	Operating Permits *RMB*	Technology Platform *RMB*	Customer relationships *RMB*	Licenses *RMB*	Supplier relationships *RMB*	Trade names *RMB*	Customer contract *RMB*	Non-Complete Agreement *RMB*	Internal use software *RMB*	Total *RMB*
Intangible assets, Cost												
December 31, 2020	154,617	126,049	375,283	10,250	238,184	5,772	39,053	116,266	109,717	1,800	47,480	1,224,471
Accumulated Amortization 2020	(112,715)	(73,543)	(8,325)	(10,250)	(174,998)	(2,658)	(28,132)	(37,302)	(46,611)	(1,800)	(31,288)	(527,622)
Impairment	–	(38,654)	–	–	–	–	–	–	–	–	–	(38,654)
Intangible assets, Net												
December 31, 2020	41,902	13,852	366,958	–	63,186	3,114	10,921	78,964	63,106	–	16,192	658,195
Intangible assets, Cost												
December 31, 2021	177,421	123,167	625,129	38,050	257,183	5,772	39,053	116,266	109,717	1,800	58,902	1,552,460
Accumulated Amortization 2021	(122,239)	(74,056)	(24,830)	(12,777)	(203,356)	(3,043)	(31,206)	(43,115)	(55,897)	(1,800)	(42,036)	(614,355)
Impairment	–	(37,770)	–	–	–	–	–	–	–	–	–	(37,770)
Intangible assets, Net												
December 31, 2021	55,182	11,341	600,299	25,273	53,827	2,729	7,847	73,151	53,820	–	16,866	900,335
Intangible assets, Net												
December 31, 2021 (US$)	8,659	1,780	94,200	3,966	8,447	428	1,231	11,479	8,446	–	2,646	141,282

Radio spectrum license represented the spectrum license awarded by the Hong Kong Telecommunication Authority. Operating permits relate to the government authorized high-capacity utilities from the assets acquisitions (Note 4). Customer relationships relate to the relationships that arose as a result of existing customer agreements acquired and is derived from the estimated net cash flows that are expected to be derived from the expected renewal of these existing customer agreements after subtracting the estimated net cash flows from other contributory assets. Licenses mainly represented the telecommunication service license in relation to virtual private network services. Supplier relationships relate to the relationships that arose as a result of existing bandwidth supply agreements with certain network operators, which were valued using a replacement cost method given the relative ease of replacement. Trade names mainly relate to the trade names of Dermot Entities. Customer contract related to existing customer agreements acquired and is derived from the estimated net cash flows that are expected to be derived over the contractual period of the existing customer agreements after subtracting the estimated net cash flows from other contributory assets. Technology platform relates to the TenxCloud Cloud Native Application Platform and Kubedata platform from acquisition of BJ TenxCloud (Note 4) in 2021 and platform software from acquisition of iJoy BVI in 2013.

The intangible assets are amortized using the straight-line method, which is the Company's best estimate of how these assets will be economically consumed over their respective estimated useful lives ranging from 1 to 36 years.

Amortization expenses were approximately RMB71,028, RMB72,690 and RMB94,751 (US$14,868) for the years ended December 31, 2019, 2020 and 2021, respectively.

The annual estimated amortization expenses for the intangible assets for each of the next five years are as follows:

	RMB	*US$*
2022	101,092	15,864
2023	84,724	13,295
2024	53,751	8,435
2025	33,932	5,325
2026	34,956	5,485
	308,455	48,404

10. LAND USE RIGHTS, NET

Land use rights held by the Company represent operating lease prepayments and are amortized over the remaining term of the respective rights.

	As of December 31,		
	2020	**2021**	
	RMB	*RMB*	*US$*
Cost	278,138	368,101	57,763
Accumulated amortization	(22,765)	(30,866)	(4,843)
Land use rights, net	255,373	337,235	52,920

The carrying amounts of land use rights pledged by the Company to secure borrowings (Note 14) granted to the Company at the respective balance sheet dates were as follows:

	As of December 31,		
	2020	**2021**	
	RMB	*RMB*	*US$*
Land use rights	141,000	135,821	21,313

11. GOODWILL

The changes in the carrying amount of goodwill were as follows:

	For the years ended December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Balance as of January 1	989,530	994,993	156,136
Additions	5,463	344,664	54,085
Balance as of December 31	994,993	1,339,657	210,221

As of December 31, 2019, 2020 and 2021, the Company has performed assessment and no impairment loss was recorded.

12. LONG-TERM INVESTMENTS, NET

The Company's long-term investments consisted of the following:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Equity investments without readily determinable fair values	17,137	17,137	2,689
Equity method investments	116,667	79,506	12,476
Available-for-sale debt investments	1,713	1,600	251
	135,517	98,243	15,416

Equity investments without readily determinable fair values

The Company disposed equity investments without readily determinable fair value at a consideration of RMB13,500 and nil in 2020 and 2021, respectively.

The investment income comprised of dividend income of RMB461, RMB607 and RMB659 (US$103), and disposal gain of RMB5,536, RMB257 and nil for the years ended December 31, 2019, 2020 and 2021, respectively.

The Company recorded an impairment loss of long-term investment amounting nil, RMB13,030 and nil for the years ended December 31, 2019, 2020 and 2021, respectively.

Equity method investments:

	As of December 31, 2019			Increase (decrease) during the year ended December 31, 2020			As of December 31, 2020		
	Cost of investments	Share equity gain (loss)	Investments in equity investee	Cost of investments	Share equity gain (loss)	Distribution/ derecognize of share equity (gain) loss	Cost of investments	Share equity gain (loss)	Investments in equity investee
	RMB	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*
Yizhuang Fund	101,000	7,152	108,152	–	12,254	(17,723)	101,000	1,683	102,683
Shihua DC Holdings	29,068	(29,068)	–	(29,068)	–	29,068	–	–	–
Jingliang Inter Cloud	6,000	(1,928)	4,072	–	(903)	–	6,000	(2,831)	3,169
Jingliang Century Cloud	4,000	–	4,000	–	–	–	4,000	–	4,000
ZJK Energy	5,907	(1,945)	3,962	–	(803)	–	5,907	(2,748)	3,159
WiFire Entities	20,000	(20,000)	–	–	–	–	20,000	(20,000)	–
Qidi Chengxin	3,930	–	3,930	–	(274)	–	3,930	(274)	3,656
	169,905	(45,789)	124,116	(29,068)	10,274	11,345	140,837	(24,170)	116,667

	As of December 31, 2020			Increase (decrease) during the year ended December 31, 2021			As of December 31, 2021				
	Cost of investments	Share equity gain (loss)	Investments in equity investee	Cost of investments	Share equity gain (loss)	Impairment of investment	Cost of investments	Share equity gain (loss)	Impairment of investment	Investments in equity investee	Investments in equity investee
	RMB	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*US$*
Yizhuang Fund	101,000	1,683	102,683	–	(33,968)	–	101,000	(32,285)	–	68,715	10,783
Jingliang Inter Cloud	6,000	(2,831)	3,169	–	(2,182)	–	6,000	(5,013)	–	987	155
Jingliang Century Cloud	4,000	–	4,000	–	–	–	4,000	–	–	4,000	628
ZJK Energy	5,907	(2,748)	3,159	–	(1,068)	–	5,907	(3,816)	–	2,091	328
WiFire Entities	20,000	(20,000)	–	–	–	–	20,000	(20,000)	–	–	–
Qidi Chengxin	3,930	(274)	3,656	–	57	–	3,930	(217)	–	3,713	582
BJ Chaohulian	–	–	–	5,000	(1,505)	(3,495)	5,000	(1,505)	(3,495)	–	–
	140,837	(24,170)	116,667	5,000	(38,666)	(3,495)	145,837	(62,836)	(3,495)	79,506	12,476

The Company through its subsidiary, VNET Beijing, entered into an agreement to invest in the Yizhuang Venture Investment Fund ("**Yizhuang Fund**") as a limited partner since April 2012 with capital injection of RMB101,000 and held 27.694% of the investee as of December 31, 2019, 2020 and 2021. Given the Company holds more than three percent interest in the Yizhuang Fund as a limited partner, the investment is accounted for under the equity method as prescribed in ASC Subtopic 323-10, *Investments – Equity Method* ("**ASC 323-10**"). In December 2020 and 2021, the Company received distribution from Yizhuang Fund as return on investments with an amount of RMB17,723 and nil, respectively.

In September 2017, after the disposal of 66.67% equity interest in the WiFire Entities, the Company held the remaining 33.33% equity interest in the WiFire Entities, which is accounted for equity method investment at fair value at the disposal date. As of December 31, 2021, the equity method investment balance is reduced to nil after the pickup of loss in the WiFire Entities.

In January 2018, the Company through its subsidiary, VNET Beijing, and a third company jointly set up Beijing Jingliang Interconnected Cloud Technology Inc. ("**Jingliang Inter Cloud**") and Jingliang Century Cloud Technology Inc. ("**Jingliang Century Cloud**"). The Company injected capital of RMB6,000 and RMB4,000 and the Company held 60% and 40% of equity interest in Jingliang Inter Cloud and Jingliang Century Cloud, respectively. Based on the article of association, the Company cannot exercise control over relevant activities of the investee, but it has the ability to exercise significant influence over Jingliang Inter Cloud's operation and financial decisions.

In December 2019, the Company through its subsidiary, VNET Beijing, and a third company jointly set up Chengdu Qidi Chengxin Education Limited ("**Qidi Chengxin**"). The Company injected capital of RMB3,930 and hold 59% of equity interest in Qidi Chengxin. Based on the article of association, the Company cannot exercise control over relevant activities of the investee, but it has the ability to exercise significant influence over operation and financial decisions.

In January, 2021, the Company through its subsidiary, VNET Beijing, and two third parties jointly set up Beijing Super Internet Technology Research Institute Co., Ltd. ("**BJ Chaohulian**"). The Company injected capital of RMB5,000 and hold 30% of equity interest in BJ Chaohulian. As of December 31, 2021, the equity method investment balance is reduced to nil after the Company pickup of loss amounting to RMB1,505 (US$236) and recorded impairment of investment amounting to RMB3,495 (US$548).

13. OTHER NON- CURRENT ASSETS

As of December 31, 2020 and 2021, other non-current assets included prepayment for acquisition of datacenters and purchase of property and equipment amounting to RMB1,277,027 and RMB1,704,221 (US$267,429), which consist of 85% and 87% of other non-current assets, respectively.

14. BORROWINGS

Borrowings were as follows as of the respective balance sheet dates:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Short-term bank borrowings	34,000	–	–
Long-term bank borrowings, current portion	68,500	230,805	36,218
Other long-term borrowings, current portion	111,828	153,353	24,065
	214,328	384,158	60,283
Long-term bank borrowings, non-current portion	605,119	1,891,797	296,864
Other long-term borrowings, non-current portion	281,877	323,218	50,720
Total borrowings	1,101,324	2,599,173	407,867

The short-term borrowings outstanding as of December 31, 2020 and 2021 bore a weighted average interest rate of 4.46% and 5.22% per annum, respectively, and were denominated in RMB. These borrowings were obtained from financial institutions and have terms of one year. The long-term borrowings (including current portion) outstanding as of December 31, 2020 and 2021 bore a weighted average interest rate of 5.61% and 5.31% per annum, respectively, and were denominated in RMB. These loans were obtained from financial institutions located in the PRC.

As of December 31, 2020 and 2021, unused loan facilities for bank and other borrowings amounted to RMB1,574,556 and RMB1,217,835 (US$191,105), respectively.

Borrowings as of December 31, 2020 and 2021 were secured by the following:

December 31, 2020

Short-term bank borrowings *(RMB)*	**Secured by**
34,000	Unsecured borrowings.

Long-term borrowings (including current portion)	**Secured by**
404,781	Secured by subsidiary's property and equipment and land-use right with net book value of RMB505,004 and RMB40,034, respectively (Note 8/Note 10).
271,861	Secured by a subsidiary's property and equipment and land-use right with net book value of RMB130,369 and RMB100,966, respectively (Note 8/Note 10), and a subsidiary's stock.
190,682	Unsecured borrowing.
100,000	Secured by a subsidiary's stock and the restricted cash of RMB104,400.
100,000	Secured by a subsidiary's stock.
1,067,324	

December 31, 2021

Long-term borrowings (including current portion) *(RMB)*	**Secured by**
1,334,065	Secured by a subsidiary's stock.
416,967	Secured by a subsidiary's land-use right with net book value of RMB24,460 (US$3,838) (Note 10).
267,171	Secured by a subsidiary's property and equipment and land-use right with net book value of RMB124,214 (US$19,492) and RMB96,201 (US$15,096), respectively (Note 8/Note 10), and a subsidiary's stock.
212,302	Secured by a subsidiary's property and equipment with net book value of RMB262,740 (US$41,230) (Note 8), and a subsidiary's stock.
40,500	Secured by a subsidiary's property and equipment and land-use right with net book value of RMB188,553 (US$29,588) and RMB15,160 (US$2,379), respectively (Note 8/Note 10).
328,168	Unsecured borrowing.
2,599,173	

15. ACCRUED EXPENSES AND OTHER PAYABLES

The components of accrued expenses and other payables were as follows:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Payables for purchase of property, equipment and software	1,148,742	1,464,086	229,747
Payroll and welfare payables	204,732	288,613	45,290
Share consideration due to the original shareholders for business combination *(Note 4)*	–	214,577	33,672
Accrued service fees	47,572	62,498	9,807
Liability classified share-based payments *(Note 4)*	–	55,156	8,655
Payables for office supplies and utilities	38,485	54,056	8,483
Payables for acquisitions	47,805	47,805	7,502
Value-added tax and other taxes payable	10,473	25,092	3,938
Amounts due to the original shareholders for acquired entities*	66,466	21,560	3,383
Interest payables	37,799	3,595	564
Others	29,489	61,051	9,579
	1,631,563	2,298,089	360,620

* *This represented the balance of unpaid cash consideration and the payables in other current liabilities due to original shareholders related to the acquisition of SH Shuzhong (Note 4) and Zhongke Zijing (Note 4).*

16. LEASES

Leases are classified as operating leases or finance leases in accordance with ASC 842. The Company's operating leases mainly related to building, office facilities and equipment and the rights to use the land in the PRC. For leases with terms greater than 12 months, the Company records the related asset and liability at the present value of lease payments over the term. Certain leases include rental escalation clauses, renewal options and/or termination options, which are factored into the Company's determination of lease payments when appropriate.

	As of December 31,	
	2020	**2021**
	RMB	*RMB*
Weighted average remaining lease term:		
Operating lease	12.2 years	10.8 years
Finance lease	14.6 years	17.7 years
Weighted average discount rate:		
Operating lease	6.56%	7.01%
Finance lease	8.63%	7.27%

Lease cost for finance leases capitalized were immaterial for the years ended December 31, 2019, 2020 and 2021.

	For the years ended December 31,			
	2019	**2020**	**2021**	
	RMB	*RMB*	*RMB*	*US$*
Lease cost				
Finance lease cost:				
Depreciation	216,664	255,458	274,052	43,005
Interest expenses	120,185	130,196	124,567	19,547
Operating lease cost	214,795	478,805	568,044	89,138
Total lease cost	551,644	864,459	966,663	151,690

Short-term lease cost and variable lease cost for operating leases and finance leases were immaterial for the years ended December 31, 2019, 2020 and 2021.

Other information related to leases was as follows:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash payments for operating leases	193,174	477,189	593,615	93,151
Financing cash payments for finance leases	333,614	376,232	579,660	90,961

Future lease payments under operating leases and finance leases as of December 31, 2021 were as follows:

	Operating Leases		Finance Leases	
	RMB	*US$*	*RMB*	*US$*
2022	625,680	98,183	326,413	51,221
2023	486,679	76,371	234,013	36,722
2024	437,331	68,627	137,267	21,540
2025	404,703	63,507	95,157	14,932
2026	355,216	55,741	96,757	15,183
2027 and thereafter	2,032,828	318,995	1,722,737	270,335
Total future lease payments	4,342,437	681,424	2,612,344	409,933
Less: Imputed interest	(1,450,385)	(227,598)	(1,248,561)	(195,926)
Present value of future lease payments*	2,892,052	453,826	1,363,783	214,007

* *Present value of future operating lease payments consisted of current portion of operating lease liabilities and non-current portion of operating lease liabilities, amounting to RMB607,997 (US$95,408) and RMB2,284,055 (US$358,418) for the year ended December 31, 2021, respectively.*

Present value of future finance lease payments consisted of current portion of finance lease liabilities and non-current portion of finance lease liabilities, amounting to RMB244,032 (US$38,294) and RMB1,119,751 (US$175,713) for the year ended December 31, 2021, respectively.

17. BONDS PAYABLE

On April 15, 2019, the Company issued and sold bonds with an aggregate principal amount of US$300,000 at a coupon rate of 7.875% per annum ("**2021 Notes**"). The 2021 Notes has matured on October 15, 2021. The 2021 Notes were listed and quoted on the SGX-ST. Interest on the 2021 Notes is payable semi-annually in arrears on April 15 and October 15 in each year, beginning from October 15, 2019.

Net proceeds from 2021 Notes after deducting issuance costs were RMB1,976,474. The 2021 Notes are unsecured and rank senior in right of payment to any of the Company's indebtedness that is expressly subordinated to the bonds; equal in right of payment to any of the Company's liabilities that are not so subordinated, including the 2020 Notes; effectively junior in the right of payment to any secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including accounts payables) of the Company's subsidiaries and Consolidated VIEs.

On April 16, 2019, the Company repurchased US$150,839 in principal amount of 2020 Notes, representing approximately 50.28% of the US$300,000 total aggregate principal amount of the 2020 Notes outstanding as at such date. On August 12, 2019, the Company repurchased US$18,000 in principal amount of 2020 Notes. The remaining outstanding 2020 Notes with principal amount of US$131,161 continue to be the obligation of the Company. The Company recognized loss on debt extinguishment of RMB18,895 during the year ended December 31, 2019. On August 4, 2020, the Company repaid the remaining outstanding 2020 Notes with principal amount of US$131,161.

On October 4, 2021, the Company repaid the outstanding 2021 Notes with principal amount of US$300,000.

The following table summarizes the aggregate required repayments of the principal amounts of the Company's long-term borrowings, including bank and other borrowings (Note 14) in the succeeding five years and thereafter:

	RMB	*US$*
For the years ending December 31,		
2022	408,194	64,055
2023	358,279	56,222
2024	347,990	54,607
2025	367,776	57,712
2026	279,825	43,911
2027 and thereafter	891,338	139,870

18. PERPETUAL CONVERTIBLE PREFERRED SHARES

In June 2020, the Company issued 150,000 Series A perpetual convertible preferred shares (the "**Series A Preferred Shares**") at the subscription price of 1,000 US dollars per subscribed share for a total cash consideration of US$150,000.

The significant terms of the Series A Preferred Shares are summarized as follows:

Dividends

From and after the original issuance date, cumulative dividends on each Series A Preferred Share will accrue in arrears at the dividend rate of 4.5% per annum on the original issuance price of US$1,000 per subscribed share. All accrued dividends on any Series A Preferred Share will be paid in cash, when, as and if declared by the Board of Directors out of funds legally available therefor or upon a liquidation of the Company.

Holders of the Series A Preferred Shares will also be entitled to receive any dividends declared by the Board of Directors on a pro rata basis with the ordinary shares determined on an as-converted basis. The dividends or distributions shall be distributed among all holders of ordinary shares and Series A Preferred Shares in proportion to the number of ordinary shares that would be held by each such holder if all Series A Preferred Shares had been converted to ordinary shares as of the record date fixed for determining those entitled to receive such distribution.

For dividends on cumulative preferred stock classified in permanent equity, dividends are not recognized until declared by the Board of Directors. RMB28,637 (US$4,494) dividend was declared by the Company on the conversion date.

Liquidation preference

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company, the holders of Series A Preferred Shares will be entitled to be paid out of the assets of the Company available for distribution to its shareholders before any distribution or payment out of the assets of the Company will be made to the holders of ordinary shares at a preferential amount in cash equal to the greater of (i) the aggregate original issuance price of US$1,000 per Series A Preferred Shares, plus any unpaid, accrued and accumulated dividends on all such Series A Preferred Shares (whether or not declared) and (ii) the aggregate value that such holders of Series A Preferred Shares would have received had all holders of Series A Preferred Shares, immediately prior to such Liquidation, converted all Series A Preferred Shares then outstanding (together with any unpaid, accrued and accumulated dividends thereon) into Class A ordinary shares at the applicable conversion price then in effect.

If the Company has insufficient assets to pay the holders of the Series A Preferred Shares the full preferential amount, (a) the holders of the Series A Preferred Shares will share ratably in any distribution of the remaining assets of the Company in proportion to the respective full preferential amounts which would otherwise be payable to each such holder in full, and (b) the Company will not make or agree to make, or set aside for the benefit of the holders of ordinary shares, any payments to the holders of ordinary shares.

Conversion

Series A Preferred Shares can be converted at any time at the option of the holder into Class A ordinary shares by dividing the original issuance price plus any unpaid, accrued and accumulated dividends up to, but excluding, the conversion date by the conversion price in effect immediately prior to such conversion. Series A Preferred Shares will be mandatorily converted into Class A ordinary shares at any time after six months from the original issuance date when the daily volume-weighted average price of the ADS ("**VWAP**") of certain period equals or exceeds the 200% of the conversion price per ADS ("**Conversion Threshold**").

Conversion price is initially, US$2.8333 per Class A Ordinary Shares or US$17.00 per ADS and is subject to additional adjustments if the Company makes certain dilutive issuances of shares.

Voting

Each Series A Preferred Shares holder will be entitled to a number of vote equal to the number of Class A ordinary shares then issuable upon its conversion into Class A ordinary shares at the record date for determination of the shareholders entitled to vote on such matters, or, if no such record date is established, at the date when such vote is taken or any written consent of shareholders is solicited.

Accounting for the Series A Preferred Shares

The Series A Preferred Shares are classified as permanent equity and initially recorded at the issuance price at the time of closing. There were no embedded features that qualified for bifurcation and separate accounting in accordance with ASC 815-10, *Derivatives and Hedging*. As the time of closing, beneficial conversion features with the amount of RMB470,643 (US$72,129) was recorded as a reduction to the respective preferred shares with an offsetting credit to additional paid-in capital. This amount was immediately accreted back as a deemed distribution to Series A perpetual convertible preferred shareholders.

The Company early adopted ASU 2020-06, *Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40), Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* ("**ASU 2020-06**"), starting on January 1, 2021 using modified retrospective transition method applied to those transactions outstanding as of January 1, 2021. The impact of adoption of ASU 2020-06 was immaterial for Series A Preferred Shares.

On March 1, 2021, 150,000 Series A Preferred Shares all has been converted into 54,507,816 Class A Ordinary Shares at the conversion price US$17.00 per ADS.

19. CONVERTIBLE PROMISSORY NOTES

2025 Convertible Notes

During the year ended December 31, 2020, the Company entered into agreements with a group of investors led by Goldman Sachs Asia Strategic Pte. Ltd. (the "**Purchasers**") to issue the Company's convertible promissory note (the "**2025 Convertible Notes**") for total gross proceeds of US$200,000. The 2025 Convertible Notes will mature in five years and, bear interest at the rate of 2% per annum from the issuance date which will be payable semiannually in arrears in cash.

Conversion

Purchasers have the option to convert all or a portion of the outstanding 2025 Convertible Notes and any accrued and unpaid interest, into ADSs at the conversion price at any time. The conversion price will initially be US$12.00 per ADS or will be subject to customary adjustments when the decrease in VWAP exceeds certain threshold. In addition, the conversion price will be adjusted in the event when the Company makes certain dilutive issuances of shares.

Redemption upon maturity

Unless previously redeemed or converted, the Company shall redeem the 2025 Convertible Notes on the maturity date in an amount equal to the sum of (i) 115% of the then outstanding principal amount of the 2025 Convertible Notes and (ii) the interest accrued but unpaid on the maturity date. The Company may not redeem the 2025 Convertible Notes at its option prior to the maturity date.

Early redemption at the option of the Purchasers

If any portion of the outstanding principal amount of the 2025 Convertible Notes has not been converted by the third anniversary of the date of issuance of the 2025 Convertible Notes, the Purchasers at their sole discretion will have the right to require the Company to redeem, in whole or in part, the outstanding principal amount of the 2025 Convertible Notes which has not been converted previously in an amount equal to the sum of (i) 109% of the outstanding principal amount and (ii) the interest accrued but unpaid on the outstanding principal amount.

The Company elected to account for the 2025 Convertible Notes at fair value as a whole. Issuance costs including underwriting commissions and offering expenses were approximately RMB18,932, which were recognized in earnings as incurred.

During the year ended December 31, 2020 and 2021, Purchasers of the 2025 Convertible Notes exercised the right to convert 23,710,140 and 42,401,010 newly issued Class A ordinary shares at the conversion price of US$12 per ADS. Upon conversion, the fair value of converted portion was RMB720,547 and RMB1,639,806 (US$257,321), respectively. Issuance costs were approximately RMB2,939 and nil, respectively, which were credited to capital accounts with the changes in the fair value up to the conversion date recorded in earning.

The interest expense on the convertible promissory was recorded based on the stated rate of 2% in the interest expense within the consolidated statements of operations. For the years ended December 31, 2020 and 2021, the interest expense was RMB18,880 and RMB9,703 (US$1,523), respectively.

As of December 31, 2020 and 2021, the fair value of the remaining 2025 Convertible Notes was RMB3,014,057 and RMB513,754 (US$80,619), respectively. The changes in fair value (loss) gain of convertible promissory notes of RMB(2,544,220) and RMB829,149 (US$130,112) were recognized in the changes in the fair value of convertible promissory notes in the consolidated statement of operations for the year ended December 31, 2020 and 2021, respectively. The fair value changes related to instrument-specific credit risk is nil and nil for the years ended December 31, 2020 and 2021, respectively.

2026 Convertible Notes

In January 2021, the Company issued US$600,000 principal amount 0.00% convertible senior notes including US$75,000 sold upon the exercise of the over-allotment option (the "**2026 Convertible Notes**"). The 2026 Convertible Notes will mature on February 1, 2026 unless redeemed, repurchased or converted prior to such date.

Holders may convert their 2026 Convertible Notes at their option prior to the close of business on the business day immediately preceding August 1, 2025 only under the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ending on June 30, 2021 (and only during such calendar quarter), if the last reported sale price of ADSs', each representing six Class A ordinary shares of the Company, par value US$0.00001 per share, for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day; (2) during the five business day period after any ten consecutive trading day period in which the trading price per US$1,000 principal amount of the 2026 Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the ADSs and the conversion rate on each such trading day; (3) if the Company calls the 2026 Convertible Notes for a tax or optional redemption; or (4) upon the occurrence of specified corporate events. On or after August 1, 2025 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert their 2026 Convertible Notes at any time. Upon conversion, the Company will pay or deliver, as the case may be, cash, ADSs, or a combination of cash and ADSs, at its election. If the Company satisfies its conversion obligation solely in cash or through payment and delivery, as the case may be, of a combination of cash and ADSs, the amount of cash and ADSs, if any, due upon conversion will be based on a daily conversion value calculated on a proportionate basis for each trading day in a 40 trading day observation period.

The initial conversion rate of the 2026 Convertible Notes is 18.3574 of the Company's ADS per US$1,000 principal amount of the 2026 Convertible Notes (which is equivalent to an initial conversion price of approximately US$54.47 per ADS). The conversion rate will be subject to adjustment in some events. In addition, following certain corporate events that occur prior to the maturity date, if a make-whole fundamental change occurs prior to the maturity date of the 2026 Convertible Notes, or under certain circumstances upon a tax redemption or the Company's optional redemption, the Company will, in certain circumstances, increase the conversion rate for a holder who elects to convert its 2026 Convertible Notes in connection with such corporate event, such make-whole fundamental change or such notice of tax redemption or notice of optional redemption, as the case may be. Upon conversion, the Company will pay or deliver, as the case may be, cash, ADSs (plus cash in lieu of a fractional ADS) or a combination of cash and ADSs, at its election. The conversion option may be settled in cash, ADSs, or a combination of cash and ADSs at the Company's option.

The Company may not redeem the 2026 Convertible Notes prior to February 6, 2024 unless certain tax-related events occur. On or after February 6, 2024 and on or prior to the 40th scheduled trading day immediately before the maturity date, the Company may redeem for cash all or part of the 2026 Convertible Notes, at its option, if the last reported sale price of the Company's ADSs has been at least 130% of the conversion price then in effect on (i) each of at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period ending on, and including, the trading day immediately prior to the date the Company provides notice of redemption; and (ii) the trading day immediately preceding the date the Company sends such notice. Holders of the notes have the right to require the Company to repurchase for cash all of their 2026 Convertible Notes, or any portion of the principal thereof, on February 1, 2024 or in the event of certain fundamental changes. The redemption price will equal 100% of the principal amount of the 2026 Convertible Notes to be redeemed, plus any accrued and unpaid special interest, if any, to, but not including, the redemption date. No sinking fund is provided for the 2026 Convertible Notes.

ASU 2020-06 simplified an issuer's accounting for convertible instrument by eliminating the cash conversion and beneficial conversion feature models in ASC 470-20, *Debt with Conversion and Other Options*, that requires separate accounting for such conversion features. Results for reporting periods beginning after January 1, 2021 are presented under ASU 2020-06, while prior period amounts have not been adjusted and continue to be reported in accordance with historic accounting. The impact of adopting the new guidance was not material to consolidated financial statements and there was no adjustment to beginning retained earnings on January 1, 2021.

The 2026 Convertible Notes was accounted for as one unit of liability account using amortized cost method under ASU 2020-06, with no embedded derivative features being bifurcated.

The gross proceeds from issuance of the 2026 Convertible Notes were US$600,000. Debt issuance costs including underwriting commissions and offering expenses were approximately US$13,841, which were presented as deduction from liability and amortized into interest expense over the remaining period of 5 years. As of December 31, 2021, the net carrying amount of the 2026 Convertible Notes was RMB3,753,197 (US$588,959). For the year ended December 31, 2021, the coupon interest expense was nil and the amortization of debt discount and issuance costs was RMB16,216 (US$2,544). The effective interest rate was 0.47% for the year ended December 31, 2021.

20. DEFERRED GOVERNMENT GRANTS

During the years ended December 31, 2019, 2020 and 2021, the Company received nil, nil and nil respectively, in government grants from the relevant PRC government authorities for the use in construction of property and equipment. These grants are initially deferred and subsequently recognized in the consolidated statements of operations when the Company has complied with the conditions or performance obligations attached to the related government grants, if any, and the grants are no longer refundable. Grants that subsidize the construction cost of property and equipment are amortized over the life of the related assets as a reduction of the associated depreciation expense.

Movements of deferred government grants were as follows:

	For the years ended December 31,			
	2019	**2020**	**2021**	
	RMB	*RMB*	*RMB*	*US$*
Balance at beginning of the year	15,792	8,501	6,174	969
Recognized as a reduction of depreciation expense	(7,291)	(2,327)	(1,806)	(284)
Balance at end of the year	8,501	6,174	4,368	685

21. TREASURY STOCK

For the years ended December 31, 2019, 2020 and 2021, the Company repurchased the number of 242,830, nil and nil ADSs pursuant to the share repurchase plans.

22. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The changes in accumulated other comprehensive income (loss) by component, net of tax of nil, were as follows:

	Foreign currency translation
	RMB
Balance as of January 1, 2019	85,979
Current year other comprehensive loss	(8,075)
Balance as of December 31, 2019	77,904
Current year other comprehensive loss	(133,439)
Balance as of December 31, 2020	(55,535)
Current year other comprehensive loss	(34,908)
Balance as of December 31, 2021	(90,443)
Balance as of December 31, 2021, in US$	(14,192)

23. MAINLAND CHINA EMPLOYEE CONTRIBUTION PLAN

As stipulated by the regulations of the PRC, full-time employees of the Company in the PRC participate in a government-mandated multiemployer defined contribution plan organized by municipal and provincial governments. Under the plan, certain pension benefits, medical care, unemployment insurance, employee housing fund and other welfare benefits are provided to employees. The Company is required to make contributions to the plan based on certain percentages of employees' salaries. The total expenses for the plan were RMB121,266, RMB77,982 and RMB158,673 (US$24,899) for the years ended December 31, 2019, 2020 and 2021, respectively.

24. SHARE-BASED COMPENSATION

(a) Option granted to employees

In order to provide additional incentives to employees and to promote the success of the Company's business, the Company adopted a share incentive plan in 2010 (the "**2010 Plan**"). Under the 2010 Plan, the Company may grant options and RSUs to its employees, directors and consultants to purchase an aggregate of no more than 39,272,595 ordinary shares of the Company. The 2010 Plan was approved by the Board of Directors and shareholders of the Company on July 16, 2010. The 2010 Plan is administered by the Board of Directors or the Compensation Committee of the Board as set forth in the 2010 Plan (the "**Plan Administrator**"). All share options to be granted under the 2010 Plan have a contractual term of ten years and generally vest over 3 to 4 years in the grantee's option agreement.

In order to further promote the success and enhance the value, the Company adopted a share incentive plan in 2014 (the "**2014 Plan**"). Under the 2014 Plan, the Company may issue an aggregate of no more than 20,461,380 shares ("**Maximum Number**") and such Maximum Number should be automatically increased by a number that is equal to 15% of the number of new shares issued by the Company from time to time. The maximum aggregate number of ordinary shares to be issued under 2014 Plan was subsequently amended to 39,606,817, as approved by the Board of Directors and shareholders of the Company on October 30, 2015. All share options, restricted shares and restricted share units to be granted under the 2014 Plan have a contractual term of ten years and generally vest over 3 to 4 years in the grantee's option agreement.

In order to continuously attract and retain talents, the Company adopted a share incentive plan in 2020 (the "**2020 Plan**"). Under the 2020 Plan, the Company is authorized to issue an aggregate of 46,560,708 Class A ordinary shares of the Company (equal to the sum of (i) 5% of the Company's share capital as of the date hereof, calculated on an as-converted basis by taking into consideration all the convertible promissory notes issued and to be issued by the Company, and (ii) 7,562,532 Class A ordinary shares reserved under the "2010 Plan" and "2014 Plan" for future grants) will be reserved for future issuance. After adoption of the 2020 Plan, the Company will cease to grant any new awards under the 2010 Plan and 2014 Plan while the 2010 Plan and 2014 Plan and outstanding awards granted thereunder will remain effective and can be amended by the Company from time to time pursuant to the applicable terms thereto. The 2020 Plan was approved by the Board of Directors and shareholder of the Company on May 13, 2020.

(b) Shares granted to management

The Company granted 464,120, 314,842 and 3,534,767 RSUs in 2019, 2020 and 2021, respectively, with performance conditions whereby a predetermined number will vest upon the assignment of an annual performance review in accordance with predetermined performance targets for the grantees over a one or four-year period. As it is probable for the Company to estimate the annual performance review ratings for the individual grantees, the Company recognized the related compensation expenses using the accelerated recognition method.

The Company granted 64,000, 1,848,701 and 298,454 RSUs in 2019, 2020 and 2021, respectively, with performance conditions whereby a predetermined number will vest upon with the achievement of predetermined operation performance targets for the Company. As it is probable for the Company to estimate the operation performance for the Company, the Company recognized the related compensation expenses using the accelerated recognition method.

The Company granted 16,000, nil and nil RSUs in the years ended 2019, 2020 and 2021, respectively, with market conditions whereby a predetermined number will vest upon with the achievement of predetermined share price targets for the Company. The probability to achieve market condition is reflected in the grant date fair value of the award and thus compensation cost is recognized when the requisite service is rendered using the accelerated method.

The compensation expenses related to remaining unvested share options shall be recognized over the remaining requisite service period or the performance review period. As of December 31, 2021, options to purchase 362,004 of ordinary shares were outstanding.

The following table summarized the Company's employee share option activity under the 2010 Plan:

	Number of options	Weighted average exercise price *(US$)*	Weighted average remaining contractual term *(Years)*	Aggregate intrinsic value *(US$)*
Outstanding, January 1, 2021	508,866	0.33	0.8	–
Exercised	(86,862)	0.73	–	–
Forfeited	(60,000)	0.70	–	–
Outstanding, December 31, 2021	362,004	0.17	0.01	482
Vested and expected to vest at December 31, 2021	362,004	0.17	0.01	482
Exercisable as of December 31, 2021	362,004	0.17	0.01	482

The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying awards and the fair value of the underlying stock at each reporting date, for those awards that have an exercise price below the estimated fair value of the Company's shares. As of December 31, 2021, the Company had options outstanding to purchase an aggregate of 362,004 shares with an exercise price below the fair value of the Company's shares, resulting in an aggregate intrinsic value of RMB3,072 (US$482).

The aggregate fair value of the outstanding options at the grant date was determined to be RMB4,701 (US$738) as of December 31, 2021 and such amount is recognized as share-based compensation expenses using the straight-line method for all employee share options granted with graded vesting based on service conditions and the accelerated method for share options granted with graded vesting based on performance conditions. The total fair value of share options exercised during the years ended December 31, 2019, 2020 and 2021 was US$42, US$594 and US$122, respectively. The aggregate intrinsic value of options exercised during the years ended December 31, 2019, 2020 and 2021 was US$22, US$2,336, and US$67, respectively.

As of December 31, 2021, the Company has recorded all the share-based compensation expenses in relation to outstanding share options.

The following table summarized the Company's RSUs activity under the 2014 and 2020 Plan:

	Number of RSUs	Weighted average grant date fair value *(US$)*	Weighted average remaining contractual life *(Years)*	Aggregate intrinsic value *(US$)*
Unvested, January 1, 2021	4,092,457	14.95	8.2	–
Granted	3,833,221	12.31	–	–
Vested	(3,768,186)	11.32	–	–
Forfeited	(1,349,363)	17.34	–	–
Unvested, December 31, 2021	2,808,129	14.18	7.4	25,357

Share-based compensation expenses for RSUs are measured based on the closing fair market value of the Company's ADS on the date of grant and the reporting date for liability classified RSUs, respectively. The aggregate fair value of the unvested RSUs as of December 31, 2021 was RMB161,590 (US$25,357), and such amount is recognized as share-based compensation expenses using the straight-line method for the RSUs with graded vesting based on service conditions and the accelerated method for the RSUs with graded vesting based on performance conditions, market conditions and share-settled bonuses. The weighted average grant date fair value of RSUs granted during the years ended December 31, 2019, 2020 and 2021 was US$7.67, US$22.62 and US$12.31, respectively. The total fair value of RSUs vested during the years ended December 31, 2019, 2020 and 2021 was US$6,185, US$3,866 and US$42,672, respectively.

As of December 31, 2021, there was RMB86,208 (US$13,528) of unrecognized share-based compensation expenses related to RSUs which is expected to be recognized over a weighted average vesting period of 1.6 years. Total unrecognized share-based compensation expenses may be adjusted for future changes when actual forfeitures incurred.

(c) Share-based compensation due to business combination (Note 4)

For the year ended December 31, 2021, the Company recorded compensation cost of RMB55,156 (US$8,655) within the Company's consolidated statements of operations. As of December 31, 2021, there was RMB114,522 (US$17,971) of unrecognized share-based compensation expenses.

Total share-based compensation expenses relating to share options, RSUs granted to employees and share-based compensation due to business combination recognized for the years ended December 31, 2019, 2020 and 2021 were as follows:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Cost of revenues	1,884	15,251	13,713	2,152
Sales and marketing expenses	354	38,247	2,545	399
General and administrative expenses	40,501	82,672	292,947	45,970
Research and development expenses	1,177	634	10,805	1,696
	43,916	136,804	320,010	50,217

25. TAXATION

Enterprise income tax ("EIT")

Cayman Islands

The Company is incorporated in the Cayman Islands and conducts its primary business operations through the subsidiaries and VIEs in the PRC and Hong Kong. Under the current laws of the Cayman Islands, the Company is not subject to tax on income or capital gain arising in Cayman Islands.

British Virgin Islands

Subsidiaries in British Virgin Islands are not subject to tax on income or capital gains under the current laws of the British Virgin Islands. Additionally, upon payments of dividends by the Company to its shareholders, no British Virgin Islands withholding tax will be imposed.

Hong Kong

Subsidiaries in Hong Kong are subject to Hong Kong profits tax rate of 16.5% for the years ended December 31, 2019, 2020 and 2021. Additionally, upon payments of dividends by the Company to its shareholders, no HK withholding tax will be imposed.

Taiwan

DYX Taiwan branch is incorporated in Taiwan and is subject to Taiwan profits tax rate of 20% for the years ended December 31, 2019, 2020 and 2021.

The PRC

The Company's PRC subsidiaries are incorporated in the PRC and subject to the statutory rate of 25% on the taxable income in accordance with the Enterprise Income Tax Law (the "**EIT Law**"), which was effective since January 1, 2008, except for certain entities eligible for preferential tax rates.

Dividends, interests, rent or royalties payable by the Company's PRC subsidiaries, to non-PRC resident enterprises, and proceeds from any such non-resident enterprise investor's disposition of assets (after deducting the net value of such assets) shall be subject to 10% withholding tax, unless the respective non-PRC resident enterprise's jurisdiction of incorporation has a tax treaty or arrangements with China that provides for a reduced withholding tax rate or an exemption from withholding tax.

VNET Beijing was qualified for a High and New Technology Enterprise ("**HNTE**") since 2008 and is eligible for a 15% preferential tax rate. In October 2014, VNET Beijing obtained a new certificate and reapplied the certificate in October 2017 and 2020, with a validity term of three years. In accordance with the PRC Income Tax Laws, an enterprise awarded with the HNTE certificate may enjoy a reduced EIT rate of 15%. For the years ended December 31, 2019, 2020 and 2021, the tax rate for VNET Beijing was 15%, 15% and 15%, respectively.

In April 2011, Xi'an Sub, a subsidiary located in Shaanxi Province, was qualified for a preferential tax rate of 15% and started to apply this rate from then on. The preferential tax rate is awarded to companies that are located in West Regions of China which operate in certain encouraged industries. For the years ended December 31, 2019, 2020 and 2021, the tax rate assessed for Xi'an Sub was 15%, 15% and 15%, respectively.

In October 2015, SH Blue Cloud, a subsidiary located in Shanghai, was qualified for a HNTE and became eligible for 15% preferential tax rate. The certificate was reapplied in November 2018 and October 2021 with a validity term of three years. Accordingly, for the years ended December 31, 2019, 2020 and 2021, SH Blue Cloud enjoyed a preferential tax rate of 15%.

In November 2016, SZ DYX, a subsidiary located in Guangdong Province, was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years and the certificate was reapplied in November 2019 with a validity term of three years. Accordingly, for the years ended December 31, 2019, 2020 and 2021, SZ DYX enjoyed a preferential tax rate of 15%.

In December 2016, BJ TenxCloud, a subsidiary located in Beijing and the Company acquired in July 2021 (Note 4), was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years and the certificate was reapplied in December 2019 with a validity term of three years. Accordingly, for the years ended December 31, 2019, 2020 and 2021, BJ TenxCloud enjoyed a preferential tax rate of 15%.

In December 2019, SH Hesheng, a subsidiary located in Shanghai, in which the Company acquired 100% of the equity in November 2021 (Note 4), was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years. Accordingly, for the years ended December 31, 2019, 2020 and 2021, SH Hesheng enjoyed a preferential tax rate of 15%.

The New EIT Law also provides that enterprises established under the laws of foreign countries or regions and whose "place of effective management" is located within the PRC are considered PRC tax resident enterprises and subject to PRC income tax at the rate of 25% on worldwide income. The definition of "place of effective management" refers to an establishment that exercises, in substance, overall management and control over the production and business, personnel, accounting, properties, etc. of an enterprise.

As of December 31, 2021, the administrative practice associated with interpreting and applying the concept of "place of effective management" is unclear. If the Company is deemed as a PRC tax resident, it will be subject to 25% PRC EIT under the New EIT Law on its worldwide income, meanwhile the dividend it receives from another PRC tax resident company will be exempted from 25% PRC income tax. The Company will continue to monitor changes in the interpretation or guidance of this law.

(Loss) income before income taxes consisted of:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Non-PRC	(178,762)	(2,708,101)	675,369	105,980
PRC	2,953	137,178	(48,861)	(7,667)
	(175,809)	(2,570,923)	626,508	98,313

Income tax expenses comprised of:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Current	(70,324)	(131,844)	(111,082)	(17,431)
Deferred	64,887	22,508	(325)	(51)
	(5,437)	(109,336)	(111,407)	(17,482)

The reconciliation of tax computed by applying the statutory income tax rate of 25% for the years ended December 31, 2019, 2020 and 2021 applicable to the PRC operations to income tax expenses were as follows:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
(Loss) income before income taxes	(175,809)	(2,570,923)	626,508	98,313
Income tax benefits (loss) computed at applicable tax rates (25%)	43,952	642,731	(156,627)	(24,578)
Non-deductible expenses	(23,082)	(4,117)	(13,116)	(2,058)
Research and development expenses	19,688	32,777	45,122	7,081
Preferential rate	20,213	26,554	14,232	2,233
Current and deferred tax rate differences	(8,699)	(36,391)	26,115	4,098
International rate differences	(77,066)	(711,962)	120,678	18,937
Tax exempted income	754	1,087	14,536	2,281
Foreign Investment	–	(10,263)	(49,815)	(7,817)
Unrecognized tax benefits (expenses)	1,728	(58,449)	(12,338)	(1,936)
Change in valuation allowance	25,423	6,465	(79,733)	(12,512)
Prior year provision to return true up	(8,348)	2,232	(22,898)	(3,593)
Others	–	–	2,437	382
Income tax expenses	(5,437)	(109,336)	(111,407)	(17,482)

Deferred Tax

The significant components of deferred taxes were as follows:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Deferred tax assets			
Non-current			
Allowance for doubtful debt	39,886	46,360	7,275
Impairment of long-lived assets	13,467	40,289	6,322
Impairment of long-term investment	2,150	3,024	475
Accrued expense	24,986	16,836	2,641
Tax losses	171,211	262,209	41,146
Property and equipment	22,631	28,569	4,483
Intangible assets	5,765	5,773	906
Finance lease	390,925	386,849	60,705
Deferred government grant	1,357	1,046	164
Operating lease	292,210	623,074	97,774
Loss picked up on equity method investments	57,201	66,121	10,376
Valuation allowance	(170,104)	(261,960)	(41,107)
Total deferred tax assets, net of valuation allowance	851,685	1,218,190	191,160
Deferred tax liabilities			
Non-current			
Intangible assets	186,258	241,090	37,831
Property and equipment	143,873	139,566	21,901
Capitalized interest expense	19,339	28,604	4,489
Finance lease	313,102	306,598	48,112
Operating lease	292,210	623,074	97,774
Investment in subsidiaries	10,263	59,660	9,362
Gain picked up from equity method investments	252	–	–
Total non-current deferred tax liabilities	965,297	1,398,592	219,469
Net deferred tax assets (liabilities)	(113,612)	(180,402)	(28,309)
Analysis as:			
Deferred tax assets	185,481	168,002	26,363
Deferred tax liabilities	299,093	348,404	54,672
Net deferred tax liabilities	(113,612)	(180,402)	(28,309)

As of December 31, 2021, the Company has net tax operating losses from its PRC subsidiaries and its Consolidated VIEs, as per filed tax returns, of RMB1,096,951 (US$172,136), which will expire at various times between 2022 and 2031 and the majority expiring by 2026, if not utilized.

As of December 31, 2021, the undistributed earnings of the Company's PRC subsidiaries the Company intends to permanently reinvested were RMB1,428,251 (US$224,124). In 2021, other than these indefinitely reinvested amount, the Company has other operation or distribution plan for the new VIE, SH Zhiyan. As of December 31, 2021, the related deferred tax liability accrued was RMB59,660 (US$9,362).

Unrecognized Tax Benefits

As of December 31, 2020 and 2021, the Company recorded unrecognized tax benefits of RMB68,696 and RMB77,573 (US$12,173), respectively.

The unrecognized tax benefits and its related interest are primarily related to non-deductible expenses and accrued expenses. RMB61,711 of the total unrecognized tax benefits, ultimately recognized, will impact the effective tax rate. It is possible that the amount of uncertain tax benefits will change in the next 12 months, however, an estimate of the range of the possible outcomes cannot be made at this time.

A roll-forward of unrecognized tax benefits principle was as follows:

	For the years ended December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Balance at beginning of year	1,722	62,584	9,821
Reversal based on tax positions related to prior years	(629)	(170)	(27)
Additions based on tax positions related to the current year	61,491	2,440	382
Balance at end of year	62,584	64,854	10,176

For the years ended December 31, 2019, 2020 and 2021, the Company (reversed) recorded interest expense of RMB(1,447), RMB5,391 and RMB6,606 (US$1,037), respectively. Accumulated interest expense recorded by the Company was RMB6,112 and RMB12,718 (US$1,996) as of December 31, 2020 and 2021, respectively. As of December 31, 2021, the tax years ended December 31, 2016 through 2021 for the PRC subsidiaries remain open for statutory examination by the PRC tax authorities.

26. RELATED PARTY TRANSACTIONS

a) Related parties*

Name of related parties	Relationship with the Company
Xiaomi Ventures Limited ("**Xiaomi**"), Xiaomi Communication Technology Co., Ltd., and its subsidiary, Beijing Xiaomi Mobile Software Co., Ltd. (collectively, "**Xiaomi Group**") (2)	A company controlled by principal shareholder of the Company before December 30, 2020
King Venture Holdings Limited ("**King Venture**") and Beijing Kingsoft Cloud Network Technology Co., Ltd. ("**BJ Kingsoft**") (1)	A company controlled by principal shareholder of the Company before December 30, 2020
Beijing Cheetah Mobile Technology Co., Ltd. ("**BJ Cheetah**") (1)	A company controlled by principal shareholder of the Company before December 30, 2020
Tuspark Innovation Venture Ltd. ("**Tuspark Innovation**")	The controlling shareholder of the Company before April 13, 2021
Beijing Tuspark Harmonious Investment Development Co., Ltd. ("**Tuspark Harmonious**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021
Ziguang Financial Leasing Co., Ltd. ("**Ziguang Finance Leasing**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021
Qidi Bus (Beijing) Technology Co., Ltd. ("**Qidi Tech**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021
Beijing Qidi Yefeng Investment Co., Ltd. ("**Beijing Qidi Yefeng**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021
Beijing Huaqing Property Management Co., Ltd. ("**Beijing Huaqing**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021

Name of related parties	Relationship with the Company
Shanghai Shibei Hi-Tech Co., Ltd. ("**SH Shibei**")	Non-controlling shareholder of a subsidiary
Shanghai Puping Information Technology Co., Ltd. ("**Shanghai Puping**") (4)	A company controlled by minority shareholder of the Company
Beijing Chengyishidai Network Engineering Technology Co., Ltd. ("**CYSD**") (3)	Equity investee of the Company
WiFire (Beijing) Technology Co., Ltd. ("**WiFire BJ**") (3)	Equity investee of the Company
Beijing Fastweb Network Technology Co., Ltd. ("**BJ Fastweb**") (3)	Equity investee of the Company
Jingliang Interconnected Cloud Technology Co., Ltd. ("**Jingliang Inter Cloud**")	Equity investee of the Company
Beijing Taiji Data Tech Co., Ltd. ("**Taiji**")	Equity investee of the Company in 2019 and wholly-owned subsidiary since January 31, 2020
Apurimac Partners Limited ("**APL**")	A company controlled by an officer of the Company
Asialeads Capital (Cayman) Limited	A company in which a director of the Company acts as an executive
Beijing New Internet Digital Technology Research Institution Limited ("**BJ New Internet**")	Equity investee of the Company
Anhui Suzhou Century Broadband Data Technology Co., Ltd. ("**SZ Century**")	A company controlled by an equity investee of principle shareholder of the Company from December 1, 2021

* *These are the related parties that have engaged in significant transactions with the Company for the years ended December 31, 2019, 2020 and 2021.*

(1) These companies are ultimately controlled by the same party. King Venture made a significant investment in the Company in 2015. These companies ceased to be related parties as the Company repurchased the shares from King Venture on December 30, 2020.

(2) These companies are ultimately controlled by the same party. Xiaomi made a significant investment in the Company in 2015. These companies ceased to be related parties as the Company repurchased the shares from King Venture on December 30, 2020.

(3) These entities were disposed by the Company in September 2017, included in WiFire Entities, and determined by the Company as related parties as of December 31, 2019, 2020 and 2021.

(4) These entities are controlled by Waburg Pincus, a significant minority shareholder of the Company.

(5) These companies are ultimately controlled by the same party. Tuspark Innovation was the controlling shareholder as of December 31, 2020. These companies ceased to be related parties as the Company repurchased shares from Tuspark Innovation on April 13, 2021.

b) Other than disclosed elsewhere, the Company had the following significant related party transactions for the years ended December 31, 2019, 2020 and 2021:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Services provided to:				
– SZ Century	–	–	1,445	227
– Jingliang Inter Cloud	–	880	480	75
– BJ New Internet	–	–	170	27
– Xiaomi Group	437,694	527,679	–	–
– Qidi Tech	7,427	3,478	–	–
– BJ Cheetah	169	98	–	–
– BJ Kingsoft	3,475	43	–	–
– Taiji	7,899	–	–	–
– WiFire BJ	1,934	–	–	–
– Others	1,494	305	144	23
Services provided by:				
– CYSD	38,918	38,918	38,918	6,107
– Beijing Huaqing	–	4,389	1,254	197
– BJ Kingsoft	3,492	16,867	–	–
– APL	–	8,124	–	–
– Jingliang Inter Cloud	8,829	4,956	–	–
– Taiji	19,942	–	–	–
– Others	5,866	796	1,223	192
Loan to:				
– Shanghai Puping	–	62,531	75,611	11,865
– BJ New Internet	–	–	261	41
– Taiji	1,500	–	–	–
Interest income from loan to:				
– SH Shibei	–	–	1,321	207
– BJ Fastweb	700	–	–	–
Lease deposit paid to:				
– Ziguang Finance Leasing	6,154	135	–	–
Lease payment paid to:				
– Ziguang Finance Leasing	17,156	30,776	10,431	1,637
– Beijing Qidi Yefeng	–	4,516	2,154	338
– Tuspark Harmonious	68,832	43,703	–	–
Cash consideration for shares repurchase				
– Tuspark Innovation	–	–	1,701,804	267,050
– King Venture	–	130,472	–	–

c) The Company had the following related party balances as of December 31, 2020 and 2021:

	As of December 31,		
	2020	**2021**	
	RMB	*RMB*	*US$*
Amounts due from related parties:			
Current:			
– Shanghai Puping	62,531	138,142	21,677
– SZ Century	–	16,996	2,667
– SH Shibei	9,800	11,121	1,745
– BJ New Internet	–	441	69
– Ziguang Finance Leasing	2,042	–	–
– Others	1,146	1,267	200
	75,519	167,967	26,358
Non-current:			
– Tuspark Harmonious	11,863	–	–
– Ziguang Finance Leasing	6,289	–	–
– Beijing Qidi Yefeng	1,124	–	–
– Others	1,286	–	–
	20,562	–	–
Amounts due to related parties:			
Current:			
– CYSD	189	6,870	1,078
– APL	783	765	120
– SZ Century	–	571	90
– Ziguang Finance Leasing	31,681	–	–
– Tuspark Harmonious	13,557	–	–
– Beijing Qidi Yefeng	4,410	–	–
– Others	387	566	89
	51,007	8,772	1,377
Non-current:			
– Tuspark Harmonious	715,992	–	–
– Ziguang Finance Leasing	22,247	–	–
– Beijing Qidi Yefeng	9,507	–	–
	747,746	–	–

27. RESTRICTED NET ASSETS

The Company's ability to pay dividends is primarily dependent on the Company receiving distributions of funds from its subsidiaries. Relevant PRC statutory laws and regulations permit payments of dividends by the Company's PRC subsidiaries only out of their retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. The results of operations reflected in the consolidated financial statements prepared in accordance with U.S. GAAP differ from those reflected in the statutory financial statements of the Company's PRC subsidiaries.

In accordance with the PRC Regulations on Enterprises with Foreign Investment and the articles of association of the Company's PRC subsidiaries, a foreign-invested enterprise established in the PRC is required to provide certain statutory reserves, namely general reserve fund, the enterprise expansion fund and staff welfare and bonus fund which are appropriated from net profit as reported in the enterprise's PRC statutory accounts. A foreign-invested enterprise is required to allocate at least 10% of its annual after-tax profit to the general reserve until such reserve has reached 50% of its respective registered capital based on the enterprise's PRC statutory accounts. Appropriations to the enterprise expansion fund and staff welfare and bonus fund are at the discretion of the board of directors for all foreign-invested enterprises. The aforementioned reserves can only be used for specific purposes and are not distributable as cash dividends. VNET China was established as a foreign-invested enterprise and, therefore, is subject to the above mandated restrictions on distributable profits. As of December 31, 2020, and 2021, the Company's PRC subsidiaries had appropriated RMB74,462 and RMB74,462 (US$11,685), respectively, in its statutory reserves.

As a result of these PRC laws and regulations subject to the limit discussed above that require annual appropriations of 10% of after-tax income to be set aside, prior to payment of dividends as general reserve fund, the Company's PRC subsidiaries are restricted in their ability to transfer a portion of their net assets to the Company. Amounts restricted include paid-in capital, additional paid in capital and statutory reserve funds of the Company's PRC subsidiaries and the equity of the Consolidated VIEs, as determined pursuant to PRC generally accepted accounting principles, totaling an aggregate of RMB13,114,157 (US$2,057,897) as of December 31, 2021.

28. (LOSS) EARNING PER SHARE

Basic and diluted (loss) earning per share for each of the years presented were calculated as follows:

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Numerator:				
Net (loss) earning	(181,246)	(2,680,259)	515,101	80,831
Net income attributable to non-controlling interest	(1,046)	(29,088)	(15,003)	(2,354)
Net (loss) earning attributable to the Company	(182,292)	(2,709,347)	500,098	78,477
Plus undeclared cumulative dividend on perpetual convertible preferred shares	–	(22,806)	–	–
Deemed distribution to perpetual convertible preferred shareholders	–	(470,643)	–	–
Dividend distribution to perpetual convertible preferred shareholders	–	–	(5,831)	(915)
Adjusted net (loss) earning attributable to ordinary shareholders – Basic	(182,292)	(3,202,796)	494,267	77,562
Changes in the fair value of convertible promissory notes	–	–	(829,149)	(130,112)
Adjusted interest for convertible promissory notes	–	–	9,703	1,523
Adjusted net loss attributable to ordinary shareholders – Diluted	(182,292)	(3,202,796)	(325,179)	(51,027)
Denominator:				
Weighted average number of shares outstanding – basic	668,833,756	716,888,919	865,352,554	865,352,554
Weighted average number of shares outstanding – diluted	668,833,756	716,888,919	911,591,433	911,591,433
(Loss) earning per share – Basic:				
Net (loss) earning	(0.27)	(4.47)	0.57	0.09
	(0.27)	(4.47)	0.57	0.09
Loss per share – Diluted:				
Net loss	(0.27)	(4.47)	(0.36)	(0.06)
	(0.27)	(4.47)	(0.36)	(0.06)

In 2019, 2020 and 2021, the Company issued 6,700,002, nil and 7,800,000 ordinary shares to its share depositary bank which will be used to settle stock option awards upon their exercise, respectively. No consideration was received by the Company for this issuance of ordinary shares. These ordinary shares are legally issued and outstanding but are treated as escrowed shares for accounting purposes and therefore, have been excluded from the computation of loss per share. Any ordinary shares not used in the settlement of stock option awards will be returned to the Company.

Stock options, RSUs, the Company's series A preferred shares (Note 18) and 2026 Convertible Notes (Note 19) or other potentially dilutive equity instruments were excluded from the calculation of diluted loss earnings per share if they were anti-dilutive.

29. SHARE CAPITAL

Holders of Class A Ordinary Shares, Class B Ordinary Shares and Class C Ordinary Shares are entitled to the same rights except for voting and conversion rights. In respect of matters requiring a shareholder's vote, each Class A Ordinary Share is entitled to one vote right, each Class B Ordinary Share is entitled to ten votes, and each Class C Ordinary Share is entitled to one vote and certain veto rights. Each Class B Ordinary Share and Class C Ordinary Share is convertible into one Class A Ordinary Share at any time by the holder. Class A Ordinary Shares are not convertible into Class B Ordinary Share and Class C Ordinary Shares under any circumstances. Upon any transfer of Class B Ordinary Shares and Class C Ordinary Shares by a holder to any person or entity which is not an affiliate of such holder, such Class B Ordinary Shares and Class C Ordinary Share will be automatically converted into an equal number of Class A Ordinary Shares.

For the years ended December 31, 2019, 2020 and 2021, 304,200, nil and 16,680,000 Class A ordinary shares were issued to settle the share options exercised and RSUs vested. For the year ended December 31, 2020, 104,304 Class A ordinary shares issued to settle RSUs vested in prior years were repurchased and cancelled.

In October 2019, the Company issued 60,000 newly created Class C ordinary shares to Personal Group Limited, a British Virgin Islands company wholly owned by Mr. Sheng Chen, the executive chairman of our board of directors, at a price of US$1.35 per share, to execute business strategies over the long term under the leadership of the Company's board and senior management.

In August 2020, the Company completed a public offering in which the Company offered and sold 19,550,000 ADSs (or 117,300,000 Class A ordinary shares), including 2,550,000 ADSs (or 15,300,000 Class A ordinary shares) purchased by the underwriters by exercising their option. The Company raised a total of RMB2,680,421 in proceeds from this public offering, net of underwriting discounts and commissions and other issuance costs.

During the year ended December 31, 2020 and 2021, Purchaser of the 2025 Convertible Notes exercised the right to convert approximately 23.7% and 42.3% of the total principal amount issued to 23,710,140 and 42,401,010 newly issued Class A ordinary shares at the conversion price of US$12 per ADS, respectively.

In 2020 and 2021, the Company issued nil and 7,800,000 ordinary shares to its share depositary bank which will be used to settle stock option awards upon their exercise, respectively. No consideration was received by the Company for this issuance of ordinary shares. These ordinary shares are legally issued and outstanding but are treated as escrowed shares for accounting purposes.

On March 1, 2021, all 150,000 Series A perpetual convertible preferred shares has been converted into 54,507,816 Class A Ordinary Shares.

In April 2021, the Company repurchased from Tuspark Innovation Venture Ltd., ("**Tuspark**") 48,634,493 Class B ordinary shares for an aggregate purchase price of US$260.0 million. The repurchase price was at US$5.346 per ordinary share, or US$32.076 per ADS. 48,634,493 Class B ordinary shares were cancelled immediately. Meanwhile, remaining 62,418,897 Class B ordinary shares held by Tuspark were converted into the same number of Class A ordinary shares of the Company.

On August 19, 2021, 4,100,000 Class B ordinary shares held by Sunrise Corporate Holding Ltd., were converted into the same number of Class A ordinary shares.

30. FAIR VALUE MEASUREMENTS

The Company applies ASC 820. ASC 820 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. ASC 820 requires disclosures to be provided on fair value measurement.

ASC 820 establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1 – Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2 – Include other inputs that are directly or indirectly observable in the marketplace.

Level 3 – Unobservable inputs which are supported by little or no market activity.

ASC 820 describes three main approaches to measuring the fair value of assets and liabilities: (1) market approach; (2) income approach; and (3) cost approach. The market approach uses prices and other relevant information generated from market transactions involving identical or comparable assets or liabilities. The income approach uses valuation techniques to convert future amounts to a single present value amount. The measurement is based on the value indicated by current market expectations about those future amounts. The cost approach is based on the amount that would currently be required to replace an asset.

Cash equivalents, time deposits, bonds payable and 2026 Convertible Notes are classified within Level 1 because they are valued by using quoted market prices.

The 2025 Convertible Notes, share consideration due to the original shareholders for business combination, and long-term investments are classified within Level 3. The fair value of share consideration due to the original shareholders for business combination (Note 4) was estimated using Monte Carlo simulation model that involves several parameters including the share price, share price volatility and risk-free rate. The fair value of 2025 Convertible Notes is measured using binomial tree pricing model that involves several parameters including the Company's stock price, stock price volatility determined from the Company's historical stock prices, the remaining maturity term and the discount rate.

The Company measures equity investments elected to use the measurement alternative at fair value on a non-recurring basis, in the cases of an impairment charge is recognized, fair value of an investment is remeasured in an acquisition/a disposal, and an orderly transaction for identical or similar investments of the same issuer was identified.

Assets and liabilities measured at fair value on a recurring basis were summarized below:

	Fair value measurement using:			
	Quoted prices in active markets for identical assets (Level 1)	Significant other Unobservable inputs (Level 2)	observable inputs (Level 3)	Fair value at December 31, 2020
	RMB	*RMB*	*RMB*	*US$*
Cash equivalents:				
– Time deposits	645,879	–	–	645,879
Short-term investments:				
– Time deposits	285,872	–	–	285,872
Long-term investments:				
– Available-for-sale debt securities	–	–	1,713	1,713
Assets	931,751	–	1,713	933,464
Short-term borrowings:				
– Current portion of bonds payable	1,998,088	–	–	1,998,088
2025 Convertible Notes	–	–	3,014,057	3,014,057
Liabilities	1,998,088	–	3,014,057	5,012,145

	Fair value measurement using:				
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	observable inputs (Level 3)	Fair value at December 31, 2021	
	RMB	*RMB*	*RMB*	*RMB*	*US$*
Cash equivalents:					
– Time deposits	15,013	–	–	15,013	2,356
Short-term investments:					
– Time deposits	–	–	–	–	–
Long-term investments:					
–Available-for-sale debt securities	–	–	1,600	1,600	251
Assets	15,013	–	1,600	16,613	2,607
– Current portion of bonds payable					
Convertible promissory notes					
– 2025 Convertible promissory notes	–	–	513,754	513,754	80,619
– 2026 Convertible promissory notes	3,021,852	–	–	3,021,852	474,195
Accrued expenses and other payables:					
– Share consideration due to the original shareholders for business combination *(Note 4)*	–	–	214,577	214,577	33,672
Liabilities	3,021,852	–	728,331	3,750,183	588,486

The following table presented a reconciliation of all liabilities measured at fair value on a recurring basis using significant unobservable inputs (level 3):

	2025 Convertible Notes
	RMB
Fair value at issuance date *(Note 19)*	1,409,385
Foreign exchange loss	(219,001)
Changes in the fair value	2,544,220
Reclassification to equity	(720,547)
Fair value at December 31, 2020	3,014,057
Foreign exchange loss	(31,348)
Changes in the fair value	(829,149)
Reclassification to equity	(1,639,806)
Fair value at December 31, 2021	513,754
Fair value at December 31, 2021 (US$)	80,619

	Share consideration due to the original shareholders for business combination
	RMB
Fair value at grant date *(Note 4)*	214,953
Changes in the fair value	(376)
Fair value at December 31, 2021	214,577
Fair value at December 31, 2021 (US$)	33,672

Assets measured at fair value on a non-recurring basis

The Company measures certain non-financial assets on a non-recurring basis. The Company's non-financial long-lived assets, such as intangible assets, goodwill and fixed assets, would be measured at fair value only if they were determined to be impaired on an other-than-temporary basis. The fair values of non-financial long-lived assets were measured under income approach, based on the Company's best estimation which primarily includes significant unobservable inputs (level 3) such as future cash flows and discount rate.

31. COMMITMENTS AND CONTINGENCIES

Capital commitments

As of December 31, 2021, the Company has the following commitments to purchase certain computer and network equipment and construction-in-progress:

	RMB	*US$*
For the year ending December 31,		
2022	1,586,604	248,973
2023 and thereafter	32,725	5,135
	1,619,329	254,108

Bandwidth and cabinet capacity purchase commitments

As of December 31, 2021, the Company has outstanding purchase commitments in relation to bandwidth and cabinet capacity consisting of the following:

	RMB	*US$*
For the year ending December 31,		
2022	698,586	109,623
2023	110,779	17,384
2024	64,525	10,125
2025	2,314	363
2026	2,314	363
2027 and thereafter	3,355	526
	881,873	138,384

Income Taxes

As of December 31, 2021, the Company has recognized an accrual of RMB77,573 (US$12,173) for unrecognized tax benefits and its interest (Note 25). The final outcome of the tax uncertainty is dependent upon various matters including tax examinations, interpretation of tax laws or expiration of status of limitation. However, due to the uncertainties associated with the status of examinations, including the protocols of finalizing audits by the relevant tax authorities, there is a high degree of uncertainty regarding the future cash outflows associated with these tax uncertainties.

Operating litigation

In March 2019, a third-party supplier filed a lawsuit against the Company, alleging that the Company had not fully fulfilled its obligations under a network infrastructure cooperation agreement entered in 2013.

On October 30, 2020, the court announced the first judgement settlement and the settlement came into force from November 18, 2020. The Company assessed that the settlement is probable and recorded an estimated loss of RMB1,628 (US$250) within accrued expenses and other payables in the consolidated balance sheet as of December 31, 2020.

In the ordinary course of business, the Company may from time to time be involved in legal proceedings and litigations. As of December 31, 2020 and 2021, the Company did not consider an unfavorable outcome in any material respects in the outstanding legal proceedings and litigations to be probable.

32. SUBSEQUENT EVENTS

In January 2022, the Company has issued a convertible senior notes for an aggregate principal amount of US$250,000. The Notes have a term of five years and carry interest at 2% per annum.

33. PARENT COMPANY ONLY CONDENSED FINANCIAL INFORMATION

Condensed balance sheets

	Notes	As of December 31, 2020	2021	
		RMB	*RMB*	*US$*
ASSETS				
Current assets:				
Cash and cash equivalents		62,116	100,019	15,695
Prepaid expenses and other current assets		97,391	93,546	14,679
Amounts due from subsidiaries	*(b)*	9,320,580	9,844,114	1,544,756
Total current assets		9,480,087	10,037,679	1,575,130
Non-current assets:				
Investments in subsidiaries		2,169,222	2,333,998	366,255
Total non-current assets		2,169,222	2,333,998	366,255
Total assets		11,649,309	12,371,677	1,941,385
LIABILITIES AND SHAREHOLDERS' EQUITY				
Current liabilities:				
Accrued expenses and other payables		87,001	54,893	8,614
Account payables		52	51	8
Current portion of bonds payable		1,943,619	–	–
Amount due to related parties		783	765	120
Amounts due to subsidiaries	*(b)*	38,863	806,788	126,602
Total current liabilities		2,070,318	862,497	135,344
Non-current liabilities:				
Convertible promissory notes		3,014,057	4,266,951	669,578
Total non-current liabilities		3,014,057	4,266,951	669,578
Total liabilities		5,084,375	5,129,448	804,922

		As of December 31,		
	Notes	**2020**	**2021**	
		RMB	*RMB*	*US$*
Shareholders' equity:				
Class A Ordinary shares (par value of US$0.00001 per share; 1,199,790,000 and 1,199,790,000 shares authorized; 672,024,600 and 859,932,323 issued and outstanding as of December 31, 2020 and 2021, respectively)		44	56	8
Class B Ordinary Shares (par value of US$0.00001 per share; 300,000,000 and 300,000,000 shares authorized; 145,875,113 and 30,721,723 issued and outstanding as of December 31, 2020 and 2021, respectively)		12	4	1
Class C Ordinary Shares (par value of US$0.00001 per share; 60,000 and 60,000 shares authorized; 60,000 and 60,000 shares issued and outstanding as of December 31, 2020 and 2021, respectively)		–	–	–
Series A perpetual convertible preferred shares (par value of US$0.00001 per share; 150,000 and 150,000 shares authorized; 150,000 and nil shares issued and outstanding as of December 31, 2020 and 2021, respectively)		1,047,468	–	–
Additional paid-in capital		13,083,119	15,198,055	2,384,906
Accumulated other comprehensive loss		(55,535)	(90,443)	(14,192)
Accumulated deficit		(7,160,651)	(7,515,920)	(1,179,412)
Treasury stock		(349,523)	(349,523)	(54,848)
Total shareholders' equity		6,564,934	7,242,229	1,136,463
Total liabilities and shareholders' equity		11,649,309	12,371,677	1,941,385

Condensed statements of operations

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Operating Expenses				
General and administrative expenses	(44,490)	(94,175)	(275,881)	(43,292)
Operating loss	(44,490)	(94,175)	(275,881)	(43,292)
Other loss	(274,572)	(168,656)	(119,932)	(18,820)
Changes in the fair value of convertible promissory notes	–	(2,544,220)	829,149	130,112
Share of profits from subsidiaries and Consolidated VIEs	136,770	97,704	66,762	10,477
Net (loss) income attributable to VNET Group, Inc.	(182,292)	(2,709,347)	500,098	78,477
Income tax expense	–	–	–	–
Net (loss) income	(182,292)	(2,709,347)	500,098	78,477

Condensed statements of comprehensive (loss) income

	For the years ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
Net (loss) income	(182,292)	(2,709,347)	500,098	78,477
Other comprehensive loss, net of tax of nil:				
Foreign currency translation adjustments, net of tax of nil	(8,075)	(133,439)	(34,908)	(5,478)
Other comprehensive loss, net of tax of nil:	(8,075)	(133,439)	(34,908)	(5,478)
Comprehensive (loss) income	(190,367)	(2,842,786)	465,190	72,999
Comprehensive (loss) income attributable to VNET Group, Inc.	(190,367)	(2,842,786)	465,190	72,999

Condensed statements of cash flows

	For the years ended December 31,			
	2019	**2020**	**2021**	
	RMB	*RMB*	*RMB*	*US$*
Net cash used in operating activities	(142,989)	(743,944)	(218,664)	(34,313)
Net cash (used in) generated from investing activities	(1,011,257)	(3,036,370)	113,530	17,815
Net cash generated from financing activities	807,765	3,598,441	143,037	22,446
Net (decrease) increase in cash and cash equivalents and restricted cash	(346,481)	(181,873)	37,903	5,948
Cash and cash equivalents and restricted cash at beginning of the year	590,470	243,989	62,116	9,747
Cash and cash equivalents and restricted cash at end of the year	243,989	62,116	100,019	15,695

(a) Basis of presentation

In the Company-only financial statements, the Company's investment in subsidiaries is stated at cost plus equity in undistributed earnings of subsidiaries since inception.

The Company records its investment in its subsidiary under the equity method of accounting as prescribed in ASC 323-10, *Investment-Equity Method and Joint Ventures*, and such investment is presented on the balance sheets as "Investments in subsidiaries" and the share of the subsidiaries' profit or loss is presented as "Share of profits of subsidiaries and Consolidated VIEs" on the statements of operations.

The subsidiaries did not pay any dividends to the Company for the years presented.

Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted and as such, these Company-only financial statements should be read in conjunction with the Company's consolidated financial statements.

(b) Related party transactions

The Company had the following related party balances as of December 31, 2020 and 2021:

	As of December 31,		
	2020	2021	
	RMB	*RMB*	*US$*
Amounts due from subsidiaries			
– VNET HK	7,043,586	7,195,150	1,129,076
– WiFire Open Network Group Ltd.	2,157,285	2,286,602	358,818
– VNET Future Technology Limited	–	306,034	48,023
– VNET Mobile	56,265	55,679	8,737
– HongKong Fastweb Holdings Co., Limited	62,780	–	–
– Others	664	649	102
	9,320,580	9,844,114	1,544,756
Amounts due to subsidiaries			
– DYX	9	462,551	72,584
– HongKong Fastweb Holdings Co., Limited	–	212,778	33,390
– VNET Beijing	35,783	76,453	11,997
– Others	3,071	55,006	8,631
	38,863	806,788	126,602

C. AUDITED CONSOLIDATED FINANCIAL STATEMENTS OF THE TARGET COMPANY FOR THE YEAR ENDED 31 DECEMBER 2022

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors VNET Group, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheet of VNET Group, Inc. and subsidiaries (the Company) as of December 31, 2022, the related consolidated statements of operations, comprehensive loss, shareholders' equity, and cash flows for the year then ended, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022, and the result of its operations and its cash flows for the year then ended, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated April 26, 2023 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audit included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audit provides a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation of goodwill for a reporting unit

As discussed in Notes 2(o) and 11 to the consolidated financial statements, the Company has RMB1,364,191 thousand of goodwill as of December 31, 2022. The Company performs goodwill impairment testing at the reporting unit level at least annually and more frequently upon the occurrence of certain events.

We identified the valuation of goodwill for a reporting unit as a critical audit matter. Subjective and challenging auditor judgment was required to evaluate the revenue growth rates used in the Company's estimate of the fair value of the reporting unit. In addition, specialized skills and knowledge were required to evaluate the discount rate used in such estimate.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of the internal control related to the Company's determination of forecasted revenue growth rates and discount rate used in the Company's estimate of the fair value of the reporting unit. We evaluated the Company's forecasted revenue growth rates by comparing them to industry and peer company forecasted revenue growth rates. We also assessed the Company's forecasted revenue growth rates by comparing them to historical experience and to underlying business strategies. We involved valuation professionals with specialized skills and knowledge, who assisted in evaluating the discount rate by comparing it to a discount rate range that was independently developed using publicly available market data for comparable entities.

/s/KPMG Huazhen LLP

We have served as the Company's auditor since 2022.

Beijing, China
April 26, 2023

To the Shareholders and the Board of Directors of VNET Group, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheet of VNET Group, Inc. (the "**Company**") as of December 31, 2021, the related consolidated statements of operations, comprehensive (loss) income, cash flows and shareholders' equity for each of the two years in the period ended December 31, 2021 and the related notes (collectively referred to as the "**consolidated financial statements**"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2021, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2021, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/Ernst & Young Hua Ming LLP

We have served as the Company's auditor from 2010 to 2022.

Shanghai, the People's Republic of China

April 26, 2022

VNET GROUP, INC.

CONSOLIDATED BALANCE SHEETS

*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Notes	As of December 31, 2021	2022	
		RMB	RMB	US$
ASSETS				
Current assets:				
Cash and cash equivalents		1,372,481	2,661,321	385,855
Restricted cash		327,767	327,673	47,508
Accounts and notes receivable (net of allowance for doubtful debt of RMB99,620 and RMB134,569 (US$19,511) as of December 31, 2021 and 2022, respectively)	5	1,405,997	1,763,693	255,711
Prepaid expenses and other current assets	7	2,049,911	2,147,500	311,361
Amounts due from related parties	25	167,967	152,089	22,051
Total current assets		5,324,123	7,052,276	1,022,486
Non-current assets:				
Property and equipment, net	8	10,092,419	11,964,498	1,734,689
Intangible assets, net	9	900,335	1,497,131	217,064
Land use rights, net	10	337,235	576,020	83,515
Operating lease right-of-use assets, net	16	2,869,338	3,503,925	508,021
Goodwill	11	1,339,657	1,364,191	197,789
Restricted cash		8,225	500	72
Deferred tax assets, net	24	168,002	196,098	28,432
Long-term investments, net	12	98,243	242,194	35,115
Other non-current assets	13	1,957,462	551,572	79,970
Total non-current assets		17,770,916	19,896,129	2,884,667
Total assets		23,095,039	26,948,405	3,907,153

VNET GROUP, INC.
CONSOLIDATED BALANCE SHEETS (CONTINUED)
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Notes	As of December 31, 2021 RMB	2022 RMB	2022 US$
LIABILITIES AND SHAREHOLDERS' EQUITY				
Current liabilities:				
Accounts and notes payable (including accounts and notes payable of the Consolidated VIEs without recourse to the primary beneficiaries of RMB352,478 and RMB483,030 (US$70,033) as of December 31, 2021 and 2022, respectively)		493,506	713,628	103,466
Accrued expenses and other payables (including accrued expenses and other payables of the Consolidated VIEs without recourse to the primary beneficiaries of RMB1,342,886 and RMB1,488,031 (US$215,742) as of December 31, 2021 and 2022, respectively)	*15*	2,298,089	2,410,479	349,487
Advances from customers (including advances from customers of the Consolidated VIEs without recourse to the primary beneficiaries of RMB1,041,902 and RMB1,157,963 (US$167,889) as of December 31, 2021 and 2022, respectively)		1,041,902	1,157,963	167,889
Deferred revenue (including deferred revenue of the Consolidated VIEs without recourse to the primary beneficiaries of RMB49,055 and RMB84,775 (US$12,291) as of December 31, 2021 and 2022, respectively)		55,695	95,078	13,785
Income taxes payable (including income taxes payable of the Consolidated VIEs without recourse to the primary beneficiaries of RMB20,972 and RMB25,188 (US$3,652) as of December 31, 2021 and 2022, respectively)		43,770	42,017	6,092
Amounts due to related parties (including amounts due to related parties of the Consolidated VIEs without recourse to the primary beneficiaries of RMB8,007 and RMB6,928 (US$1,004) as of December 31, 2021 and 2022, respectively)	*25*	8,772	6,928	1,004
Current portion of long-term borrowings (including current portion of long-term borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB350,609 and RMB417,442 (US$60,523) as of December 31, 2021 and 2022, respectively)	*14*	384,158	484,020	70,176

VNET GROUP, INC.

CONSOLIDATED BALANCE SHEETS (CONTINUED)

*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

		As of December 31,		
	Notes	**2021**	**2022**	
		RMB	*RMB*	*US$*
Current portion of finance lease liabilities (including current portion of finance lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB200,961 and RMB165,221 (US$23,955) as of December 31, 2021 and 2022, respectively)	*16*	244,032	206,260	29,905
Current portion of deferred government grants (including current portion of deferred government grants of the Consolidated VIEs without recourse to the primary beneficiaries of RMB2,074 and RMB3,646 (US$529) as of December 31, 2021 and 2022, respectively)	*20*	2,074	3,646	529
Current portion of operating lease liabilities (including current portion of operating lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB579,391 and RMB655,663 (US$95,062) as of December 31, 2021 and 2022, respectively)	*16*	607,997	674,288	97,763
Convertible promissory notes	*19*	–	537,778	77,970
Total current liabilities		5,179,995	6,332,085	918,066

VNET GROUP, INC.
CONSOLIDATED BALANCE SHEETS (CONTINUED)
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Notes	As of December 31, 2021	2022	
		RMB	RMB	US$
Non-current liabilities:				
Long-term borrowings (including long-term borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB1,480,709 and RMB1,861,545 (US$269,899) as of December 31, 2021 and 2022, respectively)	14	2,215,015	3,049,856	442,188
Convertible promissory notes	19	4,266,951	5,859,259	849,513
Non-current portion of finance lease liabilities (including non-current portion of finance lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB704,255 and RMB615,309 (US$89,211) as of December 31, 2021 and 2022, respectively)	16	1,119,751	1,047,640	151,894
Unrecognized tax benefits (including unrecognized tax benefits of the Consolidated VIEs without recourse to the primary beneficiaries of RMB77,192 and RMB86,799 (US$12,585) as of December 31, 2021 and 2022, respectively)	24	77,573	87,174	12,639
Deferred tax liabilities (including deferred tax liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB132,370 and RMB149,475 (US$21,672) as of December 31, 2021 and 2022, respectively)	24	348,404	682,580	98,965
Deferred government grants (including deferred government grants of the Consolidated VIEs without recourse to the primary beneficiaries of RMB2,294 and RMB2,726 (US$395) as of December 31, 2021 and 2022, respectively)	20	2,294	2,672	387
Non-current portion of operating lease liabilities (including non-current portion of operating lease liabilities of the Consolidated VIEs without resource to the primary beneficiaries of RMB2,114,309 and RMB2,872,323 (US$416,448) as of December 31, 2021 and 2022, respectively)	16	2,284,055	2,905,283	421,226
Total non-current liabilities		10,314,043	13,634,464	1,976,812
Total liabilities		15,494,038	19,966,549	2,894,878
Commitments and contingencies	30			

VNET GROUP, INC.
CONSOLIDATED BALANCE SHEETS (CONTINUED)
*(Amounts in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

		As of December 31,		
	Notes	**2021**	**2022**	
		RMB	*RMB*	*US$*
Shareholders' equity:				
Class A Ordinary shares (par value of US$0.00001 per share; 1,199,790,000 and 1,199,490,000 shares authorized; 859,932,323 and 859,932,323 shares issued and outstanding as of December 31, 2021 and 2022, respectively)	*28*	56	56	8
Class B Ordinary Shares (par value of US$0.00001 per share; 300,000,000 and 300,000,000 shares authorized; 30,721,723 and 30,721,723 shares issued and outstanding as of December 31, 2021 and 2022, respectively)	*28*	4	4	1
Class C Ordinary Shares (par value of US$0.00001 per share; 60,000 and 60,000 shares authorized; 60,000 and 60,000 shares issued and outstanding as of December 31, 2021 and 2022, respectively)	*28*	–	–	–
Additional paid-in capital		15,198,055	15,239,926	2,209,582
Accumulated other comprehensive (loss) income	*21*	(90,443)	11,022	1,598
Statutory reserves		74,462	77,996	11,309
Accumulated deficit		(7,590,382)	(8,369,868)	(1,213,517)
Treasury stock		(349,523)	(349,523)	(50,676)
Total VNET Group, Inc. shareholders' equity		7,242,229	6,609,613	958,305
Non-controlling interest		358,772	372,243	53,970
Total shareholders' equity		7,601,001	6,981,856	1,012,275
Total liabilities and shareholders' equity		23,095,039	26,948,405	3,907,153

The accompanying notes are an integral part of these consolidated financial statements

VNET GROUP, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

(Amounts in thousands of RMB and US$, except for number of shares and per share data)

	Notes	For the years ended December 31, 2020	2021	2022	
		RMB	RMB	RMB	US$
Net revenues					
Hosting and related services		4,829,019	6,189,801	7,065,232	1,024,362
Cost of revenues					
Hosting and related services		(3,753,008)	(4,751,771)	(5,706,976)	(827,434)
Gross profit		1,076,011	1,438,030	1,358,256	196,928
Operating income (expenses)					
Operating income		7,619	–	60,013	8,701
Sales and marketing expenses		(235,012)	(255,400)	(311,917)	(45,224)
Research and development expenses		(112,891)	(188,489)	(306,842)	(44,488)
General and administrative expenses		(535,111)	(842,354)	(642,945)	(93,218)
Allowance for doubtful debt		(2,393)	(18,399)	(35,409)	(5,134)
Impairment of loan receivable to potential investee		–	(2,807)	–	–
Impairment of long-lived assets		(81,619)	(109,267)	–	–
Total operating expenses		(959,407)	(1,416,716)	(1,237,100)	(179,363)
Operating profit		116,604	21,314	121,156	17,565
Interest income		31,711	31,897	31,574	4,578
Interest expense		(380,609)	(334,950)	(273,305)	(39,626)
Other income		16,539	33,923	17,328	2,512
Other expenses		(36,912)	(22,700)	(26,599)	(3,856)
Changes in the fair value of convertible promissory notes		(2,544,220)	829,149	22,626	3,280
Impairment of long-term investment		(13,030)	(3,495)	–	–
Foreign exchange gain (loss), net		228,125	110,036	(523,235)	(75,862)
(Loss) income before income taxes and gain (loss) from equity method investments		(2,581,792)	665,174	(630,455)	(91,409)
Income tax expenses	24	(109,336)	(111,407)	(133,464)	(19,350)
Gain (loss) from equity method investments		10,869	(38,666)	1,925	279
Net (loss) income		(2,680,259)	515,101	(761,994)	(110,480)
Net profit attributable to non-controlling interest		(29,088)	(15,003)	(13,958)	(2,024)
Net (loss) income attributable to the VNET Group, Inc.		(2,709,347)	500,098	(775,952)	(112,504)

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS (CONTINUED)

(Amounts in thousands of RMB and US$, except for number of shares and per share data)

		For the years ended December 31,			
	Notes	**2020**	**2021**	**2022**	
		RMB	*RMB*	*RMB*	*US$*
(Loss) earning per share:					
Basic	*27*	RMB(4.47)	RMB0.57	RMB(0.87)	USD(0.13)
Diluted	*27*	RMB(4.47)	RMB(0.36)	RMB(0.87)	USD(0.13)
Shares used in (loss) earning per share computation:					
Basic	*27*	716,888,919	865,352,554	886,817,620	886,817,620
Diluted	*27*	716,888,919	911,591,433	886,817,620	886,817,620

The accompanying notes are an integral part of these consolidated financial statement

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME

(Amounts in thousands of RMB and US$)

	For the years ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Net (loss) income	(2,680,259)	515,101	(761,994)	(110,480)
Other comprehensive (loss) income, net of tax of nil				
Foreign currency translation adjustments, net of tax of nil	(133,439)	(34,908)	101,465	14,711
Other comprehensive (loss) income, net of tax of nil	(133,439)	(34,908)	101,465	14,711
Comprehensive (loss) income	(2,813,698)	480,193	(660,529)	(95,769)
Comprehensive income attributable to non-controlling interest	(29,088)	(15,003)	(13,958)	(2,024)
Comprehensive (loss) income attributable to VNET Group, Inc.	(2,842,786)	465,190	(674,487)	(97,793)

The accompanying notes are an integral part of these consolidated financial statements

VNET GROUP, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands of RMB and US$)

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
CASH FLOWS FROM OPERATING ACTIVITIES				
Net (loss) income	(2,680,259)	515,101	(761,994)	(110,480)
Adjustments to reconcile net (loss) income to net cash generated from operating activities:				
Foreign exchange (gain) loss, net	(228,125)	(110,036)	523,235	75,862
Depreciation and amortization	988,983	1,267,578	1,595,942	231,390
Loss on disposal of property and equipment and intangible assets	6,032	6,339	15,592	2,261
Allowance for doubtful debt	2,393	18,399	35,409	5,134
Allowance for other receivables	–	–	15,000	2,175
Share-based compensation expense	136,804	320,010	118,170	17,133
Impairment of loan receivable to potential investee	–	2,807	–	–
Deferred income tax (benefits) expenses	(22,508)	325	17,887	2,593
(Gain) loss from equity method investments	(10,869)	38,666	(1,925)	(279)
Distribution received from an equity method investment	17,723	–	15,232	2,208
Gain from disposal of equity investments without readily determinable fair value	(257)	–	–	–
Gain from disposal of subsidiaries	–	(17,153)	(1,388)	(201)
Impairment of long-lived assets	81,619	109,267	–	–
Impairment of long-term investment	13,030	3,495	–	–
Lease expense	375,112	557,865	508,818	73,772
Changes in the fair value of convertible promissory notes	2,544,220	(829,149)	(22,626)	(3,280)
Changes in operating assets and liabilities, net of effects of acquisitions and disposals:				
Accounts and notes receivable	(171,608)	(533,323)	(381,194)	(55,268)
Prepaid expenses and other current assets	(117,110)	73,639	621,973	90,177
Amounts due from related parties	37,468	(17,502)	(6,997)	(1,014)
Accounts and notes payables	(13,741)	195,728	220,129	31,916
Unrecognized tax benefits	66,253	8,877	9,601	1,392
Accrued expenses and other payables	91,123	315,989	226,893	32,896
Deferred revenue	5,620	(7,550)	39,383	5,710
Advances from customers	(27,098)	307	116,061	16,827
Income taxes payable	(19,004)	14,742	(1,753)	(254)
Deferred government grants	–	93	5,000	725
Amounts due to related parties	(5,605)	7,431	(992)	(144)
Operating lease liabilities	(355,953)	(554,023)	(465,242)	(67,454)
Net cash generated from operating activities	714,243	1,387,922	2,440,214	353,797

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

(Amounts in thousands of RMB and US$)

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
CASH FLOWS FROM INVESTING ACTIVITIES				
Purchases of property and equipment	(2,473,332)	(2,691,928)	(2,995,608)	(434,322)
Purchases of intangible assets	(30,091)	(42,285)	(57,295)	(8,307)
Purchases of land use rights	–	(91,744)	(47,704)	(6,916)
Proceeds from disposal of property and equipment	1,777	10,220	6,132	889
Proceeds from disposal of land use right	9,397	–	–	–
Proceed from disposal of subsidiaries, net	5,802	–	300	43
Payments for short-term investments	(328,182)	(64,605)	–	–
Payment of loan to third parties	(12,562)	(16,474)	(217,586)	(31,547)
Payment of loans to related parties	(62,531)	(75,872)	(500)	(72)
Receipt of loans to third parties	30,000	17,010	5,000	725
Proceeds received from maturity of short-term investments	397,575	347,520	–	–
Proceeds from disposal of long-term investments	1,923	120	–	–
Payments for long-term investments	–	(5,000)	(213,000)	(30,882)
Prepayments and deposits for acquiring data center	(1,302,601)	(679,941)	(36,000)	(5,220)
Collection of deposit for acquiring data center	106,436	30,000	–	–
Payments for acquisitions, net of cash acquired	(369,924)	(509,634)	(2,991)	(434)
Cash receipt from related parties due to restructuring	140,738	–	–	–
Payment for other investment activities	(3,599)	–	–	–
Net cash used in investing activities	(3,889,174)	(3,772,613)	(3,559,252)	(516,043)
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds from exercise of stock options	3,029	472	–	–
Proceeds from issuance of ordinary shares	2,680,421	(131)	–	–
Proceeds from issuance of Series A perpetual convertible preferred shares	1,058,325	–	–	–
Payment of issuance cost of Series A perpetual convertible preferred shares	(9,374)	–	–	–
Proceeds from issuance of 2025 Convertible Notes, net of issuance cost	1,387,781	–	–	–
Proceeds from issuance of 2027 Convertible Notes, net of issuance cost *(Note 19)*	–	–	1,592,627	230,910
Repurchase and repayment of 2020 Notes *(Note 17)*	(915,543)	–	–	–
Proceeds from issuance of 2026 Convertible Notes, net of issuance cost	–	3,790,396	–	–
Proceeds from long-term bank borrowings	594,619	1,628,438	1,099,893	159,469
Proceeds from short-term bank borrowings	34,000	–	–	–
Proceeds from other long-term borrowings	374,448	220,000	282,000	40,886
Repayment of long-term bank borrowings	(33,000)	(179,455)	(238,305)	(34,551)
Repayment of short-term bank borrowings	(234,500)	(34,000)	–	–
Repayment and deposits for other long-term borrowings	(125,825)	(175,123)	(207,089)	(30,025)
Payments for purchase of property and equipment through finance leases	(376,232)	(579,660)	(231,046)	(33,498)
Repayment of loan from third parties	(169,325)	(66,884)	–	–
Contribution from non-controlling interest in subsidiaries	24,903	11,223	–	–
Payments for share repurchase and cancellation *(Note 28)*	(130,472)	(1,701,807)	–	–
Repayment of notes payable	–	(1,945,620)	–	–
Profit distribution to non-controlling interest	–	(272)	–	–
Net cash generated from financing activities	4,163,255	967,577	2,298,080	333,191

VNET GROUP, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

(Amounts in thousands of RMB and US$)

	For the years ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Effect of foreign exchange rate changes on cash and cash equivalents and restricted cash	(229,064)	9,150	101,979	14,785
Net increase (decrease) in cash and cash equivalents and restricted cash	759,260	(1,407,964)	1,281,021	185,730
Cash and cash equivalents and restricted cash at beginning of year	2,357,177	3,116,437	1,708,473	247,705
Cash and cash equivalents and restricted cash at end of year	3,116,437	1,708,473	2,989,494	433,435
Reconciliation of cash and cash equivalents and restricted cash to the consolidated balance sheets				
Cash and cash equivalents	2,710,349	1,372,481	2,661,321	385,855
Restricted cash-current	270,450	327,767	327,673	47,508
Restricted cash-non-current	135,638	8,225	500	72
Total cash and cash equivalents and restricted cash	3,116,437	1,708,473	2,989,494	433,435
Supplemental disclosures of cash flow information:				
Income taxes paid	(102,330)	(82,995)	(159,784)	(23,167)
Interest paid	(284,270)	(259,765)	(222,411)	(32,247)
Interest received	37,817	30,121	31,758	4,604
Supplemental disclosures of non-cash activities:				
Right-of-use assets obtained in exchange for new operating lease liabilities	479,022	2,080,748	944,148	136,889
Purchase of property and equipment through finance leases	217,190	284,007	144,455	20,944
Purchase of property and equipment included in accrued expenses and other payables	591,187	321,140	457,282	66,300
Purchase of intangible assets included in accrued expenses and other payables	3,515	3,910	4,768	691

The accompanying notes are an integral part of these consolidated financial statements

VNET GROUP, INC.
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
(Amounts in thousands of RMB and US$, except for number of shares)

	Notes	Number of ordinary shares	Treasury Stock	Ordinary shares	Additional paid-in capital	Series A perpetual convertible preferred shareholders	Accumulated other comprehensive income (loss)	Statutory reserves	Accumulated deficit	Total VNET Group, Inc. shareholders' equity	Non-controlling interest	Total shareholders' equity
Balance as of January 1, 2020		679,963,488	(349,523)	46	9,202,567	–	77,904	60,469	(4,038,390)	4,953,073	278,555	5,231,628
Consolidated net loss		–	–	–	–	–	–	–	(2,709,347)	(2,709,347)	29,088	(2,680,259)
Contribution by non-controlling interest		–	–	–	–	–	–	–	–	–	24,903	24,903
Cumulative adjustment for changes in accounting policy		–	–	–	–	–	–	–	(2,740)	(2,740)	–	(2,740)
Issuance of new shares		118,754,028	–	8	2,680,283	–	–	–	–	2,680,291	–	2,680,291
Issuance of perpetual convertible preferred shares		–	–	–	–	1,047,468	–	–	–	1,047,468	–	1,047,468
Deemed distribution to perpetual convertible preferred shares		–	–	–	470,643	–	–	–	(470,643)	–	–	–
Foreign exchange difference		–	–	–	–	–	(133,439)	–	–	(133,439)	–	(133,439)
Cancellation of shares issued in prior years		(104,304)	–	–	–	–	–	–	–	–	–	–
Conversion of convertible promissory notes		23,710,140	–	2	717,606	–	–	–	–	717,606	–	717,606
Shares repurchase		(4,363,639)	–	–	(130,650)	–	–	–	–	(130,650)	–	(130,650)
Share-based compensation	*23*	–	–	–	139,641	–	–	–	–	139,641	–	139,641
Appropriation of statutory reserves		–	–	–	–	–	–	13,993	(13,993)	–	–	–
Share options exercised	*23*	459,168	–	–	3,029	–	–	–	–	3,029	–	3,029
Restricted share units vested		2,603,430	–	–	–	–	–	–	–	–	–	–
Settlement of share options and restricted share units with shares held by depository bank		(3,062,598)	–	–	–	–	–	–	–	–	–	–
Balance as of December 31, 2020		817,959,713	(349,523)	56	13,083,119	1,047,468	(55,535)	74,462	(7,235,113)	6,564,934	332,546	6,897,480

VNET GROUP, INC.
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY (CONTINUED)

(Amounts in thousands of RMB and US$, except for number of shares)

	Notes	Number of ordinary shares	Treasury Stock	Ordinary shares	Additional paid-in capital	Series A perpetual convertible preferred shareholders	Accumulated other comprehensive loss	Statutory reserves	Accumulated deficit	Total VNET Group Inc., shareholders' equity	Non-controlling interest	Total shareholders' equity
Balance as of January 1, 2021		817,959,713	(349,523)	56	13,083,119	1,047,468	(55,535)	74,462	(7,235,113)	6,564,934	332,546	6,897,480
Consolidated net income		–	–	–	–	–	–	–	500,098	500,098	15,003	515,101
Contribution by non-controlling interest		–	–	–	–	–	–	–	–	–	11,223	11,223
Conversion of perpetual convertible preferred shares and cumulative dividend		54,507,816	–	3	1,076,208	(1,047,468)	(106)	–	(28,637)	–	–	–
Foreign exchange difference		–	–	–	–	–	(22,773)	–	–	(22,773)	–	(22,773)
Conversion of convertible promissory notes		42,401,010	–	3	1,639,803	–	–	–	–	1,639,806	–	1,639,806
Shares repurchase		(48,634,493)	–	(3)	(866,400)	–	(12,029)	–	(826,458)	(1,704,890)	–	(1,704,890)
Share-based compensation	*23*	–	–	–	264,854	–	–	–	–	264,854	–	264,854
Issuance of new shares for share option exercise and restricted share units vested	*28*	16,680,000	–	1	(1)	–	–	–	–	–	–	–
Share issued to depositary bank		7,800,000	–	–	–	–	–	–	–	–	–	–
Appropriation of dividend		–	–	–	–	–	–	–	(272)	(272)	–	(272)
Share options exercised	*23*	86,862	–	–	472	–	–	–	–	472	–	472
Restricted share units vested		5,929,122	–	–	–	–	–	–	–	–	–	–
Settlement of share options and restricted share units with shares held by depository bank		(6,015,984)	–	–	–	–	–	–	–	–	–	–
Balance as of December 31, 2021		890,714,046	(349,523)	60	15,198,055	–	(90,443)	74,462	(7,590,382)	7,242,229	358,772	7,601,001

	Notes	Number of ordinary shares	Treasury Stock	Ordinary shares	Additional paid-in capital	Accumulated other comprehensive (loss) income	Statutory reserves	Accumulated deficit	Total VNET Group, Inc. shareholders' equity	Non-controlling interest	Total shareholders' equity
Balance as of January 1, 2022		890,714,046	(349,523)	60	15,198,055	(90,443)	74,462	(7,590,382)	7,242,229	358,772	7,601,001
Consolidated net loss		–	–	–	–	–	–	(775,952)	(775,952)	13,958	(761,994)
Foreign exchange difference		–	–	–	–	101,465	–	–	101,465	–	101,465
Disposal of non-controlling interest		–	–	–	–	–	–	–	–	(487)	(487)
Share-based compensation	*23*	–	–	–	41,871	–	–	–	41,871	–	41,871
Appropriation of statutory reserves		–	–	–	–	–	3,534	(3,534)	–	–	–
Share options exercised	*23*	2,802	–	–	–	–	–	–	–	–	–
Restricted share units vested		5,666,844	–	–	–	–	–	–	–	–	–
Settlement of share options and restricted share units with shares held by depository bank		(5,669,646)	–	–	–	–	–	–	–	–	–
Balance as of December 31, 2022		890,714,046	(349,523)	60	15,239,926	11,022	77,996	(8,369,868)	6,609,613	372,243	6,981,856
Balance as of December 31, 2022 US$		890,714,046	(50,676)	9	2,209,582	1,598	11,309	(1,213,517)	958,305	53,970	1,012,275

The accompanying notes are an integral part of these consolidated financial statements

VNET GROUP, INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(Amounts in thousands of RMB and US$, unless otherwise stated)

1. ORGANIZATION

VNET Group, Inc. (the "**Company**") was incorporated under the laws of the Cayman Islands on October 16, 2009 and its principal activity is investment holding. On October 8, 2021, 21Vianet Group, Inc. changed its name to VNET Group, Inc. to promote brand awareness. The Company through its consolidated subsidiaries and variable interest entities (the "**VIEs**") are principally engaged in the provision of hosting and related services. The Company, and where appropriate, the term "**Company**" also refers to its consolidated subsidiaries and VIEs as a whole.

(a) As of December 31, 2022, the significant subsidiaries of the Company and significant consolidated variable interest entities are as follows:

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company	Principal activities
Subsidiaries:				
VNET Group Limited ("**VNET HK**")	May 25, 2007	Hong Kong	100%	Investment holding
VNET Data Center Co., Ltd. ("**VNET China**") (1)	June 12, 2000	PRC	100%	Provision of technical and consultation services and rental of long-lived assets
VNET (Foshan) Technology Co., Ltd. ("**FS Technology**") (1)	December 20, 2011	PRC	100%	Trading of network equipment, provision of technical and internet data center services
VNET Anhui Suzhou Technology Co., Ltd. ("**SZ Technology**") (1)	November 16, 2011	PRC	100%	Trading of network equipment
VNET Hangzhou Information Technology Co., Ltd. ("**HZ Technology**") (1)	March 4, 2013	PRC	100%	Provision of internet data center services
iJoy Holding Limited ("**iJoy BVI**")	April 30, 2013	British Virgin Islands	100%	Investment holding
VNET Mobile Limited ("**VNET Mobile**")	April 30, 2013	Hong Kong	100%	Investment holding and provision of telecommunication services
WiFire Group Inc. ("**WiFire Group**")	March 7, 2014	British Virgin Islands	100%	Investment holding
Joytone Infotech Co., Ltd. ("**SZ Zhuoaiyi**") (1)	April 30, 2013	PRC	100%	Provision of technical and consultation services
VNET Ventures Limited ("**Ventures**")	March 6, 2014	Hong Kong	100%	Investment holding
Abitcool (China) Broadband Inc. ("**aBitCool DG**") (1)	June 13, 2014	PRC	100%	Dormant company
Diyixian.com Limited ("**DYX**")	August 10, 2014	Hong Kong	100%	Provision of virtual private network services
VNET Zhuhai Financial Leasing Co., Ltd. ("**Zhuhai Financial Leasing**") (1)	April 9, 2015	PRC	100%	Provision of finance leasing business services
VNET DRP Investment Holdings Limited ("**DRP investment**")	January 13, 2017	Hong Kong	100%	Investment holding
Shihua DC Investment Holdings Limited ("**Shihua Investment**")	March 14, 2017	Cayman Islands	51 %	Investment holding
VNET (Xi'an) Technology Co., Ltd. ("**Xi'an Tech**") (1)	July 5, 2012	PRC	51 %	Provision of technical and internet data center services
Foshan Zhuoyi Intelligence Data Co., Ltd. ("**FS Zhuoyi**") (1)	July 7, 2016	PRC	51 %	Provision of internet data center services
Beijing Hongyuan Network Technology Co., Ltd. ("**BJ Hongyuan**") (1)	December 8, 2014	PRC	51 %	Provision of internet data center services

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company	Principal activities
Dermot Holdings Limited ("**Dermot BVI**") (3)	August 10, 2014	British Virgin Islands	100%	Investment holding
Shihua DC Investment Holdings 2 Limited ("**Shihua Holdings 2**") (4)	August 20, 2019	Cayman Islands	100%	Investment holding
Shanghai Waigaoqiao Free Trade Zone Gaogang Technology Co., Ltd. ("**Waigaoqiao Technology**") (1)/(4)	August 20, 2019	PRC	100%	Provision of internet data center services
Shanghai Edge Connect Technology Co., Ltd. ("**SH Edge Connect**") (1)	November 3, 2020	PRC	100%	Provision of technical and internet data center services
Beijing Jianghe Cloud Technology Co., Ltd. ("**BJ JHC**") (1)/(8)	November 17, 2020	PRC	100%	Provision of internet data center services
Beijing Shuntou Green Energy Data Technology Co., Ltd. ("**BJ ST**") (1)/(8)	November 17, 2020	PRC	100%	Provision of internet data center services
Jiwa Senlin (Beijing) Engineering Co., Ltd.("**Jiwa Engineering BJ**") (1)	April 8, 2021	PRC	100%	Provision of internet data center services
Beijing TenxCloud Technology Co., Ltd. ("**BJ TenxCloud**") (1)/(9)	July 15, 2021	PRC	100%	Provision of digitalization solution services
Zhongke Zijing Technology Co., Ltd. ("**Zhongke Zijing**") (1)/(10)	August 16, 2021	PRC	100%	Provision of technical and consultation services
Gu'an Junhui Network Technology Co., Ltd. ("**Gu'an Junhui**") (1)/(10)	August 16, 2021	PRC	100%	Provision of internet data center services
Beijing Jianghe Shuzhi Technology Co., Ltd. ("**BJ Jianghe Shuzhi**") (1)/(13)	August 1, 2022	PRC	100%	Provision of internet data center services
Jianghe Chuangke (Beijing) Technology Co., Ltd.("**Jianghe Chuangke**")(1)/(13)	August 1, 2022	PRC	100%	Provision of internet data center services
Beijing Jianghe Cloud Industrial Internet Technology Co., Ltd. ("**Jianghe Industrial**")(1)/(13)	August 1, 2022	PRC	100%	Provision of internet data center services
Beijing Xunneng Digital Industry Empowerment Center Co., Ltd. ("**BJ Xunneng**")(1)/(13)	August 1, 2022	PRC	100%	Provision of internet data center services
Variable Interest Entities (the "VIEs"):				
Beijing Yiyun Network Technology Co., Ltd. ("**VNET Technology**") (2)	October 22, 2002	PRC	–	Provision of internet data center services
Beijing iJoy Information Technology Co., Ltd. ("**BJ iJoy**") (2)	April 30, 2013	PRC	–	Provision of internet data center, content delivery network services
WiFire Network Technology (Beijing) Co., Ltd. ("**WiFire Network**") (2)	April 1, 2014	PRC	–	Provision of telecommunication services
Shanghai Zhiyan Yunwei Technology Co., Ltd. ("**SH Zhiyan**") (2)	December 12, 2020	PRC	–	Provision of telecommunication services
Held directly by VNET Technology:				
Beijing VNET Broad Band Data Center Co., Ltd. ("**VNET Beijing**") (2)	March 15, 2006	PRC	–	Provision of internet data center services
Shanghai Shilian Technology Co., Ltd. ("**SH Shilian**")	October 22, 2012	PRC	–	Provision of internet data center services
Held directly by VNET Beijing:				
VNET (Xi'an) Information Outsourcing Industry Park Services Co., Ltd. ("**Xi'an Sub**") (2)	June 23, 2008	PRC	–	Provision of internet data center services
Langfang Xunchi Computer Data Processing Co., Ltd. ("**LF Xunchi**") (2)	December 19, 2011	PRC	–	Dormant company
Beijing Yilong Xinda Technology Co., Ltd. ("**Yilong Xinda**") (2)	February 28, 2013	PRC	–	Provision of internet data center services

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company	Principal activities
Beijing Yichengtaihe Investment Co., Ltd. ("**BJ Yichengtaihe**") (2)	September 30, 2014	PRC	–	Provision of internet data center services
Guangzhou Lianyun Big Data Co., Ltd. ("**GZ Lianyun**") (2)	April 14, 2016	PRC	–	Provision of internet data center services
Beijing Xianghu Yunlian Technology Co., Ltd. ("**Xianghu Yunlian**") (2)	November 7, 2018	PRC	–	Provision of internet data center services
Shanghai Hujiang Songlian Technology Co., Ltd.("**Hujiang Songlian**") (2)	December 17, 2018	PRC	–	Provision of internet data center services
Beijing Shuhai Hulian Technology Co., Ltd. ("**BJ Shuhai**") (2)	January 2, 2019	PRC	–	Provision of internet data center services
Nantong Chenghong Cloud Computing Co., Ltd. ("**NT Chenghong**") (2)	December 24, 2019	PRC	–	Provision of internet data center services
Held directly by SH Shilian:				
Shanghai Shuzhong Investment Management Co., Ltd. ("**SH Shuzhong**") (2)/(5)	June 30, 2020	PRC	–	Provision of internet data center services
Sanhe Shulifang Information Technology Co., Ltd. ("**Shulifang**") (2)/(6)	July 21, 2020	PRC	–	Provision of internet data center services
Langfang Huahai Internet Technology Co., Ltd. ("**LF Huahai**") (2)/(7)	September 11, 2020	PRC	–	Provision of internet data center services
Shanghai Hesheng Data System Co., Ltd. ("**SH Hesheng**") (2)/(11)	November 11, 2021	PRC	–	Provision of internet data center services
Held directly by SH Zhiyan:				
Shanghai Blue Cloud Technology Co., Ltd. ("**SH Blue Cloud**") (2)	March 21, 2013	PRC	–	Provision of Office 365 and Windows Azure platform services
Shanghai Edge Blue Cloud Network Technology Co., Ltd. ("**SH Edge Network**") (2)/(12)	January 7,2021	PRC	–	Provision of internet data center services
Held directly by DYX and LF Xunchi:				
Shenzhen Diyixian Telecommunication Co., Ltd. ("**SZ DYX**") (1)	August 10, 2014	PRC	20%	Provision of virtual private network services

(1) Collectively, the "PRC Subsidiaries".

(2) Collectively, the "Consolidated VIEs".

(3) On August 10, 2014, the Company and its subsidiary, LF Xunchi, acquired 100% equity interest of Dermot BVI and its subsidiaries (collectively referred to as "**Dermot Entities**").

(4) On August 20, 2019, the Company through its subsidiary, DRP Investment, became the sole shareholder in Shihua Holding 2 and its subsidiaries.

(5) On June 30, 2020, the Company through its subsidiary, SH Shilian, acquired 100% equity interest of SH Shuzhong.

(6) On July 21, 2020, the Company through its subsidiary, SH Shilian, acquired 100% equity interest of Shulifang.

(7) On September 11, 2020, the Company through its subsidiaries, SH Shilian and Linkcloud PTE. Ltd. ("**Linkcloud**"), acquired 100% equity interest of LF Huahai.

(8) On November 17, 2020, the Company through its subsidiary, VNET Saturn International Investment Limited ("**VNET Saturn**") and Beijing Zhongshun Yongfeng Investment Consulting Co., Ltd. ("**YF WFOE**"), acquired 100% equity interest of BJ JHC and BJ ST.

(9) On July 15, 2021, the Company through its subsidiary, Shenzhen Cloud Native Technology Co., Ltd. ("**SZ Cloud Native**"), acquired 100% equity interest of BJ TenxCloud (Note 4).

(10) On August 16, 2021, the Company through its subsidiary, Jiwa Engineering BJ, acquired 100% equity interest of Zhongke Zijing and Gu'an Junhui (Note 4).

(11) On November 11, 2021, the Company through its subsidiary, SH Shilian, acquired 100% equity interest of SH Hesheng (Note 4).

(12) On January 7, 2021, the Company, through SH Zhiyan, established SH Edge Network for internet data center services.

(13) On August 1, 2022, the Company through its subsidiary, VNET Saturn and YF WFOE, acquired 100% equity interest of BJ Jianghe Shuzhi, Jianghe Chuangke, Jianghe Industrial and BJ Xunneng (Note 4).

(b) PRC laws and regulations prohibit foreign ownership of internet and telecommunications-related businesses. To comply with these foreign ownership restrictions, the Company conducts its businesses in the PRC through its VIEs using contractual agreements (the "**VIE Agreements**"). The Company controls four significant VIEs, namely VNET Technology, BJ iJoy, WiFire Network and SH Zhiyan as of December 31, 2022. The key terms of the VIE Agreements in relation to BJ iJoy, WiFire Network and SH Zhiyan are substantially similar to VNET Technology, except for the terms separately disclosed as below.

The equity interests of VNET Technology are legally held by certain PRC individuals, including Chen Sheng, the Executive Chairman of Board of Directors of the Company and Zhang Jun (collectively the "**Nominee Shareholders**"). The following is a summary of the key terms of the VIE Agreements of VNET Technology:

Exclusive option agreement

Pursuant to the exclusive option agreement entered into amongst VNET China and the Nominee Shareholders of VNET Technology, the Nominee Shareholders granted the Company or its designated party, an exclusive irrevocable option to purchase all or part of the equity interests held by the Nominee Shareholders in VNET Technology, when and to the extent permitted under the PRC laws, at an amount equal to RMB1. VNET Technology cannot declare any profit distributions or grant loans in any form without the prior written consent of VNET China. The Nominee Shareholders must remit in full any funds received from VNET Technology to VNET China, in the event any distributions are made by VNET Technology. The term of this agreement is 10 years, expiring on December 18, 2016, which is renewable at the sole discretion of VNET China. On December 19, 2016, this agreement was renewed for another 10 years, expiring on December 18, 2026.

SH Zhiyan has substantially similar exclusive option agreement except that the term of SH Zhiyan will terminate when SH Edge Connect, the primary beneficiary, purchases all of SH Zhiyan's equity interest held by the Nominee Shareholder, Shanghai Rongyan Yunqi Technology Co., Ltd. ("**SH Rongyan**").

Exclusive technical consulting and service agreement

Pursuant to the exclusive technical consulting and service agreement entered into between VNET China and VNET Technology, VNET China is to provide exclusive management consulting services and internet technical services in return for fees based on of a predetermined hourly rate of RMB1, which is adjustable at the sole discretion of VNET China. The term of this agreement is 10 years, expiring on December 18, 2016, which is renewable at the sole discretion of VNET China. On December 19, 2016, this agreement was renewed for another 10 years, expiring on December 18, 2026.

SH Zhiyan has substantially similar exclusive technical consulting and service agreement except that the term for SH Zhiyan would be in effect for an unlimited term unless terminated in writing by SH Edge Connect, the primary beneficiary of VIE SH Zhiyan.

Loan agreement

In January 2011, VNET China and the Nominee Shareholders entered into a loan agreement. Pursuant to the agreement, VNET China has provided interest- free loan facilities of RMB7,000 and RMB3,000, respectively, to the Nominee Shareholders of VNET Technology for the purpose of providing capital to VNET Technology to develop its data center and telecommunications value-added business and related businesses. There is no fixed term for the loan.

The Nominee Shareholders of SH Zhiyan did not enter into any loan agreement to fund the capital injected in SH Zhiyan.

Power of attorney agreement

The Nominee Shareholders entered into the power of attorney agreement whereby they granted an irrevocable proxy of the voting rights underlying their respective equity interests in VNET Technology to VNET China, which includes, but are not limited to, all the shareholders' rights and voting rights empowered to the Nominee Shareholders by the company law and VNET Technology's Articles of Association. The power of attorney remains valid and irrevocable from the date of execution, so long as each Nominee Shareholder remains as a shareholder of VNET Technology.

The power of attorney agreement in relation to VNET Technology was reassigned to VNET Group, Inc. in September 2010.

Share pledge agreement

Pursuant to the share pledge agreement entered into amongst VNET China, VNET Technology and the Nominee Shareholders, the Nominee Shareholders have contemporaneously pledged all their equity interests in VNET Technology to guarantee the repayment of the loan under the Loan Agreement between VNET China and the Nominee Shareholders. On August 10, 2015, a Notification of Cancellation of share pledge registration was issued by Beijing Administration for Industry and Commerce, Pinggu Branch to cancel the registration of the share pledge by one of the Nominee Shareholders of VNET Technology, Zhang Jun. Such cancellation does not affect the effectiveness of the share pledge agreement and does not lessen the control imposed on the contractual parties of the Company.

If VNET Technology breaches its respective contractual obligations under the Share pledge agreement and the loan agreement, VNET China, as pledgee, will be entitled to certain rights, including the right to sell the pledged equity interests. The Nominee Shareholders agreed not to transfer, sell, pledge, dispose of or otherwise create any new encumbrance on their equity interests in VNET Technology without the prior written consent of VNET China.

SH Zhiyan has substantially similar term the Nominee Shareholders of SH Zhiyan did not enter into any loan agreement to fund the capital injected in SH Zhiyan as mentioned above.

Financial support letter

Pursuant to the financial support letter, VNET Group, Inc. agreed to provide unlimited financial support to VNET Technology for its operations and agreed to forego the right to seek repayment in the event VNET Technology is unable to repay such funding.

SH Zhiyan has substantially similar term except that SH Edge Connect provides unlimited financial support to SH Zhiyan for its operations.

Despite the lack of technical majority ownership, there exists a parent-subsidiary relationship between the Company and VNET Technology through the irrevocable power of attorney agreement, whereby the Nominee Shareholders effectively assigned all of their voting rights underlying their equity interests in VNET Technology to the Company. In addition, the Company, through VNET China, obtained effective control over VNET Technology through the ability to exercise all the rights of VNET Technology's shareholders pursuant to the share pledge agreement and exclusive option agreement. The Company demonstrates its ability and intention to continue to exercise the ability to absorb substantially all of the expected losses through the financial support letter. In addition, the Company also demonstrates its ability to receive substantially all of the economic benefits of VNET Technology through VNET China through the consulting and service agreement. Thus, the Company is the primary beneficiary of VNET Technology and consolidates VNET Technology and its subsidiaries under Accounting Standards Codification ("**ASC**") Subtopic 810-10, *Consolidation: Overall* ("**ASC 810-10**"). Similar conclusion has been reached with respect to the VIE structures with the Company or the Company's subsidiaries, as the respective primary beneficiaries for other VIEs, i.e., BJ iJoy, WiFire Network and SH Zhiyan.

In the opinion of the Company's management and PRC counsel, (i) the ownership structure of the VIEs is in compliance with applicable PRC laws and regulations in any material respect, and (ii) each of the VIE Agreements is valid, legally binding and enforceable to each party of such agreements under the existing PRC laws and will not violate any PRC laws or regulations currently in effect.

However, there are substantial uncertainties regarding the interpretation and application of current and future PRC laws and regulations. Accordingly, the Company cannot be assured that PRC regulatory authorities will not ultimately take a contrary view to its opinion. If the current ownership structure of the Company and its contractual arrangements with the VIEs are found to be in violation of any existing or future PRC laws and regulations, the Company may be required to restructure its ownership structure and operations in the PRC to comply with the changing and new PRC laws and regulations. To the extent that changes and new PRC laws and regulations prohibit the Company's VIE arrangements from complying with the principles of consolidation, the Company would have to deconsolidate the financial position and results of operations of its VIEs. In the opinion of management, the likelihood of loss in respect of the Company's current ownership structure or the contractual arrangements with the VIEs is remote based on current facts and circumstances.

(c) VIE disclosures

Except for certain property with carrying amounts of RMB231,424 (US$33,553) that were pledged to secure borrowings granted to the Company (Note 14), there were no pledges or collateralization of the Consolidated VIEs' assets. Creditors of the Consolidated VIEs have no recourse to the general credit of the primary beneficiaries of the Consolidated VIEs, and such amounts have been parenthetically presented on the face of the consolidated balance sheets. The Consolidated VIEs operate the data centers and own facilities including data center buildings, leasehold improvements, fiber optic cables, computers and network equipment, which are recognized in the Company's consolidated financial statements. They also hold certain value-added technology licenses, registered copyrights, trademarks and registered domain names, including the official website, which are also considered as revenue-producing assets. However, none of such assets was recorded on the Company's consolidated balance sheets as such assets were all acquired or internally developed with insignificant cost and expensed as incurred. In addition, the Company also hires data center operation and marketing workforce for its daily operations and such costs are expensed when incurred. The Company has not provided any financial or other support that it was not previously contractually required to provide to the Consolidated VIEs during the periods presented.

The following tables represent the financial information of the Consolidated VIEs as of December 31, 2021 and 2022 and for the years ended December 31, 2020, 2021 and 2022 before eliminating the intercompany balances and transactions between the Consolidated VIEs and other entities within the Company:

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
ASSETS			
Current assets:			
Cash and cash equivalents	660,234	1,428,768	207,152
Restricted cash	317,199	301,825	43,761
Accounts receivable (net of allowance for doubtful debt of RMB82,654 and RMB100,797 (US$14,614) as of December 31, 2021 and 2022, respectively)	1,139,372	1,400,546	203,060
Prepaid expenses and other current assets	1,781,456	1,976,164	286,517
Amounts due from related parties	29,812	13,942	2,021
Total current assets	3,928,073	5,121,245	742,511

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Non-current assets:			
Property and equipment, net	6,754,511	7,495,362	1,086,725
Intangible assets, net	382,173	475,652	68,963
Land use rights, net	45,476	44,233	6,413
Operating lease right-of-use assets, net	2,666,182	3,452,533	500,570
Goodwill	308,110	332,645	48,229
Restricted cash	7,825	–	–
Deferred tax assets, net	136,903	153,676	22,281
Other non-current assets	612,198	165,570	24,005
Long-term investments, net	133,280	82,744	11,997
Total non-current assets	11,046,658	12,202,415	1,769,183
Total assets	14,974,731	17,323,660	2,511,694
Current liabilities:			
Accounts payable and notes payable	352,478	483,030	70,033
Accrued expenses and other payables	1,342,886	1,488,031	215,742
Advance from customers	1,041,902	1,157,963	167,889
Deferred revenue	49,055	84,775	12,291
Income tax payable	20,972	25,188	3,652
Amounts due to inter-companies, net (1)	5,203,974	6,071,651	880,307
Amounts due to related parties	8,007	6,928	1,004
Current portion of finance lease liabilities	200,961	165,221	23,955
Current portion of long-term borrowings	350,609	417,442	60,523
Current portion of deferred government grant	2,074	3,646	529
Current portion of operating lease liabilities	579,391	655,663	95,062
Total current liabilities	9,152,309	10,559,538	1,530,987
Non-current liabilities:			
Amounts due to inter-companies, net (1)	1,020,972	1,020,972	148,027
Long-term borrowings	1,480,709	1,861,545	269,899
Non-current portion of finance lease liabilities	704,255	615,309	89,211
Unrecognized tax benefits	77,192	86,799	12,585
Deferred tax liabilities	132,370	149,475	21,672
Non-current portion of deferred government grant	2,294	2,726	395
Non-current portion of operating lease liabilities	2,114,309	2,872,323	416,448
Total non-current liabilities	5,532,101	6,609,149	958,237
Total liabilities	14,684,410	17,168,687	2,489,224

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
Net revenues	3,885,141	5,145,110	5,944,519	861,874
Net profit (loss)	73,748	92,594	(66,764)	(9,680)

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
Net cash generated from operating activities	748,418	866,712	1,351,179	195,902
Net cash used in investing activities	(1,943,358)	(2,695,707)	(1,849,339)	(268,129)
Net cash generated from financing activities	1,302,082	1,788,528	1,243,495	180,290
Net increase (decrease) in cash and cash equivalents and restricted cash	107,142	(40,467)	745,335	108,063

(1) Amounts due to inter-companies consist of intercompany payables to the other companies within the Company for the purchase of telecommunication resources and property and equipment on behalf of the Consolidated VIEs.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) Basis of presentation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("**U.S. GAAP**") assuming the Company will continue as a going concern.

The Company has incurred losses since its inception. As of December 31, 2022, the Company had an accumulated deficit of RMB8.4 billion. In addition, holders of the 2026 Convertible Notes (with a principal amount of US$600 million) have the right to require the Company to repurchase for cash all of the 2026 Convertible Notes, or any portion of the principal thereof, on February 1, 2024. Absent any other action, the Company likely will require additional liquidity to continue its operations over the next 12 months.

With the Company's unused loan facilities with banks and financial institutions, strategy to obtain financing from the issuance of equity shares, bonds and convertible notes, and control of operating expenses and capital expenditure where necessary, the Company has the ability to manage the liquidity needs to enable continuation of operations for the foreseeable future.

(b) Principles of consolidation

The consolidated financial statements include the financial statements of the Company, its subsidiaries and the Consolidated VIEs for which the Company or a subsidiary of the Company is the primary beneficiary. All significant inter-company transactions and balances between the Company, its subsidiaries and the Consolidated VIEs are eliminated upon consolidation. Results of acquired subsidiaries and its Consolidated VIEs are consolidated from the date on which control is transferred to the Company.

(c) Use of estimates

The preparation of the consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the period. Significant estimates and assumptions reflected in the Company's financial statements include, but are not limited to, determining the valuation allowance for deferred tax assets, the fair value of convertible promissory notes, the fair value of assets acquired and liabilities assumed in acquisitions, the recoverability of long-lived assets and goodwill, and incremental borrowing rate of leases.

Changes in facts and circumstances may result in revised estimates. Actual results could differ from those estimates, and as such, differences may be material to the consolidated financial statements.

(d) Foreign currency

The functional currency of the Company and its overseas subsidiaries is the United States dollar ("**US$**"), whereas the functional currency of the Company's PRC subsidiaries and its Consolidated VIEs is the Chinese Renminbi ("**RMB**") as determined based on the criteria of ASC Topic 830, *Foreign Currency Matters* ("**ASC 830**"). The Company uses the RMB as its reporting currency.

The financial statements of the Company and its overseas subsidiaries are translated from the functional currency to the reporting currency, RMB. Transactions denominated in foreign currencies are re-measured into the functional currency at the exchange rates prevailing on the transaction dates. Monetary assets and liabilities denominated in foreign currencies are re-measured at the exchange rates prevailing at the balance sheet date. Non-monetary items that are measured in terms of historical costs in foreign currency are re-measured using the exchange rates at the dates of the initial transactions. Exchange gains and losses are included in the consolidated statements of operations.

The Company uses the average exchange rate for the year and the exchange rate at the balance sheet date to translate the operating results and financial position, respectively. Translation differences are recorded in other comprehensive loss within the statements of comprehensive (loss) income.

(e) Convenience translation

Amounts in US$ are presented for the convenience of the reader and are translated at the noon buying rate of US$1.00 to RMB6.8972 on December 30, 2022, the last business day in fiscal year 2022, representing the noon buying rate set forth in the H.10 statistical release of the U.S. Federal Reserve Board. No representation is made that the RMB amounts could have been, or could be converted, realized or settled into US$ at such rate or at any other rate.

(f) Cash and cash equivalents

Cash and cash equivalents consist of cash on hand and demand deposits placed with banks which are unrestricted as to withdrawal and use and have original maturities less than three months. All highly liquid investments with a stated maturity of 90 days or less from the date of purchase are classified as cash equivalents.

(g) Restricted cash

Restricted cash mainly represents amounts held by a few banks in escrow as security for credit facilities, the deposits for finance lease, the deposits for a lawsuit with a third party, the deposits held in escrow for the advances received from end customers subscribing Microsoft 365 and Windows Azure services (the disbursement of which shall be agreed by both Microsoft (China) Co., Ltd. ("**Microsoft**") and the Company), the deposits for business operation, the deposits for loans.

(h) Short-term investments

All highly liquid investments with original maturities of greater than three months but less than twelve months, are classified as short-term investments.

(i) Accounts receivable and allowance for doubtful debt

On January 1, 2020, the Company adopted ASC326, *Financial Instruments-Credit Losses* ("**ASC326**"), using modified-retrospective transition approach. Following the adoption of this guidance, a cumulative-effect adjustment in accumulated deficit of RMB2,740 was recognized as of January 1, 2020. For the years ended December 31, 2020, 2021 and 2022, the Company recorded credit losses of RMB2,393, RMB18,399 and RMB35,409 (US$5,134), respectively.

Pursuant to ASC 326, an allowance for credit losses for financial assets, including accounts receivable, carried at amortized cost to present the net amount expected to be collected as of the balance sheet date. Such allowance is based on credit losses expected to arise over the life of the asset's contractual term, which includes consideration of prepayments. Assets are written off when the Company determines that such financial assets are deemed uncollectible and are recognized as a deduction from the allowance for credit losses. Expected recoveries of amounts previously written off, not to exceed the aggregate of the amount previously written off, are included in determining the necessary reserve at the balance sheet date. The Company pools financial assets based on similar risk characteristics to estimate expected credit losses. The Company estimates expected credit losses on financial assets individually when those assets do not share similar risk characteristics. The Company closely monitors its accounts receivable including timely account reconciliations, detailed reviews of past due accounts, updated credit limits, and monthly analysis of the adequacy of their reserve for credit losses.

The Company utilizes a loss rate approach to determine lifetime expected credit losses for its financial assets. This method is used for calculating an estimate of losses based primarily on the Company's historical loss experience. In determining loss rates, the Company evaluates information related to historical losses, adjusted for current conditions and further adjusted for the period of time that the Company can reasonably forecast. The Company has concluded that it can reasonably support a forecast period for the contractual life of its financial assets. Qualitative and quantitative adjustments related to current conditions and the reasonable and supportable forecast period consider the following: the customer or vendor 's creditworthiness, changes in the policy and procedures to establish customer credit limits, changes in the payment terms of receivables, existence and effect of any concentration of credit and changes in the level of such concentrations, and the effects of other external forces such as the current and forecasted direction of the economic and business environment.

(j) Property and equipment

Property and equipment are stated at cost less accumulated depreciation and any recorded impairment. Property and equipment acquired in a business combination are recognized initially at fair value at the data of acquisition. Property and equipment are depreciated using the straight-line method over the estimated useful lives of the assets, as follows:

Category	Estimated useful life
Property	25-46 years
Leasehold improvements	Over the shorter of lease term or the estimated useful lives of the assets
Optical fibers	10-20 years
Computer and network equipment	1-10 years
Office equipment	2-8 years
Motor vehicles	2-8 years

Repair and maintenance costs are charged to expense as incurred, whereas the costs of betterments that extend the useful life of property and equipment are capitalized as additions to the related assets. Retirements, sale and disposals of assets are recorded by removing the cost and accumulated depreciation with any resulting gain or loss reflected in the consolidated statements of operations.

Property and equipment that are purchased or constructed which require a period of time before the assets are ready for their intended use are accounted for as construction-in-progress. Construction-in-progress is recorded at acquisition cost, including installation costs. Construction-in-progress is transferred to specific property and equipment accounts and commences depreciation when these assets are ready for their intended use.

(k) Intangible assets

Intangible assets are carried at cost less accumulated amortization and any recorded impairment. Intangible assets acquired in a business combination are recognized initially at fair value at the date of acquisition. Intangible assets with finite useful lives are amortized using a straight-line method. These amortization methods reflect the estimated pattern in which the economic benefits of the respective intangible assets are to be consumed.

The Company has capitalized certain internal use software development costs in accordance with ASC Subtopic 350-40, *Intangibles-Goodwill and Other: Internal-Use Software* ("**ASC 350-40**"), amounting to RMB8,684, RMB11,422, and RMB15,322 (US$2,221) for the years ended December 31, 2020, 2021 and 2022, respectively. The Company capitalizes certain costs relating to software acquired, developed, or modified solely to meet the Company's internal requirements and for which there are no substantive plans to market the software. These costs mainly include the research staff costs directly associated with the internal-develop software projects during the application development stage. Capitalized internal-use software costs are included in "intangible assets, net".

Intangible assets have weighted average useful lives from the date of purchase/ acquisition as follows:

Purchased software	5.5 years
Radio spectrum license	15 years
Operating permits*	31.1 years
Customer relationships*	8.3 years
Licenses*	15 years
Supplier relationships*	10 years
Trade names*	20 years
Technology platform*	5 years
Non-complete agreements*	5 years
Internal use software	3.5 years
Customer contract*	7.8 years

* Acquired in the acquisitions of subsidiaries.

(l) Leases

The Company determines if an arrangement is a lease at inception. Leases are classified as operating or finance leases in accordance with the recognition criteria in ASC 842-20-25. The Company's leases do not contain any material residual value guarantees or material restrictive covenants.

The Company has lease agreements with lease and non-lease components, which are accounted for separately. The Company elected the short-term lease exemption for all contracts with lease term of 12 months or less.

At the commencement date of a lease, the Company determines the classification of the lease based on the relevant factors present and records a right-of-use ("**ROU**") asset and lease liability for operating lease, and records property and equipment and finance lease liability for finance lease. ROU assets and property and equipment acquired through lease represent the right to use an underlying asset for the lease term, and operating lease liabilities and finance lease liabilities represent the obligation to make lease payments arising from the lease. ROU assets and lease liabilities are calculated as the present value of the lease payments not yet paid. If the rate implicit in the Company's leases is not readily available, the Company uses an incremental borrowing rate based on the information available at the lease commencement date in determining the present value of lease payments. This incremental borrowing rate reflects the fixed rate at which the Company could borrow on a collateralized basis the amount of the lease payments in the same currency, for a similar term, in a similar economic environment. ROU assets include any lease prepayments and are reduced by lease incentives. Operating lease expense for lease payments is recognized on a straight-line basis over the lease term. Lease terms are based on the non-cancelable term of the lease and may contain options to extend the lease when it is reasonably certain that the Company will exercise that option.

Leases with an initial lease term of 12 months or less are not recorded on the consolidated balance sheets. Lease expense for these leases is recognized on a straight-line basis over the lease term.

(m) Land use right

The land use rights represent the operating lease prepayments for the rights to use the land in the PRC under ASC 842. Amortization of the prepayments is provided on a straight-line basis over the terms of the respective land use rights certificates.

(n) Long-term investments

The Company's long-term investments primarily consist of equity investments without readily determinable fair value, equity method investments.

Pursuant to ASC Topic 321, *Investments – Equity Securities* ("**ASC 321**"), equity investments, except for those accounted for under the equity method and those that result in consolidation of the investee and certain other investments, are measured at fair value, and any changes in fair value are recognized in earnings. For equity securities without readily determinable fair value and do not qualify for the existing practical expedient in ASC Topic 820, *Fair Value Measurements and Disclosures* ("**ASC 820**"), to estimate fair value using the net asset value per share (or its equivalent) of the investment, the Company elected to use the measurement alternative to measure those investments at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer, if any. Equity securities with readily determinable fair value are measured at fair values, and any changes in fair value are recognized in earnings.

For equity investments measured at fair value with changes in fair value recorded in earnings, the Company does not assess whether those securities are impaired. For those equity investments that the Company elects to use the measurement alternative, the Company makes a qualitative assessment of whether the investment is impaired at each reporting date. If a qualitative assessment indicates that the investment is impaired, the entity has to estimate the investment's fair value in accordance with the principles of ASC 820. If the fair value is less than the investment's carrying value, the entity has to recognize an impairment loss in net loss equal to the difference between the carrying value and fair value.

Investments in equity investees represent investments in entities in which the Company can exercise significant influence but does not own a majority equity interest or control are accounted for using the equity method of accounting in accordance with ASC Subtopic 323-10, *Investments-Equity Method and Joint Ventures: Overall* ("**ASC 323-10**"). The Company applies the equity method of accounting that is consistent with ASC 323-10 in limited partnerships in which the Company holds a three percent or greater interest. Under the equity method, the Company initially records its investment at cost and prospectively recognizes its proportionate share of each equity investee's net profit or loss into its consolidated statements of operations. The difference between the cost of the equity investee and the amount of the underlying equity in the net assets of the equity investee is recognized as equity method goodwill included in equity method investments on the consolidated balance sheets. The Company evaluates its equity method investments for impairment under ASC 323-10. An impairment loss on the equity method investments is recognized in the consolidated statements of operations when the decline in value is determined to be other-than-temporary.

(o) Goodwill

Goodwill represents the excess of the purchase price over the amounts assigned to the fair value of the assets acquired and the liabilities assumed of an acquired business. The Company assesses goodwill for impairment in accordance with ASC Subtopic 350-20, *Intangibles – Goodwill and Other: Goodwill* ("**ASC 350-20**"), which requires that goodwill to be tested for impairment at the reporting unit level at least annually and more frequently upon the occurrence of certain events, as defined by ASC 350-20.

The Company has the option to assess qualitative factors first to determine whether it is necessary to perform the quantitative test in accordance with ASC 350-20. In the qualitative assessment, the Company considers primary factors such as industry and market considerations, overall financial performance of the reporting unit, and other specific information related to the operations. If the Company believes, as a result of the qualitative assessment, that it is more-likely-than-not that the fair value of the reporting unit is less than its carrying amount, the quantitative impairment test described above is required. Otherwise, no further testing is required. The quantitative impairment test compares the fair value of the reporting unit with its carrying amount, including goodwill. If the carrying amount of a reporting unit exceeds its fair value, an impairment loss shall be recognized in an amount equal to that excess.

Pursuant to ASC 350-20, the Company performed assessment and completed its annual impairment test for goodwill that has arisen out of its acquisitions. No impairment loss of goodwill was recognized for the years ended December 31, 2020, 2021 and 2022.

(p) Impairment of long-lived assets

The Company evaluates long-lived assets, such as fixed assets and purchased or internally developed intangible assets with finite lives for impairment whenever events or changes in circumstances indicate the carrying value of an asset may not be recoverable in accordance with ASC Topic 360, *Property, Plant and Equipment*. When such events occur, the Company assesses the recoverability of the asset group based on the undiscounted future cash flows the asset group is expected to generate and recognizes an impairment loss when estimated undiscounted future cash flows expected to result from the use of the asset group plus net proceeds expected from disposition of the asset group, if any, is less than the carrying value of the asset group. If the Company identifies an impairment, the Company reduces the carrying amount of the asset group to its estimated fair value based on a discounted cash flow approach or, when available and appropriate, to comparable market values and the impairment loss, if any, is recognized in the consolidated statements of operations.

As of December 31, 2020 and 2021, due to continuing losses and physical condition changed, the Company recorded the long-lived assets impairment amounting to RMB81,619 and RMB109,267 for relative asset groups, respectively, resulting from excess of the carrying amount of the asset group over the fair value of the asset group. The Company determined the fair value of the asset group using the income approach based on the discounted cash flows associated with the asset group. No impairment was recognized for the year ended December 31, 2022 as there was no impairment indicator identified.

The impairment loss reduced the carrying amount of the long-lived assets of the group on a pro-rata basis using the relative carrying amount of those assets except that the loss allocated to an individual long-lived asset of the group shall not reduce the carrying amount of that asset below its fair value whenever that fair value is determinable without undue cost and effort.

The Company recorded impairment charges associated with its long-lived assets and acquired intangibles as follows:

	For the years ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Impairment of property and equipment	35,793	106,311	–	–
Impairment of intangible assets	38,654	–	–	–
Impairment of other non-current assets	7,172	2,956	–	–

(q) Fair value of financial instruments

The Company's financial instruments primarily include cash and cash equivalents, restricted cash, accounts receivable and payable, other receivables and payables, amounts due from/to related parties, long-term borrowings, available-for-sale debt investments and convertible promissory notes. Other than long- term borrowings and convertible promissory notes, the carrying values of these financial instruments approximate their fair values due to their short-term maturities.

The carrying amounts of long-term borrowings approximate their fair values since they bear interest rates which approximate market interest rates. The Company elected the fair value option for the 2025 Convertible Notes (Note 19) upon initial recognition as financial liability as the fair value better represents the value of the underlying liabilities. The purchase consideration and contingent purchase considerations in both cash and shares are initially measured at fair value on the acquisition dates of the acquired businesses and the date of grant, respectively, and subsequently remeasured at the end of each reporting period with an adjustment for fair value recorded to the current period income/(expense). The Company recorded the 2026 Convertible Notes (Note 19) and 2027 Convertible Notes (Note 19) using amortized cost method on its consolidated balance sheets and measures the fair value for disclosure purposes only. See Note 29 for disclosure of fair value measurements.

(r) Revenue recognition

The Company provides hosting and related services including hosting of customers' servers and networking equipment, connecting customers' servers with internet backbones ("**Hosting service**"), virtual private network services providing encrypted secured connection to public internet ("**VPN service**") and other value-added services and public cloud service through strategic partnership with Microsoft.

The Company recognizes revenue as it satisfies a performance obligation when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of ASC Topic 606, *Revenue from Contracts with Customers* ("**ASC 606**"), the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price, including variable consideration, if any; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect the consideration to which it is entitled in exchange for the goods or services it transfers to the customer.

Once a contract is determined to be within the scope of ASC 606 at contract inception, the Company reviews the contract to determine which performance obligations it must deliver and which of these performance obligations are distinct. The Company recognizes revenue based on the amount of the transaction price that is allocated to each performance obligation when that performance obligation is satisfied or as it is satisfied.

The Company is a principal and records revenue on a gross basis when the Company is primarily responsible for fulfilling the service, has discretion in establishing pricing and controls the promised service before transferring that service to customers. Otherwise, the Company records revenue at the net amounts as commissions.

The Company's revenue recognition policies are as follows:

Hosting services are services that the Company dedicates data center space to house customers' servers and networking equipment and provides tailored server administration services including operating system support and assistance with updates, server monitoring, server backup and restoration, server security evaluation, firewall services, and disaster recovery. The Company also provides interconnectivity services to connect customers with each other, internet backbones in China and other networks through Border Gateway Protocol, or BGP, network, or single-line, dual-line or multiple-line networks. Through the acquisition of BJ TenxCloud in 2021, the Company also provides digitalization solution services based on in-house developed cloud native platform to customers as an expanded value-added service of its Hosting services. Hosting services are typically provided to customers for a fixed amount over the contract service period and the related revenues are recognized on a straight-line basis over the term of the contract. For certain contracts where considerations are based on the usage of the Hosting services, the related revenues are recognized based on the consumption at the predetermined rate as the services are rendered throughout the contract term. For the digitalization solution services provided from 2021, the Company primarily fulfills its performance obligation by delivering the customized cloud native platform and the revenue is recognized at the point in time when the platform is accepted by the customer.

VPN services are services that the Company extends customers' private networks by setting up secure and dedicated connections through the public internet. VPN services are provided to customers for a fixed amount over the contract service period and revenue are recognized on a straight-line basis over the term of the contract.

The Company partners with Microsoft to provide Cloud services that allow enterprise and individual customers to run their applications over the internet using the IT infrastructure. Cloud services are generally charged by the Company to the end customers for a fixed amount or based on the actual usage of the cloud resources at predetermined rates over the subscription period, which in general is one year. The Company fulfils its performance obligation of facilitating Microsoft to provide the Cloud services to the end customers by providing, but not limited to, contract processing management, billing, payment collection, maintenance, help desk supports and certain IT infrastructure services. These are considered as a series of distinct services that are substantially the same and have the same pattern of transfer to the customer; therefore, they are accounted for as a single performance obligation that is satisfied over time. The corresponding consideration that the Company is entitled to is recognized as revenue using a time-based method since this best depicts the pattern of the control transfer. Revenue from Cloud services consists of monthly incentive revenues received from Microsoft upon completion of certain conditions and gross billing amount received from end customers net of considerations remitted by the Company to Microsoft. When the contract is modified to add distinct services to the single performance obligation for additional fees, such changes are accounted for prospectively as a termination of the old contract and the creation of a new contract.

For certain arrangements, customers are required to pay the Company before the services are delivered. When either party to a revenue contract has performed, the Company recognizes a contract asset or a contract liability in the consolidated balance sheets, depending on the relationship between the Company's performance and the customer's payment. Contract liabilities were mainly related to fee received for Hosting services to be provided over the contract period, which were presented as deferred revenue on the consolidated balance sheets.

Deferred revenue represented the Company's obligation to transfer the goods or services to a customer for which the Company has received consideration (or an amount of consideration is due) from the customer. As of December 31, 2021 and 2022, the Company has deferred revenue amounting up to RMB55,695 and RMB95,078 (US$13,785), respectively. Revenue recognized from opening deferred revenue balance was RMB39,374 (US$5,709) for the year ended December 31, 2022.

The Company's certain Hosting service contains lease and non-lease components. The Company elected to adopt the practical expedient which allows lessors to combine lease and non-lease components and account for them as one component if 1) the timing and pattern of transfer of the lease component and non-lease component is the same; 2) the lease component should be classified as an operating lease if it were accounted for separately. The combined component is accounted for in accordance with the current lease accounting guidance ("**ASC 842**") if the lease component is predominant, and in accordance with the ASC 606 if the non-lease component is predominant. The Company has determined that the non-lease component is the predominant component in Hosting service. Therefore, the Company has accounted for the combined component in accordance with ASC 606.

The Company does not disclose the value of unsatisfied performance obligations as the Company's revenue contracts are (i) contracts with an original expected length of one year or less or (ii) contracts for which the Company recognizes revenue at the amount to which it has the right to invoice for services performed.

(s) Cost of revenues

Cost of revenues consists primarily of telecommunication costs, depreciation of the Company's long-lived assets, amortization of acquired intangible assets, maintenance, data center rental expenses directly attributable to the provision of the IDC services, payroll and other related costs of operations.

(t) Advertising expenditures

Advertising expenditures are expensed as incurred and are included in sales and marketing expenses, which amounted to RMB7,779, RMB7,272 and RMB6,829 (US$990) for the years ended December 31, 2020, 2021 and 2022, respectively.

(u) Research and development expenses

Research and development expenses consist primarily of payroll and related personnel costs for routine upgrades and related enhancements of the Company's services and network. Research and development expenses are expensed as incurred except for costs to develop internal-use software or add significant upgrades and enhancements resulting in additional functionality to internal-use software that meet the capitalization criteria in accordance with ASC Subtopic 350-40, *Intangibles-Goodwill and Other, Internal-Use Software.*

(v) Government grants

Government grants are provided by the relevant PRC municipal government authorities to subsidize the cost of certain research and development projects. The amount of such government grants is determined solely at the discretion of the relevant government authorities and there is no assurance that the Company will continue to receive these government grants in the future. Government grants are recognized when it is probable that the Company will comply with the conditions attached to them, and the grants are received. When the grant relates to an expense item, it is recognized in the consolidated statement of operations over the period necessary to match the grant on a systematic basis to the costs that it is intended to compensate, as a reduction of the related operating expense. When the grant relates to an asset, it is recognized as deferred government grants and released to the consolidated statement of operations in equal amounts over the expected useful life of the related asset, when operational, as a reduction of the related depreciation expense.

(w) Capitalized interest

Interest costs are capitalized if they are incurred during the acquisition, construction or production of a qualifying asset and such costs could have been avoided if expenditures for these assets have not been made.

As a result of total interest costs capitalized during the period, the interest expense for the years ended December 31, 2020, 2021 and 2022, was as follows:

	For the years ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Interest expense and amortization cost of bonds payable	223,785	133,959	–	–
Interest expense and amortization cost of 2025, 2026 and 2027 Convertible Notes *(Note 19)*	18,880	25,919	58,350	8,460
Interest expense on bank and other borrowings	39,424	103,925	172,328	24,986
Interest expense on finance leases	130,196	124,567	104,088	15,091
Total interest costs	412,285	388,370	334,766	48,537
Less: Total interest costs capitalized	(31,676)	(53,420)	(61,461)	(8,911)
Interest expense, net	380,609	334,950	273,305	39,626

(x) Income taxes

The Company accounts for income taxes using the liability method. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial reporting and tax bases of assets and liabilities using enacted tax rates that will be in effect in the period in which the differences are expected to reverse. The carrying amount of deferred tax assets is reviewed on an entity-by-entity basis and is reduced by a valuation allowance to the extent that it is more-likely-than-not that the benefits of the deferred tax assets will not be realized in future years. The valuation allowance is determined based on the weight of positive and negative evidence including future reversals of existing taxable temporary differences, future taxable income exclusive of reversing temporary differences, and verifiable tax planning. The estimated future taxable income involves significant assumptions of forecasted revenue growth that take into consideration of the Company's historical financial results, its plan of expanding operating capacity as well as current industry trends. The effect on deferred taxes of a change in tax rates is recognized in income in the period that includes the enactment date of the change in tax rate. All deferred income tax assets and liabilities are classified as non-current on the consolidated balance sheets.

The Company applies ASC Topic 740, *Accounting for Income Taxes* ("**ASC 740**"), to account for uncertainty in income taxes. ASC 740 prescribes a recognition threshold a tax position is required to meet before being recognized in the financial statements.

The Company has elected to classify interest and penalties related to unrecognized tax benefits, if and when required, as part of "income tax expenses" in the consolidated statements of operations.

(y) Share-based compensation

Share options and Restricted Share Units ("**RSUs**") granted to employees are accounted for under ASC Topic 718, *Compensation – Stock Compensation* ("**ASC 718**"), which requires that share-based awards granted to employees be measured based on the grant date fair value and recognized as compensation expenses over the requisite service period and/or performance period (which is generally the vesting period) in the consolidated statements of operations. The Company accounts for forfeitures as they occur.

The Company has elected to recognize compensation expenses using the straight-line method for share-based awards granted with service conditions that have a graded vesting schedule. For share-based awards granted with performance conditions, the Company recognizes compensation expenses using the accelerated method. The Company commences recognition of the related compensation expenses if it is probable that the defined performance condition will be met. To the extent that the Company determines that it is probable that a different number of share-based awards will vest depending on the outcome of the performance condition, the cumulative effect of the change in estimate is recognized in the period of change. For share-based awards with market conditions, the probability to achieve market conditions is reflected in the grant date fair value. The Company recognized the related compensation expenses when the requisite service is rendered using the accelerate method.

On November 26, 2016, the Board approved a new incentive program to certain individuals with a new bonus scheme which will be settled by issuing a variable number of shares with a fair value equal to fixed dollar amount on the settlement date. The Company remeasures the fair value of such liability at each reporting period end through earnings until the actual settlement date, which is the date when the number of underlying shares were fixed and recorded the compensation cost over the remaining vesting term.

A cancellation of the terms or conditions of an equity award under original award in exchange for a new award should be treated as modification. The compensation costs associated with the modified awards are recognized if either the original vesting conditions or the new vesting conditions have been achieved. Total recognized compensation cost for the awards is at least equal to the fair value of the original awards at the grant date unless at the date of the modification the performance or service conditions of the original awards are not expected to be satisfied. The incremental compensation cost is measured as the excess of the fair value of the replacement awards over the fair value of original awards at the modification date. Therefore, in relation to the modified awards, the Company recognizes share-based compensation over the vesting periods of the new awards, which comprises (i) the amortization of the incremental portion of share-based compensation over the remaining vesting term, and (ii) any unrecognized compensation cost of original awards, using either the original term or the new term, whichever results in higher expenses for each reporting period. For a modification of a market condition, the incremental portion of share-based compensation and unrecognized compensation cost of original award are recognized over new vesting period. For modification of a liability award that remains a liability after modification, the liability award continues to be remeasured at fair value at each reporting date.

(z) (Loss) Earnings per share

In accordance with ASC Topic 260, *Earnings per Share* ("**ASC 260**"), basic (loss) earnings per share is computed by dividing net (loss) earnings attributable to ordinary shareholders by the weighted average number of unrestricted ordinary shares outstanding during the year using two-class method. Under the two-class method, net (loss) earnings is allocated between ordinary shares and participating securities based on their participating rights. The Company's series A preferred shares (Note 18) are participating securities. Diluted loss per share is calculated by dividing net loss attributable to ordinary shareholders using two-class method as adjusted for the effect of dilutive ordinary equivalent shares, if any, by the weighted average number of ordinary and dilutive ordinary equivalent shares outstanding during the period. Contingently issuable shares, including performance-based share awards and contingent considerations to be settled in shares, are included in the computation of basic (loss) earnings per share only when there is no circumstance under which those shares would not be issued. Contingently issuable shares are included in the denominator of the diluted loss per share calculation as of the beginning of the period or as of the inception date of the contingent share arrangement, if later, only when dilutive and when all the necessary conditions have been satisfied as of the reporting period end. For contracts that may be settled in ordinary shares or in cash at the election of the Company, share settlement is presumed, pursuant to which incremental shares relating to the number of shares that would be required to settle the contract are included in the denominator of diluted loss per share calculation if the effect is more dilutive. Ordinary equivalent shares consist of the ordinary shares issuable upon the exercise of the share options, using the treasury stock method and shares issuable upon the conversion of the company's series A preferred shares and convertible promissory notes using if converted method. Ordinary share equivalents are excluded from the computation of diluted loss per share if their effects would be anti-dilutive.

(aa) Share repurchase program

Pursuant to the Board of Directors' resolutions on December 2, 2019, the Company's management is authorized to repurchase, in one or more tranches, up to an aggregate of US$20,000 of its own outstanding shares (including shares represented by ADSs) (each such transaction a "**Repurchase**") over a period of 13 months ended on December 31, 2020.

The Company accounted for the repurchased shares as Treasury Stock at cost in accordance to ASC Subtopic 505-30, *Treasury Stock* ("**ASC 505-30**"), and the share repurchase is shown separately in the consolidated statement of shareholder's equity, as the Company has not yet decided on the ultimate disposition of those ADSs acquired. When the Company decides to retire the treasury stock, the difference between the original issuance price and the repurchase price is debited into accumulated deficit.

(bb) Comprehensive (loss) income

Comprehensive (loss) income is defined as the (decrease) increase in equity of the Company during a period from transactions and other events and circumstances excluding transactions resulting from investments by owners and distributions to owners. Accumulated other comprehensive loss of the Company includes only foreign currency translation adjustments related to the Company and its overseas subsidiaries, whose functional currency is US$.

(cc) Segment reporting

In accordance with ASC Topic 280, *Segment Reporting* ("**ASC 280**"), the Company had one reportable segment since the Company's chief executive officer, who has been identified as the Company's chief operating decision-maker ("**CODM**") formerly relied on the results of operations of hosting and related services when making decisions on allocating resources and assessing performance of the Company, and the CODM reviews the operation result of the Company as a whole. Hosting and related services business focuses primarily on colocation, interconnectivity, cloud, VPN, hybrid IT and other value-added services.

As substantially all of the Company's long-lived assets and revenues are located in and derived from the PRC, geographical segments are not presented.

(dd) Employee benefits

The full-time employees of the Company's PRC subsidiaries are entitled to staff welfare benefits including medical care, housing fund, pension benefits and unemployment insurance, which are governmental mandated defined contribution plans. These entities are required to accrue for these benefits based on certain percentages of the employees' respective salaries, subject to certain ceilings, in accordance with the relevant PRC regulations, and make cash contributions to the state-sponsored plans out of the amounts accrued.

(ee) Recent accounting pronouncements

In November 2021, the FASB issued ASU 2021-10, Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance, which aims to provide increased transparency by requiring business entities to disclose information about certain types of government assistance they receive in the notes to the financial statements. ASU 2021-10 also adds a new Topic-ASC 832, Government Assistance-to the FASB's Codification. The ASU improves financial reporting by requiring disclosures that increase the transparency of transactions with a government accounted for by applying a grant or contribution accounting model by analogy, including (1) the types of transactions, (2) the accounting for those transactions, and (3) the effect of those transactions on an entity's financial statements. The new standard is effective for all entities for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2021. Early adoption is permitted. The Company adopted this ASU from January 1, 2022 with no material impact on its consolidated financial statements.

In October 2021, the FASB issued ASU 2021-08, Business Combinations (Topic 805) and require acquiring entities to apply Topic 606 to recognize and measure contract assets and contract liabilities in a business combination. The amendments apply to all entities that enter into a business combination within the scope of Subtopic 805-10, *Business Combinations – Overall*. The amendments are effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years and it should be applied prospectively to business combinations occurring on or after the effective date of the amendments. The Company does not expect the adoption of ASU No. 2021-08 to have a material effect on its consolidated financial statements.

3. CONCENTRATION OF RISKS

(a) Credit risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash and cash equivalents, accounts receivable, other receivables and amounts due from related parties. As of December 31, 2021 and 2022, the aggregate amount of cash and cash equivalents and restricted cash of RMB1,410,271 and RMB2,677,823 (US$388,248), respectively, were held at major financial institutions located in the PRC, and US$46,794 and US$45,187 (RMB311,671), respectively, were deposited with major financial institutions located outside the PRC. Management believes that these financial institutions are of high credit quality and continually monitors the credit worthiness of these financial institutions. Historically, deposits in Chinese banks are secure due to the state policy on protecting depositors' interests. However, China promulgated a new Bankruptcy Law in August 2006 that came into effect on June 1, 2007, which contains a separate article expressly stating that the State Council may promulgate implementation measures for the bankruptcy of Chinese banks based on the Bankruptcy Law. Under the new Bankruptcy Law, a Chinese bank may go into bankruptcy. In addition, since China's concession to the World Trade Organization, foreign banks have been gradually permitted to operate in China and have been significant competitors against Chinese banks in many aspects, especially since the opening of the Renminbi business to foreign banks in late 2006. Therefore, the risk of bankruptcy of those Chinese banks in which the Company has deposits has increased. In the event of bankruptcy of one of the banks which holds the Company's deposits, the Company is unlikely to claim its deposits back in full since the bank is unlikely to be classified as a secured creditor based on PRC laws.

(b) Business, supplier, customer, and economic risk

The Company participates in a relatively dynamic and competitive industry that is heavily reliant operation excellence of the services. The Company believes that changes in any of the following areas could have a material adverse effect on the Company's future financial position, result of operations or cash flows:

(i) Business Risk – Third parties may develop technological or business model innovations that address data center and network requirements in a manner that is, or is perceived to be, equivalent or superior to the Company's services. If competitors introduce services that compete with, or surpass the quality, price or performance of the Company's services, the Company may be unable to renew its agreements with existing customers or attract new customers at the prices and levels that allow the Company to generate reasonable rates of return on its investment.

(ii) Supplier Risk – The Company's operations are dependent upon bandwidth and cabinet capacity provided by the third-party telecom carriers. There can be no assurance that the Company will be able to secure the cabinet and bandwidth supply from the third-party telecom carriers, neither the Company is adequately prepared for unexpected increases in bandwidth demands by its customers. The communications capacity the Company has leased, include cabinet and bandwidth, may become unavailable for a variety of reasons, such as physical interruption, technical difficulties, contractual disputes, or the financial health of its third-party providers. Any failure of these network providers to provide the capacity the Company requires may result in a reduction in, or interruption of, service to its customers. A significant portion of the Company's total bandwidth and cabinet resources are purchased from its five largest suppliers, who collectively accounted for 39%, 39% and 35% of the Company's total bandwidth and cabinet resources for the years ended December 31, 2020, 2021 and 2022, respectively.

(iii) Customer Risk – The success of the Company's business going forward will rely in part on Company's ability to continue to obtain and expand business from existing customers while also attracting new customers. The Company has a diversified base of customers covering its services and two, one and one single entity customer generated more than 10% of the Company's total net revenues for the years ended December 31, 2020, 2021 and 2022, respectively. Certain customers are local subsidiaries of a telecommunication carrier in China, which the Company views as separate customers as it negotiates with, maintain and support each of these entities given that each of them has the separate decision-making authority and services procurement budget. None of these customers individually contributed more than 2% of the Company's revenues in any given year but in the aggregate, they contributed approximately 3%, 6% and 6% of the Company's total revenues for the years ended December 31, 2020, 2021 and 2022, respectively.

(iv) Political, economic and social uncertainties – The Company's operations could be adversely affected by significant political, economic and social uncertainties in the PRC. Although the PRC government has been pursuing economic reform policies for more than 20 years, no assurance can be given that the PRC government will continue to pursue such policies or that such policies may not be significantly altered, especially in the event of a change in leadership, social or political disruption or unforeseen circumstances affecting the PRC political, economic and social conditions. There is also no guarantee that the PRC government's pursuit of economic reforms will be consistent or effective.

(v) Regulatory restrictions – The applicable PRC laws, rules and regulations currently prohibit foreign ownership of companies that provide internet related services, including hosting and related services. Accordingly, the Company's subsidiary, VNET China, is currently ineligible to apply for the required licenses for providing IDC services in China. As a result, the Company operates its IDC services in the PRC through its Consolidated VIEs which holds the licenses and permits required to provide IDC services in the PRC. The PRC Government may also choose at anytime to block access to certain website operators which could also materially impact the Company's ability to generate revenue.

(c) Currency convertibility risk

The Company transacts substantially all its business in RMB, which is not freely convertible into foreign currencies. On January 1, 1994, the PRC government abolished the dual-rate system and introduced a single rate of exchange as quoted daily by the People's Bank of China (the "**PBOC**"). However, the unification of the exchange rates does not imply that the RMB may be readily convertible into US$ or other foreign currencies. All foreign exchange transactions continue to take place either through the PBOC or other banks authorized to buy and sell foreign currencies at the exchange rates quoted by the PBOC. Approval of foreign currency payments by the PBOC or other institutions requires submitting a payment application form together with suppliers' invoices, shipping documents and signed contracts.

(d) Foreign currency exchange rate risk

From July 21, 2005, the RMB is permitted to fluctuate within a narrow and managed band against a basket of certain foreign currencies. The (appreciation) depreciation of the RMB against US$ was approximately (6.5)%, (2.3)% and 9.2% in the years ended December 31, 2020, 2021 and 2022, respectively.

(e) Interest rate risk

The Company is exposed to interest rate risk on its interest-bearing assets and liabilities. As part of its asset and liability risk management, the Company reviews and takes appropriate steps to manage its interest rate exposures on its interest-bearing assets and liabilities. The Company has not been exposed to material risks due to changes in market interest rates, and not used any derivative financial instruments to manage the interest risk exposure during the periods presented.

4. ACQUISITION OF SUBSIDIARIES

Acquisitions in 2022

Kunshan Kunhui Network Co., Ltd. ("KS Kunhui")

On August 5, 2022, as part of its business strategy to expand the existing hosting service, the Company through its subsidiary, Beijing FengFu Technology Co., Ltd., acquired 100% of the equity interests in KS Kunhui, which primarily provides internet data center service, for a total cash consideration of RMB50,000. As KS Kunhui is in operations and possess all the elements that are necessary to conduct normal operations as a business, such acquisition is accounted for as business combination.

The following table summarizes the estimated fair value of the assets acquired and liabilities assumed as of the date of acquisition:

	RMB	*US$*
Cash and cash equivalents	9,014	1,307
Property and equipment, net	92,157	13,361
Operating lease right-of-use assets, net	199,255	28,889
Operating permits *(Note 9)*	29,000	4,205
Customer contract *(Note 9)*	59,500	8,627
Deferred tax assets	13,921	2,020
Other current assets	289,480	41,971
Total assets acquired	692,327	100,380
Other current liabilities	(436,124)	(63,232)
Operating lease liabilities	(208,612)	(30,246)
Deferred tax liabilities	(22,125)	(3,210)
Total liabilities assumed	(666,861)	(96,688)
Net assets acquired	25,466	3,692
Purchase consideration	50,000	7,249
Goodwill	24,534	3,557

The revenue and net loss of KS Kunhui since the acquisition date included in the consolidated statement of operations for the year ended December 31, 2022 were nil and RMB24,757 (US$3,589), respectively. The goodwill, which is not tax deductible, is primarily attributable to synergies expected to be achieved from the acquisition.

The pro forma results of revenue and earnings of the acquiree as if the combinations occurred as of the beginning of the comparable prior annual reporting period of the acquiree were not presented because the effects of the business combination was not significant to the Company's consolidated results of operations.

BJ Jianghe Shuzhi, Jianghe Chuangke, Jianghe Industrial and BJ Xunneng (collectively "BJ JiangHeCloud")

On August 1, 2022, the Company through its subsidiaries, YF WOFE and 21Vianet Saturn, acquired 100% equity interests in BJ JiangHeCloud at a total cash consideration of RMB847,438. Among the consideration, RMB57,500 is refundable if relevant condition set out in the agreements is not achieved. The purpose of the transaction is to establish several new data centers. As BJ JiangHeCloud does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. As of December 31, 2022, as the relevant condition was not met, the RMB57,500 refundable prepayment was included in other non-current assets.

The carrying amount of the net identifiable assets of BJ JiangHeCloud were as follows:

	RMB	*US$*
Net assets acquired:		
Cash and cash equivalents	3,325	482
Other current assets	3,959	574
Property and equipment, net	306,546	44,445
Operating permits *(Note 9)*	479,989	69,592
Land use rights, net *(Note 10)*	221,556	32,123
Other current liabilities	(15,448)	(2,240)
Deferred tax liabilities	(209,989)	(30,446)
Total consideration in cash	789,938	114,530

Acquisitions in 2021

BJ TenxCloud

On July 15, 2021,to strengthen the Company's leading position in carrier- and cloud-neutral IDC services, the Company through its wholly-owned subsidiary, SZ Cloud Native, acquired 100% of the equity interests in BJ TenxCloud from third party selling shareholders, for a total consideration of RMB414,743, which consisted of cash consideration of RMB199,790 and share-settled liabilities with estimated fair value of RMB214,953 as of July 15, 2021. The estimated fair value of the share-settled liabilities was RMB214,577 as of December 31, 2021, which was included as consideration due to the original shareholders of BJ TenxCloud in accrued expenses and other payables of the Company's consolidated balance sheet. As of December 31, 2022, the liability was RMB229,323 (US$33,249), which was based on the amounts the original selling shareholders claimed according to the acquisition agreement. BJ TenxCloud primarily provides cloud native applications and data platform services. As BJ TenxCloud is in operations and possess all the elements that are necessary to conduct normal operations as a business, such acquisition is accounted for as a business combination.

In addition, the Company is obligated to pay cash of RMB70,000 and to issue various numbers of the shares of the Company or its subsidiary with estimated fair value of RMB167,342 as of December 31, 2021 to certain selling shareholders who will remain as the key employees of BJ TenxCloud, determinable based on achievements of the financial and operational targets by BJ TenxCloud during various post-acquisition periods. As such cash and share-based payments will be forfeited if these key employees cease their employments with the Company, the Company recognized these payments as compensation costs over the requisite service periods ranging from 12 months to 36 months. As of December 31, 2021, cash of RMB70,000 has been paid to certain selling shareholders and the post-acquisition obligation for RMB70,000 was fulfilled as of December 31, 2022. The Company classified the share-based payments as liability classified share-based payments of RMB55,156 as of December 31, 2021, which are included in accrued expenses and other payables of the Company's consolidated balance sheet and are remeasured at fair value through earnings. As of December 31, 2022, the share-based payment liability was RMB131,116 (US$19,010). The related compensation for post-acquisition services provided by the employees is accounted as compensation and recorded in the Company's consolidated statements of operations (Note 23(c)).

The following table summarizes the estimated fair value of the assets acquired and liabilities assumed as of the date of acquisition:

	RMB
Property and equipment, net	470
Operating lease right-of-use assets, net	2,376
Technology platform *(Note 9)*	27,800
Customer relationship *(Note 9)*	19,000
Deferred tax assets	11,097
Other current assets	52,328
Total assets acquired	113,071
Other current liabilities	(29,395)
Operating lease liabilities	(2,500)
Deferred tax liabilities	(11,097)
Total liabilities assumed	(42,992)
Net assets acquired	70,079
Purchase consideration	414,743
Goodwill	344,664

The revenue and net profit of BJ TenxCloud since the acquisition date included in the consolidated statement of operations for the year ended December 31, 2021 were RMB91,038 and RMB9,351, respectively. The goodwill, which is not tax deductible, is primarily attributable to synergies expected to be achieved from the acquisition.

The pro forma results of revenue and earnings of the acquiree as if the combinations occurred as of the beginning of the comparable prior annual reporting period of the acquiree were not presented because the effects of the business combination was not significant to the Company's consolidated results of operations.

Zhongke Zijing

On August 16, 2021, the Company through its subsidiary, Jiwa Engineering BJ acquired 100% of the equity interests in Zhongke Zijing at a total cash consideration of RMB151,884. The purpose of the acquisition is to establish data center with the acquired property. As Zhongke Zijing does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. The carrying amounts of the net identifiable assets of Zhongke Zijing as of the date of acquisition were as follows:

	RMB
Net assets acquired:	
Operating permits *(Note 9)*	203,586
Land use rights, net *(Note 10)*	36,013
Other non-current assets	7,349
Cash and cash equivalents	3
Other current assets	21,017
Other current liabilities	(65,125)
Deferred tax liabilities	(50,959)
Total consideration in cash	151,884

SH Hesheng

On November 11, 2021, the Company through its subsidiary, SH Shilian acquired 100% of the equity interests in SH Hesheng at a total cash consideration of RMB137,557. The purpose of the acquisition is to acquire the assets and operating permits. As SH Hesheng does not possess all the elements that are necessary to conduct normal operations as a business and had not yet commenced operations, such acquisition is accounted for as an acquisition of assets. The carrying amounts of the net identifiable assets of SH Hesheng as of the date of acquisition were as follows:

	RMB
Net assets acquired:	
Operating permits *(Note 9)*	27,646
Property and equipment, net	94,148
Operating lease right-of-use assets, net	20,929
Other non-current assets	872
Cash and cash equivalents	423
Other current assets	25,646
Operating lease liabilities	(20,292)
Other current liabilities	(962)
Deferred tax liabilities	(10,853)
Total consideration in cash	137,557

5. ACCOUNTS AND NOTES RECEIVABLE, NET

Accounts and notes receivable and the allowance for doubtful debt consisted of the following:

	As of December 31,		
	2021	**2022**	
	RMB	*RMB*	*US$*
Accounts receivable	1,504,669	1,897,111	275,055
Notes receivable	948	1,151	167
Allowance for doubtful debt	(99,620)	(134,569)	(19,511)
	1,405,997	1,763,693	255,711

As of December 31, 2021 and 2022, all accounts and notes receivable were due from third party customers. An analysis of the allowance for doubtful debt was as follows:

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
Balance at beginning of the year	67,828	68,921	99,620	14,444
Cumulative adjustment for changes in accounting policy	2,740	–	–	–
Additional due to business combination	–	16,256	–	–
Additional provision charged to expense	2,393	14,990	34,949	5,067
Write-off of accounts receivable	(4,040)	(547)	–	–
Balance at the end of the year	68,921	99,620	134,569	19,511

6. SHORT-TERM INVESTMENTS

The Company recorded interest income related to its short-term investments amounting to RMB5,712, RMB894 and nil for the years ended December 31, 2020, 2021 and 2022, respectively, in the consolidated statements of operations.

7. PREPAID EXPENSES AND OTHER CURRENT ASSETS

Prepaid expenses and other current assets consisted of the following:

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Prepaid expenses (1)	942,990	988,467	143,314
Tax recoverable	964,262	620,901	90,022
Deposits	68,887	59,653	8,649
Loan to third parties (2)	17,492	376,851	54,638
Staff advances	1,561	2,992	434
Interest receivables	728	544	79
Others	53,991	98,092	14,225
	2,049,911	2,147,500	311,361

(1) Prepaid expenses mainly represented the unamortized portion of prepayments made to Microsoft for the cloud computing services, the prepayments to telecommunication operators for bandwidth, data centers or cabinets and the prepayments for office expense.

(2) In December 2022, loan amounting to RMB279,500 was provided to the third party selling shareholders of KS Kunhui (Note 4) to settle the liabilities to KS Kunhui. The loan bears an interest rate of 7.5% per annum and has a maturity term ranging from four to six months. The loan was secured by the third parties' equity shares in their subsidiaries and certain property and equipment of their subsidiaries. The remaining loans of RMB97,351 represent the balances lend to various third-parties for their working capital needs. These loans are interest free and unsecured.

8. PROPERTY AND EQUIPMENT, NET

Property and equipment, including those held under finance leases, consisted of the following:

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
At cost:			
Property	1,778,377	2,236,257	324,227
Leasehold improvements	3,302,883	4,819,257	698,727
Computer and network equipment	5,923,149	7,577,082	1,098,574
Optical fibers	142,723	142,723	20,693
Office equipment	32,561	87,093	12,627
Motor vehicles	3,959	4,098	594
	11,183,652	14,866,510	2,155,442
Less: Accumulated depreciation	(4,206,943)	(5,548,663)	(804,482)
	6,976,709	9,317,847	1,350,960
Construction-in-progress	3,239,407	2,770,348	401,663
Impairment	(123,697)	(123,697)	(17,934)
Property and equipment, net	10,092,419	11,964,498	1,734,689

Depreciation expense was RMB908,387, RMB1,164,725 and RMB1,462,550 (US$212,050) for the years ended December 31, 2020, 2021 and 2022, respectively, and were included in the following captions:

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
Cost of revenues	850,746	1,107,655	1,386,800	201,067
Sales and marketing expenses	2,399	963	1,029	149
General and administrative expenses	29,711	23,186	35,715	5,179
Research and development expenses	25,531	32,921	39,006	5,655
	908,387	1,164,725	1,462,550	212,050

The carrying amounts of the Company's property and equipment held under finance leases at respective balance sheet dates were as follows:

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Property	993,158	993,158	143,994
Computer and network equipment	823,625	971,814	140,900
Optical fibers	137,924	137,924	19,997
	1,954,707	2,102,896	304,891
Less: Accumulated depreciation	(629,927)	(847,449)	(122,869)
	1,324,780	1,255,447	182,022
Impairment	(17,377)	(18,808)	(2,727)
	1,307,403	1,236,639	179,295

Depreciation of property, computer and network equipment and optical fibers under finance leases was RMB255,458, RMB274,052 and RMB224,140 (US$32,497) for the years ended December 31, 2020, 2021 and 2022, respectively.

The carrying amounts of property and equipment pledged by the Company to secure borrowings (Note 14) granted to the Company at the respective balance sheet dates were as follows:

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Property	253,979	118,050	17,116
Leasehold improvements	160,959	92,629	13,430
Computer and network equipment	159,909	137,876	19,990
Office equipment	660	919	133

9. INTANGIBLE ASSETS, NET

The following table presented the Company's intangible assets as of the respective balance sheet dates:

	Purchased software *RMB*	Radio spectrum license *RMB*	Operating Permits *RMB*	Technology Platform *RMB*	Customer relationships *RMB*	Licenses *RMB*	Supplier relationships *RMB*	Trade names *RMB*	Customer contract *RMB*	Non-Complete Agreement *RMB*	Internal use software *RMB*	Total *RMB*
Intangible assets, Cost December 31, 2021	177,421	123,167	625,129	38,050	257,183	5,772	39,053	116,266	109,717	1,800	58,902	1,552,460
Accumulated Amortization 2021	(122,239)	(74,056)	(24,830)	(12,777)	(203,356)	(3,043)	(31,206)	(43,115)	(55,897)	(1,800)	(42,036)	(614,355)
Impairment	–	(37,770)	–	–	–	–	–	–	–	–	–	(37,770)
Intangible assets, Net December 31, 2021	55,182	11,341	600,299	25,273	53,827	2,729	7,847	73,151	53,820	–	16,866	900,335
Intangible assets, cost December 31, 2022	207,565	134,543	1,217,876	38,050	257,183	5,772	39,053	116,266	190,141	1,800	74,224	2,282,473
Accumulated Amortization 2022	(139,443)	(83,294)	(56,433)	(29,363)	(224,705)	(3,428)	(34,281)	(48,929)	(68,622)	(1,800)	(53,785)	(744,083)
Impairment	–	(41,259)	–	–	–	–	–	–	–	–	–	(41,259)
Intangible assets, Net December 31, 2022	68,122	9,990	1,161,443	8,687	32,478	2,344	4,772	67,337	121,519	–	20,439	1,497,131
Intangible assets, Net December 31, 2022 (US$)	9,877	1,448	168,393	1,259	4,709	340	692	9,763	17,619	–	2,964	217,064

Radio spectrum license represented the spectrum license awarded by the Hong Kong Telecommunication Authority. Operating permits relate to the government authorized high-capacity utilities from the assets acquisitions (Note 4). Customer relationships relate to the relationships that arose as a result of existing customer agreements acquired and is derived from the estimated net cash flows that are expected to be derived from the expected renewal of these existing customer agreements after subtracting the estimated net cash flows from other contributory assets. Licenses mainly represented the telecommunication service license in relation to virtual private network services. Supplier relationships relate to the relationships that arose as a result of existing bandwidth supply agreements with certain network operators, which were valued using a replacement cost method given the relative ease of replacement. Trade names mainly relate to the trade names of Dermot Entities. Customer contract related to existing customer agreements acquired and is derived from the estimated net cash flows that are expected to be derived over the contractual period of the existing customer agreements after subtracting the estimated net cash flows from other contributory assets. Technology platform relates to the TenxCloud Cloud Native Application Platform and Kubedata platform from acquisition of BJ TenxCloud (Note 4) in 2021 and platform software from acquisition of iJoy BVI in 2013.

The intangible assets are amortized using the straight-line method, which is the Company's best estimate of how these assets will be economically consumed over their respective estimated useful lives ranging from 1 to 48 years.

Amortization expenses were approximately RMB72,690, RMB94,751 and RMB122,470 (US$17,756) for the years ended December 31, 2020, 2021 and 2022, respectively.

The annual estimated amortization expenses for the intangible assets for each of the next five years are as follows:

	RMB	*US$*
2023	139,191	20,181
2024	106,304	15,413
2025	78,978	11,451
2026	78,978	11,451
2027	63,847	9,257
	467,298	67,753

10. LAND USE RIGHTS, NET

Land use rights held by the Company represent operating lease prepayments and are amortized over the remaining term of the respective rights.

	As of December 31,		
	2021	**2022**	
	RMB	*RMB*	*US$*
Cost	368,101	617,808	89,574
Accumulated amortization	(30,866)	(41,788)	(6,059)
Land use rights, net	337,235	576,020	83,515

The carrying amounts of land use rights pledged by the Company to secure borrowings (Note 14) granted to the Company at the respective balance sheet dates were as follows:

	As of December 31,		
	2021	**2022**	
	RMB	*RMB*	*US$*
Land use rights	135,821	115,895	16,803

11. GOODWILL

The changes in the carrying amount of goodwill were as follows:

	For the years ended December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Balance as of January 1	994,993	1,339,657	194,232
Additions	344,664	24,534	3,557
Balance as of December 31	1,339,657	1,364,191	197,789

As of December 31, 2020, 2021 and 2022, the Company has performed assessment and no impairment loss was recorded.

12. LONG-TERM INVESTMENTS, NET

The Company's long-term investments consisted of the following:

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Equity investments without readily determinable fair values	17,137	17,137	2,485
Equity method investments	79,506	223,457	32,398
Available-for-sale debt investments	1,600	1,600	232
	98,243	242,194	35,115

Equity investments without readily determinable fair values

The investment income comprised of dividend income of RMB607, RMB659 and RMB391 (US$57), and disposal gain of RMB257, nil and nil for the years ended December 31, 2020, 2021 and 2022, respectively.

The Company recorded an impairment loss of long-term investment amounting RMB13,030, nil and nil for the years ended December 31, 2020, 2021 and 2022, respectively.

Equity method investments:

	As of December 31, 2020			Increase (decrease) during the year ended December 31, 2021			As of December 31, 2021			
	Cost of investments	Share equity gain (loss)	Investments in equity investee	Cost of investments	Share equity gain (loss)	Impairment of investment	Cost of investments	Share equity gain (loss)	Impairment of investment	Investments in equity investee
	RMB	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*
Yizhuang Fund	101,000	1,683	102,683	–	(33,968)	–	101,000	(32,285)	–	68,715
Jingliang Inter Cloud	6,000	(2,831)	3,169	–	(2,182)	–	6,000	(5,013)	–	987
Jingliang Century Cloud	4,000	–	4,000	–	–	–	4,000	–	–	4,000
ZJK Energy	5,907	(2,748)	3,159	–	(1,068)	–	5,907	(3,816)	–	2,091
WiFire Entities	20,000	(20,000)	–	–	–	–	20,000	(20,000)	–	–
Qidi Chengxin	3,930	(274)	3,656	–	57	–	3,930	(217)	–	3,713
BJ Chaohulian	–	–	–	5,000	(1,505)	(3,495)	5,000	(1,505)	(3,495)	–
	140,837	(24,170)	116,667	5,000	(38,666)	(3,495)	145,837	(62,836)	(3,495)	79,506

	As of December 31, 2021				Increase (decrease) during the year ended December 31, 2022			As of December 31, 2022				
	Cost of investments	Share equity loss	Impairment of investment	Investments in equity investee	Cost of investments	Share equity gain (loss)	Distribution/ derecognize of share equity (gain) loss	Cost of investments	Share equity gain (loss)	Impairment of investment	Investments in equity investee	Investments in equity investee
	RMB	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*RMB*	*US$*
Yizhuang Fund	101,000	(32,285)	–	68,715	–	3,159	(71,874)	–	–	–	–	–
Jingliang Inter Cloud	6,000	(5,013)	–	987	–	(4)	–	6,000	(5,017)	–	983	143
Jingliang Century Cloud	4,000	–	–	4,000	–	–	–	4,000	–	–	4,000	580
ZJK Energy	5,907	(3,816)	–	2,091	–	16	–	5,907	(3,800)	–	2,107	305
WiFire Entities	20,000	(20,000)	–	–	–	–	–	20,000	(20,000)	–	–	–
Qidi Chengxin	3,930	(217)	–	3,713	–	(116)	–	3,930	(333)	–	3,597	522
BJ Chaohulian	5,000	(1,505)	(3,495)	–	–	–	–	5,000	(1,505)	(3,495)	–	–
Dexin Tonglian	–	–	–	–	3,000	(333)	–	3,000	(333)	–	2,667	387
SH Edge Interchange*	–	–	–	–	900	(797)	–	900	(797)	–	103	15
Changzhou Gaoxin	–	–	–	–	210,000	–	–	210,000	–	–	210,000	30,446
	145,837	(62,836)	(3,495)	79,506	213,900	1,925	(71,874)	258,737	(31,785)	(3,495)	223,457	32,398

* "SH Edge Interchange" represents Shanghai Edge Cloud Interchange Technology Co., Ltd.

The Company through its subsidiary, VNET Beijing, entered into an agreement to invest in the Yizhuang Venture Investment Fund ("**Yizhuang Fund**") as a limited partner since April 2012 with capital injection of RMB101,000 and held 27.694% of the investee as of December 31, 2020, 2021. Given the Company holds more than three percent interest in the Yizhuang Fund as a limited partner, the investment is accounted for under the equity method as prescribed in ASC Subtopic 323-10, *Investments – Equity Method* ("**ASC 323-10**"). For the years ended December 31, 2021 and 2022, the Company received distribution from Yizhuang Fund as return on investments with an amount of nil and RMB15,232 (US$2,208), respectively. As of December 31, 2022, the operating period of Yizhuang Fund was expired and the liquidation work was initiated. The Company derecognized the investment and recognized the estimated recoverable amount of RMB56,642 (US$8,212) in prepaid expenses and other current assets.

In September 2017, after the disposal of 66.67% equity interest in the WiFire Entities, the Company held the remaining 33.33% equity interest in the WiFire Entities, which is accounted for equity method investment at fair value at the disposal date. As of December 31, 2022, the equity method investment balance is reduced to nil after the pickup of loss in the WiFire Entities.

In January 2018, the Company through its subsidiary, VNET Beijing, and a third company jointly set up Beijing Jingliang Interconnected Cloud Technology Inc. ("**Jingliang Inter Cloud**") and Jingliang Century Cloud Technology Inc. ("**Jingliang Century Cloud**"). The Company injected capital of RMB6,000 and RMB4,000 and the Company held 60% and 40% of equity interest in Jingliang Inter Cloud and Jingliang Century Cloud, respectively. Based on the article of association, the Company cannot exercise control over relevant activities of the investee, but it has the ability to exercise significant influence over Jingliang Inter Cloud's operation and financial decisions.

In December 2019, the Company through its subsidiary, VNET Beijing, and a third company jointly set up Chengdu Qidi Chengxin Education Limited ("**Qidi Chengxin**"). The Company injected capital of RMB3,930 and hold 59% of equity interest in Qidi Chengxin. Based on the article of association, the Company cannot exercise control over relevant activities of the investee, but it has the ability to exercise significant influence over operation and financial decisions.

In January 2021, the Company through its subsidiary, VNET Beijing, and two third parties jointly set up Beijing Super Internet Technology Research Institute Co., Ltd. ("**BJ Chaohulian**"). The Company injected capital of RMB5,000 and hold 30% of equity interest in BJ Chaohulian. As of December 31, 2021, the equity method investment balance is reduced to nil after the Company pickup of loss amounting to RMB1,505 and recorded impairment of investment amounting to RMB3,495.

In September 2022, the Company through its subsidiary, Shanghai Cloud Network Co., Ltd., and five third parties jointly set up Dexin Tonglian (Beijing) Culture Technology Co., Ltd. ("**Dexin Tonglian**"). The Company injected capital of RMB3,000 and hold 30% of equity interest in Dexin Tonglian. Based on the article of association, the Company cannot exercise control over relevant activities of the investee, but it has the ability to exercise significant influence over operation and financial decisions.

In November 2022, the Company through its subsidiary, VNET HK, and a third party jointly set up Changzhou Gaoxin Internet Co., Ltd. ("**Changzhou Gaoxin**"). The Company injected capital of RMB210,000 and hold 35% of equity interest in Changzhou Gaoxin. Based on the article of association, the Company cannot exercise control over relevant activities of the investee, but it has the ability to exercise significant influence over operation and financial decisions.

13. OTHER NON-CURRENT ASSETS

As of December 31, 2021 and 2022, other non-current assets included prepayment for acquisition of datacenters and purchase of property and equipment amounting to RMB1,704,221 and RMB293,500 (US$42,553), which consist of 87% and 53% of other non-current assets, respectively.

14. BORROWINGS

Borrowings were as follows as of the respective balance sheet dates:

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Long-term bank borrowings, current portion	230,805	289,941	42,037
Other long-term borrowings, current portion	153,353	194,079	28,139
	384,158	484,020	70,176
Long-term bank borrowings, non-current portion	1,891,797	2,694,249	390,629
Other long-term borrowings, non-current portion	323,218	355,607	51,559
Total borrowings	2,599,173	3,533,876	512,364

The long-term borrowings (including current portion) outstanding as of December 31, 2021 and 2022 bore a weighted average interest rate of 5.31% and 5.11% per annum, respectively, and were denominated in RMB. These loans were obtained from financial institutions located in the PRC.

As of December 31, 2021 and 2022, unused loan facilities for bank and other borrowings amounted to RMB1,217,835 and RMB3,164,371 (US$458,791), respectively.

Borrowings as of December 31, 2021 and 2022 were secured by the following:

December 31, 2021

Long-term borrowings (including current portion) *(RMB)*	**Secured by**
1,334,065	Secured by a subsidiary's stock.
416,967	Secured by a subsidiary's land-use right with net book value of RMB24,460 (Note 10).
267,171	Secured by a subsidiary's property and equipment and land-use right with net book value of RMB124,214 and RMB96,201, respectively (Note 8/Note 10), and a subsidiary's stock.
40,500	Secured by a subsidiary's property and equipment and land-use right with net book value of RMB188,553 and RMB15,160, respectively (Note 8/Note 10).
328,168	Unsecured borrowing.
2,599,173	

December 31, 2022

Long-term borrowings (including current portion) *(RMB)*	**Secured by**
1,879,631	Secured by a subsidiary's stock.
800,989	Secured by a subsidiary's land-use right with net book value of RMB24,460 (US$3,546) (Note 10).
247,171	Secured by a subsidiary's property and equipment and land-use right with net book value of RMB118,050 (US$17,116) and RMB91,435 (US$13,257), respectively (Note 8/Note 10), and a subsidiary's stock.
156,077	Secured by a subsidiary's property and equipment with net book value of RMB231,424 (US$33,553) (Note 8), and a subsidiary's stock.
450,008	Unsecured borrowing.
3,533,876	

The following table summarizes the aggregate required repayments of the principal amounts of the Company's long-term borrowings, including bank and other borrowings in the succeeding five years and thereafter:

	RMB	*US$*
For the years ending December 31,		
2023	513,977	74,520
2024	521,078	75,549
2025	491,867	71,314
2026	378,925	54,939
2027	335,999	48,715
2028 and thereafter	1,338,336	194,040

15. ACCRUED EXPENSES AND OTHER PAYABLES

The components of accrued expenses and other payables were as follows:

	As of December 31,		
	2021	**2022**	
	RMB	*RMB*	*US$*
Payables for purchase of property, equipment and software	1,464,086	1,280,742	185,690
Payroll and welfare payables	288,613	433,376	62,834
Consideration due to the original shareholders of BJ TenxCloud *(Note 4)*	214,577	229,323	33,249
Accrued service fees	62,498	66,494	9,641
Liability classified share-based payments *(Note 4)*	55,156	131,116	19,010
Payables for office supplies and utilities	54,056	69,288	10,046
Payables for acquisitions	47,805	47,805	6,931
Value-added tax and other taxes payable	25,092	31,706	4,597
Amounts due to the original shareholders for acquired entities*	21,560	21,560	3,126
Interest payables	3,595	35,785	5,188
Others	61,051	63,284	9,175
	2,298,089	2,410,479	349,487

* *This represented the balance of unpaid cash consideration and the payables in other current liabilities due to original shareholders related to the acquisition of SH Shuzhong and Zhongke Zijing (Note 4) in 2020 and 2021 respectively.*

16. LEASES

Leases are classified as operating leases or finance leases in accordance with ASC 842. The Company's operating leases mainly related to building, office facilities and equipment and the rights to use the land in the PRC. For leases with terms greater than 12 months, the Company records the related asset and liability at the present value of lease payments over the term. Certain leases include rental escalation clauses, renewal options and/or termination options, which are factored into the Company's determination of lease payments when appropriate.

	As of December 31,	
	2021	**2022**
Weighted average remaining lease term:		
Operating lease	10.8 years	10.7 years
Finance lease	17.7 years	18.9 years
Weighted average discount rate:		
Operating lease	7.01%	7.50%
Finance lease	7.27%	10.44%

Lease cost for finance leases capitalized were immaterial for the years ended December 31, 2020, 2021 and 2022.

	For the year ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Lease cost				
Finance lease cost:				
Depreciation	255,458	274,052	224,140	32,497
Interest expenses	130,196	124,567	104,088	15,091
Operating lease cost	478,805	568,044	691,197	100,214
Total lease cost	864,459	966,663	1,019,425	147,802

Short-term lease cost and variable lease cost for operating leases and finance leases were immaterial for the years ended December 31, 2020, 2021 and 2022.

Other information related to leases was as follows:

	For the year ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Cash paid for amounts included in the measurement of lease liabilities:				
Operating cash payments for operating leases	477,189	593,615	635,615	92,156
Financing cash payments for finance leases	376,232	579,660	231,046	33,498

Future lease payments under operating leases and finance leases as of December 31, 2022 were as follows:

	Operating Leases		**Finance Leases**	
	RMB	*US$*	*RMB*	*US$*
2023	699,299	101,389	285,892	41,450
2024	606,310	87,907	189,838	27,524
2025	569,269	82,536	121,814	17,661
2026	519,993	75,392	97,119	14,081
2027	394,271	57,164	96,312	13,964
2028 and thereafter	2,637,314	382,375	1,626,607	235,836
Total future lease payments	5,426,456	786,763	2,417,582	350,516
Less: Imputed interest	(1,846,885)	(267,774)	(1,163,682)	(168,717)
Present value of future lease payments*	3,579,571	518,989	1,253,900	181,799

* *Present value of future operating lease payments consisted of current portion of operating lease liabilities and non-current portion of operating lease liabilities, amounting to RMB674,288 (US$97,763) and RMB2,905,283 (US$421,226) for the year ended December 31, 2022, respectively.*

Present value of future finance lease payments consisted of current portion of finance lease liabilities and non-current portion of finance lease liabilities, amounting to RMB206,260 (US$29,905) and RMB1,047,640 (US$151,894) for the year ended December 31, 2022, respectively.

17. BONDS PAYABLE

On April 15, 2019, the Company issued and sold bonds with an aggregate principal amount of US$300,000 at a coupon rate of 7.875% per annum ("**2021 Notes**"). The 2021 Notes has matured on October 15, 2021. The 2021 Notes were listed and quoted on the SGX-ST. Interest on the 2021 Notes is payable semi-annually in arrears on April 15 and October 15 in each year, beginning from October 15, 2019.

Net proceeds from 2021 Notes after deducting issuance costs were RMB1,976,474. The 2021 Notes are unsecured and rank senior in right of payment to any of the Company's indebtedness that is expressly subordinated to the bonds; equal in right of payment to any of the Company's liabilities that are not so subordinated, including the 2020 Notes; effectively junior in the right of payment to any secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including accounts payables) of the Company's subsidiaries and Consolidated VIEs.

In 2017, the Company issued bonds due 2020 with an aggregate principal amount of US$300,000 ("**2020 Notes**"). On April 16, 2019, the Company repurchased US$150,839 in principal amount of 2020 Notes, representing approximately 50.28% of the US$300,000 total aggregate principal amount of the 2020 Notes outstanding as at such date. On August 12, 2019, the Company repurchased US$18,000 in principal amount of 2020 Notes. The remaining outstanding 2020 Notes with principal amount of US$131,161 continue to be the obligation of the Company. The Company recognized loss on debt extinguishment of RMB18,895 during the year ended December 31, 2019. On August 4, 2020, the Company repaid the remaining outstanding 2020 Notes with principal amount of US$131,161.

On October 4, 2021, the Company repaid the outstanding 2021 Notes with principal amount of US$300,000.

18. PERPETUAL CONVERTIBLE PREFERRED SHARES

In June 2020, the Company issued 150,000 Series A perpetual convertible preferred shares (the "**Series A Preferred Shares**") at the subscription price of 1,000 US dollars per subscribed share for a total cash consideration of US$150,000.

The significant terms of the Series A Preferred Shares are summarized as follows:

Dividends

From and after the original issuance date, cumulative dividends on each Series A Preferred Share will accrue in arrears at the dividend rate of 4.5% per annum on the original issuance price of 1,000 US dollars per subscribed share. All accrued dividends on any Series A Preferred Share will be paid in cash, when, as and if declared by the Board of Directors out of funds legally available therefor or upon a liquidation of the Company.

Holders of the Series A Preferred Shares will also be entitled to receive any dividends declared by the Board of Directors on a pro rata basis with the ordinary shares determined on an as-converted basis. The dividends or distributions shall be distributed among all holders of ordinary shares and Series A Preferred Shares in proportion to the number of ordinary shares that would be held by each such holder if all Series A Preferred Shares had been converted to ordinary shares as of the record date fixed for determining those entitled to receive such distribution.

For dividends on cumulative preferred stock classified in permanent equity, dividends are not recognized until declared by the Board of Directors. RMB28,637 dividend was declared by the Company on the conversion date.

Liquidation preference

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company, the holders of Series A Preferred Shares will be entitled to be paid out of the assets of the Company available for distribution to its shareholders before any distribution or payment out of the assets of the Company will be made to the holders of ordinary shares at a preferential amount in cash equal to the greater of (i) the aggregate original issuance price of 1,000 US dollars per Series A Preferred Shares, plus any unpaid, accrued and accumulated dividends on all such Series A Preferred Shares (whether or not declared) and (ii) the aggregate value that such holders of Series A Preferred Shares would have received had all holders of Series A Preferred Shares, immediately prior to such Liquidation, converted all Series A Preferred Shares then outstanding (together with any unpaid, accrued and accumulated dividends thereon) into Class A ordinary shares at the applicable conversion price then in effect.

If the Company has insufficient assets to pay the holders of the Series A Preferred Shares the full preferential amount, (a) the holders of the Series A Preferred Shares will share ratably in any distribution of the remaining assets of the Company in proportion to the respective full preferential amounts which would otherwise be payable to each such holder in full, and (b) the Company will not make or agree to make, or set aside for the benefit of the holders of ordinary shares, any payments to the holders of ordinary shares.

Conversion

Series A Preferred Shares can be converted at any time at the option of the holder into Class A ordinary shares by dividing the original issuance price plus any unpaid, accrued and accumulated dividends up to, but excluding, the conversion date by the conversion price in effect immediately prior to such conversion. Series A Preferred Shares will be mandatorily converted into Class A ordinary shares at any time after six months from the original issuance date when the daily volume-weighted average price of the ADS ("**VWAP**") of certain period equals or exceeds the 200% of the conversion price per ADS ("**Conversion Threshold**").

Conversion price is initially, US$2.8333 per Class A Ordinary Shares or US$17.00 per ADS and is subject to additional adjustments if the Company makes certain dilutive issuances of shares.

Voting

Each Series A Preferred Shares holder will be entitled to a number of vote equal to the number of Class A ordinary shares then issuable upon its conversion into Class A ordinary shares at the record date for determination of the shareholders entitled to vote on such matters, or, if no such record date is established, at the date when such vote is taken or any written consent of shareholders is solicited.

Accounting for the Series A Preferred Shares

The Series A Preferred Shares are classified as permanent equity and initially recorded at the issuance price at the time of closing. There were no embedded features that qualified for bifurcation and separate accounting in accordance with ASC 815-10, *Derivatives and Hedging*. As the time of closing, beneficial conversion features with the amount of RMB470,643 was recorded as a reduction to the respective preferred shares with an offsetting credit to additional paid-in capital. This amount was immediately accreted back as a deemed distribution to Series A perpetual convertible preferred shareholders.

The Company early adopted ASU 2020-06, *Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40), Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* ("**ASU 2020-06**"), starting on January 1, 2021 using modified retrospective transition method applied to those transactions outstanding as of January 1, 2021. The impact of adoption of ASU 2020-06 was immaterial for Series A Preferred Shares.

On March 1, 2021, 150,000 Series A Preferred Shares all has been converted into 54,507,816 Class A Ordinary Shares at the conversion price US$17.00 per ADS.

On January 27, 2022, the Company's board of directors authorized the issuance of 300,000 Series A-1 perpetual convertible preferred shares by re-designation of the authorized but unissued Class A Ordinary Shares. The terms of dividend rights, liquidation preference, conversion right and voting right of Series A-1 perpetual convertible preferred shares are similar with Series A Preferred Shares.

19. CONVERTIBLE PROMISSORY NOTES

2025 Convertible Notes

During the year ended December 31, 2020 the Company entered into agreements with a group of investors led by Goldman Sachs Asia Strategic Pte. Ltd. (the "**Purchasers**") to issue the Company's convertible promissory note (the "**2025 Convertible Notes**") for total gross proceeds of US$200,000. The 2025 Convertible Notes will mature in five years and, bear interest at the rate of 2% per annum from the issuance date which will be payable semiannually in arrears in cash.

Conversion

Purchasers have the option to convert all or a portion of the outstanding 2025 Convertible Notes and any accrued and unpaid interest, into ADSs at the conversion price at any time. The conversion price will initially be US$12.00 per ADS or will be subject to customary adjustments when the decrease in VWAP exceeds certain threshold. In addition, the conversion price will be adjusted in the event when the Company makes certain dilutive issuances of shares.

Redemption upon maturity

Unless previously redeemed or converted, the Company shall redeem the 2025 Convertible Notes on the maturity date in an amount equal to the sum of (i) 115% of the then outstanding principal amount of the 2025 Convertible Notes and (ii) the interest accrued but unpaid on the maturity date. The Company may not redeem the 2025 Convertible Notes at its option prior to the maturity date.

Early redemption at the option of the Purchasers

If any portion of the outstanding principal amount of the 2025 Convertible Notes has not been converted by the third anniversary of the date of issuance of the 2025 Convertible Notes, the Purchasers at their sole discretion will have the right to require the Company to redeem, in whole or in part, the outstanding principal amount of the 2025 Convertible Notes which has not been converted previously in an amount equal to the sum of (i) 109% of the outstanding principal amount and (ii) the interest accrued but unpaid on the outstanding principal amount.

The Company elected to account for the 2025 Convertible Notes at fair value as a whole. Issuance costs including underwriting commissions and offering expenses were approximately RMB18,932, which were recognized in earnings as incurred.

During the years ended December 31, 2020 and 2021, Purchasers of the 2025 Convertible Notes exercised the right to convert 23,710,140 and 42,401,010 newly issued Class A ordinary shares at the conversion price of US$12 per ADS. Upon conversion, the fair value of converted portion was RMB720,547 and RMB1,639,806, respectively. Issuance costs were approximately RMB2,939 and nil, respectively, which were credited to capital accounts with the changes in the fair value up to the conversion date recorded in earning. No conversion rights were exercised by the Purchasers for the year ended December 31, 2022.

The interest expense on the convertible promissory was recorded based on the stated rate of 2% in the interest expense within the consolidated statements of operations. For the years ended December 31, 2020, 2021 and 2022, the interest expense was RMB18,880, RMB9,703 and RMB9,147 (US$1,326), respectively.

As of December 31, 2021 and 2022, the fair value of the remaining 2025 Convertible Notes was RMB513,754 and RMB537,778 (US$77,970), respectively. The changes in fair value gain of convertible promissory notes of RMB829,149 and RMB22,626 (US$3,280) were recognized in the changes in the fair value of convertible promissory notes in the consolidated statement of operations for the years ended December 31, 2021 and 2022, respectively. The fair value changes related to instrument-specific credit risk was nil and nil for the years ended December 31, 2021 and 2022, respectively. As of December 31, 2022, the balance of the 2025 Convertible Notes was presented as current liability since the Purchasers are able to exercise their redemption right upon the third anniversary of the date of issuance during 2023.

2026 Convertible Notes

In January 2021, the Company issued US$600,000 principal amount 0.00% convertible senior notes including US$75,000 sold upon the exercise of the over- allotment option (the "**2026 Convertible Notes**"). The 2026 Convertible Notes will mature on February 1, 2026 unless redeemed, repurchased or converted prior to such date.

Holders may convert their 2026 Convertible Notes at their option prior to the close of business on the business day immediately preceding August 1, 2025 only under the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ending on June 30, 2021 (and only during such calendar quarter), if the last reported sale price of ADSs', each representing six Class A ordinary shares of the Company, par value US$0.00001 per share, for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day; (2) during the five business day period after any ten consecutive trading day period in which the trading price per 1,000 US dollars principal amount of the 2026 Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the ADSs and the conversion rate on each such trading day; (3) if the Company calls the 2026 Convertible Notes for a tax or optional redemption; or (4) upon the occurrence of specified corporate events. On or after August 1, 2025 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert their 2026 Convertible Notes at any time. Upon conversion, the Company will pay or deliver, as the case may be, cash, ADSs, or a combination of cash and ADSs, at its election. If the Company satisfies its conversion obligation solely in cash or through payment and delivery, as the case may be, of a combination of cash and ADSs, the amount of cash and ADSs, if any, due upon conversion will be based on a daily conversion value calculated on a proportionate basis for each trading day in a 40 trading day observation period.

The initial conversion rate of the 2026 Convertible Notes is 18.3574 of the Company's ADS per 1,000 US dollars principal amount of the 2026 Convertible Notes (which is equivalent to an initial conversion price of approximately US$54.47 per ADS). The conversion rate will be subject to adjustment in some events. In addition, following certain corporate events that occur prior to the maturity date, if a make-whole fundamental change occurs prior to the maturity date of the 2026 Convertible Notes, or under certain circumstances upon a tax redemption or the Company's optional redemption, the Company will, in certain circumstances, increase the conversion rate for a holder who elects to convert its 2026 Convertible Notes in connection with such corporate event, such make-whole fundamental change or such notice of tax redemption or notice of optional redemption, as the case may be. Upon conversion, the Company will pay or deliver, as the case may be, cash, ADSs (plus cash in lieu of a fractional ADS) or a combination of cash and ADSs, at its election. The conversion option may be settled in cash, ADSs, or a combination of cash and ADSs at the Company's option.

The Company may not redeem the 2026 Convertible Notes prior to February 6, 2024 unless certain tax-related events occur. On or after February 6, 2024 and on or prior to the 40th scheduled trading day immediately before the maturity date, the Company may redeem for cash all or part of the 2026 Convertible Notes, at its option, if the last reported sale price of the Company's ADSs has been at least 130% of the conversion price then in effect on (i) each of at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period ending on, and including, the trading day immediately prior to the date the Company provides notice of redemption; and (ii) the trading day immediately preceding the date the Company sends such notice. Holders of the notes have the right to require the Company to repurchase for cash all of the 2026 Convertible Notes, or any portion of the principal thereof, on February 1, 2024 or in the event of certain fundamental changes. The redemption price will equal 100% of the principal amount of the 2026 Convertible Notes to be redeemed, plus any accrued and unpaid special interest, if any, to, but not including, the redemption date. No sinking fund is provided for the 2026 Convertible Notes.

ASU 2020-06 simplified an issuer's accounting for convertible instrument by eliminating the cash conversion and beneficial conversion feature models in ASC 470-20, *Debt with Conversion and Other Options*, that requires separate accounting for such conversion features. Results for reporting periods beginning after January 1, 2021 are presented under ASU 2020-06, while prior period amounts have not been adjusted and continue to be reported in accordance with historic accounting. The impact of adopting the new guidance was not material to consolidated financial statements and there was no adjustment to beginning retained earnings on January 1, 2021.

The 2026 Convertible Notes was accounted for as one unit of liability account using amortized cost method under ASU 2020-06, with no embedded derivative features being bifurcated.

The gross proceeds from issuance of the 2026 Convertible Notes were US$600,000. Debt issuance costs including underwriting commissions and offering expenses were approximately US$13,841, which were presented as deduction from liability and amortized into interest expense over the remaining period of 5 years. As of December 31, 2021 and 2022, the net carrying amount of the 2026 Convertible Notes was RMB3,753,197 and RMB4,119,048 (US$597,206), respectively. For the years ended December 31, 2021 and 2022, no coupon interest expense was recognized. The amortization of issuance costs was RMB16,216 and RMB18,525 (US$2,686) for the years ended December 31, 2021 and 2022, respectively. The effective interest rate was both 0.47% for the years ended December 31, 2021 and 2022.

2027 Convertible Notes

On January 28, 2022, the Company entered into an investment agreement with funds managed by Blackstone Tactical Opportunities (each fund as an "**Investor Party**") to issue the Company's convertible promissory note (the "**2027 Convertible Notes**") with principal amount of US$250,000. The 2027 Convertible Notes will mature in five years unless redeemed or converted prior to maturity date. For any holder that is an Investor Party as of the maturity date, the maturity date shall be extended to the 31st day after the maturity date (the "**Investor Maturity Date**") and unless the 2027 Convertible Notes held by such holder have been duly redeemed or converted prior to the Investor Maturity Date, the Company's repayment obligation to such holder will be satisfied by issuance and delivery of an aggregate number of Series A-1 perpetual convertible preferred shares equal to (1) the remaining portion of the principal amount, divided by (2) 1,000 US dollars, in repayment of the 2027 Convertible Notes. 2027 Convertible Notes bear interest at the rate of 2% per annum and paid in cash semi-annually unless prior written notice is provided to the holders by the Company.

Conversion

2027 Convertible Notes will be convertible at any time on and after the original issuance date, at the option of holders, into Class A ordinary shares of the Company at a conversion price of US$1.8333 per Class A ordinary share, or into ADSs at a conversion price of US$11.00 per ADS. The conversion prices are subject to adjustment under the terms of the 2027 Convertible Notes. The Company may effect a mandatory conversion at its election at any time on or after the third anniversary of the original issuance date, if its ADSs achieve a price threshold of 200% of the conversion price for a specified period.

Redemption

The holders have the right to require the Company to redeem the 2027 Convertible Notes during the Redemption Period as defined below in an amount equal to the sum of: (a) the principal amount of the 2027 Convertible Notes; plus (b) the total amount of the accrued interest, and any stub period interest that has accrued until, but excluding, the date the redemption price is paid in full; plus (c) the incremental amount in case a fundamental change specified in the investment agreement has occurred. Incremental amount is equal to (a) 50% of the principal amount, minus (b) the interest that has already been paid in cash, minus (c) the fair market value of a dividend or distribution paid to the holder in any form other than cash or as Class A Ordinary Shares, minus (d) the accrued interest and minus (e) the stub period interest accrued. Any portion of the redemption price not paid by the Company on the redemption date shall accrue interest at a rate of 10% per annum annually from the redemption date to the date when the redemption price is paid in full.

"Redemption Period" means: (a) in the case of any holder that is the Investor Party, (i) the period commencing on the date of a fundamental adverse regulatory change, a fundamental change or an event of default as defined in the investment agreement and ending on the fifth anniversary of the original issuance date, and (ii) the thirty-day period beginning on the fifth anniversary of the original issuance date; and (b) in the case of any holder that is not Investor Party, the period commencing on the date of a fundamental adverse regulatory change or an event of default and ending on the fifth anniversary of the original issuance date.

The redemption feature is required to be bifurcated as a separate unit of liability account and measured at fair value as it is not clearly and closely related to the debt host contract. The fair value of the redemption feature is immaterial initially and subsequently at year end. After the bifurcation, the 2027 Convertible Notes was accounted for using amortized cost method.

The gross proceeds from issuance of the 2027 Convertible Notes were US$250,000. Debt issuance costs were approximately US$162, which were presented as deduction from liability and amortized into interest expense over the remaining period of 5 years. As of December 31, 2022, the net carrying amount of the 2027 Convertible Notes was RMB1,740,211 (US$252,307). For the year ended December 31, 2022, the coupon interest expense was RMB30,498 (US$4,422) and the amortization of issuance costs was RMB179 (US$26). The effective interest rate was 2.02% for the year ended December 31, 2022.

20. DEFERRED GOVERNMENT GRANTS

During the years ended December 31, 2020, 2021 and 2022, the Company received nil, nil and RMB5,000 government grants respectively from the relevant PRC government authorities for the use in construction of property and equipment. These grants are initially deferred and subsequently recognized in the consolidated statements of operations when the Company has complied with the conditions or performance obligations attached to the related government grants, if any, and the grants are no longer refundable. Grants that subsidize the construction cost of property and equipment are amortized over the life of the related assets as a reduction of the associated depreciation expense.

Movements of deferred government grants were as follows:

	For the years ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Balance at beginning of the year	8,501	6,174	4,368	633
Additions	–	–	5,000	725
Recognized as a reduction of depreciation expense	(2,327)	(1,806)	(3,050)	(442)
Balance at end of the year	6,174	4,368	6,318	916

21. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The changes in accumulated other comprehensive income (loss) by component, net of tax of nil, were as follows:

	Foreign currency translation *RMB*
Balance as of January 1, 2020	77,904
Current year other comprehensive loss	(133,439)
Balance as of December 31, 2020	(55,535)
Current year other comprehensive loss	(34,908)
Balance as of December 31, 2021	(90,443)
Current year other comprehensive income	101,465
Balance as of December 31, 2022	11,022
Balance as of December 31, 2022, in US$	1,598

22. MAINLAND CHINA EMPLOYEE CONTRIBUTION PLAN

As stipulated by the regulations of the PRC, full-time employees of the Company in the PRC participate in a government-mandated multiemployer defined contribution plan organized by municipal and provincial governments. Under the plan, certain pension benefits, medical care, unemployment insurance, employee housing fund and other welfare benefits are provided to employees. The Company is required to make contributions to the plan based on certain percentages of employees' salaries. The total expenses for the plan were RMB77,982, RMB158,673 and RMB191,914 (US$27,825) for the years ended December 31, 2020, 2021 and 2022, respectively.

23. SHARE-BASED COMPENSATION

(a) Option granted to employees

In order to provide additional incentives to employees and to promote the success of the Company's business, the Company adopted a share incentive plan in 2010 (the "**2010 Plan**"). Under the 2010 Plan, the Company may grant options and RSUs to its employees, directors and consultants to purchase an aggregate of no more than 39,272,595 ordinary shares of the Company. The 2010 Plan was approved by the Board of Directors and shareholders of the Company on July 16, 2010. The 2010 Plan is administered by the Board of Directors or the Compensation Committee of the Board as set forth in the 2010 Plan (the "**Plan Administrator**"). All share options to be granted under the 2010 Plan have a contractual term of ten years and generally vest over 3 to 4 years in the grantee's option agreement.

In order to further promote the success and enhance the value, the Company adopted a share incentive plan in 2014 (the "**2014 Plan**"). Under the 2014 Plan, the Company may issue an aggregate of no more than 20,461,380 shares ("**Maximum Number**") and such Maximum Number should be automatically increased by a number that is equal to 15% of the number of new shares issued by the Company from time to time. The maximum aggregate number of ordinary shares to be issued under 2014 Plan was subsequently amended to 39,606,817, as approved by the Board of Directors and shareholders of the Company on October 30, 2015. All share options, restricted shares and restricted share units to be granted under the 2014 Plan have a contractual term of ten years and generally vest over 3 to 4 years in the grantee's option agreement.

In order to continuously attract and retain talents, the Company adopted a share incentive plan in 2020 (the "**2020 Plan**"). Under the 2020 Plan, the Company is authorized to issue an aggregate of 46,560,708 Class A ordinary shares of the Company (equal to the sum of (i) 5% of the Company's share capital as of the date hereof, calculated on an as-converted basis by taking into consideration all the convertible promissory notes issued and to be issued by the Company, and (ii) 7,562,532 Class A ordinary shares reserved under the "2010 Plan" and "2014 Plan" for future grants) will be reserved for future issuance. After adoption of the 2020 Plan, the Company will cease to grant any new awards under the 2010 Plan and 2014 Plan while the 2010 Plan and 2014.

Plan and outstanding awards granted thereunder will remain effective and can be amended by the Company from time to time pursuant to the applicable terms thereto. The 2020 Plan was approved by the Board of Directors and shareholder of the Company on May 13, 2020.

The following table summarized the Company's employee share option activity under the 2010 Plan:

	Number of options	Weighted average exercise price *(US$)*	Weighted average remaining contractual term *(Years)*	Aggregate intrinsic value *(US$)*
Outstanding, January 1, 2022	362,004	0.17	0.01	–
Exercised	(2,802)	0.15	–	–
Outstanding, December 31, 2022	359,202	0.17	1.96	277
Vested at December 31, 2022	359,202	0.17	1.96	277
Exercisable as of December 31, 2022	359,202	0.17	1.96	277

The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying awards and the fair value of the underlying stock at each reporting date, for those awards that have an exercise price below the estimated fair value of the Company's shares. As of December 31, 2022, the Company had options outstanding to purchase an aggregate of 359,202 shares with an exercise price below the fair value of the Company's shares, resulting in an aggregate intrinsic value of RMB1,911 (US$277).

The aggregate fair value at the grant date of the outstanding options as of December 31, 2022 was determined to be RMB5,062 (US$733) The total fair value of share options exercised during the years ended December 31, 2020, 2021 and 2022 was US$594, US$122 and US$4, respectively. The aggregate intrinsic value of options exercised during the years ended December 31, 2020, 2021 and 2022 was US$2,336, US$67, and US$2, respectively.

As of December 31, 2022, the Company has recorded all the share-based compensation expenses in relation to outstanding share options.

(b) Shares granted to management

The Company granted 314,842, 3,534,767 and 866,716 RSUs in 2020, 2021 and 2022, respectively, with performance conditions whereby a predetermined number will vest upon the assignment of an annual performance review in accordance with predetermined performance targets for the grantees over a one or four-year period. As it is probable for the Company to estimate the annual performance review ratings for the individual grantees, the Company recognized the related compensation expenses using the accelerated recognition method.

The Company granted 1,848,701, 298,454 and 22,000 RSUs in 2020, 2021 and 2022, respectively, with performance conditions whereby a predetermined number will vest upon with the achievement of predetermined operation performance targets for the Company. As it is probable for the Company to estimate the operation performance for the Company, the Company recognized the related compensation expenses using the accelerated recognition method.

The following table summarized the Company's RSUs activity under the 2014 and 2020 Plan:

	Number of RSUs	Weighted average grant date fair value *(US$)*	Weighted average remaining contractual life *(Years)*	Aggregate intrinsic value *(US$)*
Unvested, January 1, 2022	2,808,129	14.18	7.4	–
Granted	888,716	5.48	–	–
Vested	(944,474)	7.29	–	–
Forfeited	(1,051,507)	17.72	–	–
Unvested, December 31, 2022	1,700,864	11.28	6.1	9,644

Share-based compensation expenses for RSUs are measured based on the closing fair market value of the Company's ADS on the date of grant and the reporting date for liability classified RSUs, respectively. The aggregate fair value of the unvested RSUs as of December 31, 2022 was RMB66,517 (US$9,644). The weighted average grant date fair value of RSUs granted during the years ended December 31, 2020, 2021 and 2022 was US$22.62, US$12.31 and US$5.48, respectively. The total fair value of RSUs vested during the years ended December 31, 2020, 2021 and 2022 was US$3,866, US$42,672 and US$6,883, respectively.

As of December 31, 2022, there was RMB21,591 (US$3,130) of unrecognized share-based compensation expenses related to RSUs which is expected to be recognized over a weighted average vesting period of 0.4 year. Total unrecognized share-based compensation expenses may be adjusted for future changes when actual forfeitures incurred.

(c) Share-based compensation due to business combination (Note 4)

For the years ended December 31, 2021 and 2022, the Company recorded compensation cost of RMB55,156 and RMB75,960 (US$11,013) within the Company's consolidated statements of operations. As of December 31, 2022, there was RMB18,496 (US$2,682) of unrecognized share-based compensation expenses.

Total share-based compensation expenses relating to share options, RSUs granted to employees and share-based compensation due to business combination recognized for the years ended December 31, 2020, 2021 and 2022 were as follows:

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
Cost of revenues	15,251	13,713	563	82
Sales and marketing expenses	38,247	2,545	17,794	2,580
General and administrative expenses	82,672	292,947	85,508	12,397
Research and development expenses	634	10,805	14,305	2,074
	136,804	320,010	118,170	17,133

24. TAXATION

Enterprise income tax ("EIT")

Cayman Islands

The Company is incorporated in the Cayman Islands and conducts its primary business operations through the subsidiaries and VIEs in the PRC and Hong Kong. Under the current laws of the Cayman Islands, the Company is not subject to tax on income or capital gain arising in Cayman Islands.

British Virgin Islands

Subsidiaries in British Virgin Islands are not subject to tax on income or capital gains under the current laws of the British Virgin Islands. Additionally, upon payments of dividends by the Company to its shareholders, no British Virgin Islands withholding tax will be imposed.

Hong Kong

Subsidiaries in Hong Kong are subject to Hong Kong profits tax rate of 16.5% for the years ended December 31, 2020, 2021 and 2022. A two-tiered profits tax rates regime was introduced in 2018 under which the first HK$2 million of assessable profits earned by an eligible company will be taxed at 8.25% and the remaining profits will continue to be taxed at 16.5%. There is an anti-fragmentation measure where each group will have to nominate only one company in the group to benefit from the progressive rates. Additionally, upon payments of dividends by the Company to its shareholders, no HK withholding tax will be imposed.

Taiwan

DYX Taiwan branch is incorporated in Taiwan and is subject to Taiwan profits tax rate of 20% for the years ended December 31, 2020, 2021 and 2022.

The PRC

The Company's PRC subsidiaries are incorporated in the PRC and subject to the statutory rate of 25% on the taxable income in accordance with the Enterprise Income Tax Law (The "**EIT Law**"), which was effective since January 1, 2008, except for certain entities eligible for preferential tax rates.

Dividends, interests, rent or royalties payable by the Company's PRC subsidiaries, to non-PRC resident enterprises, and proceeds from any such non-resident enterprise investor's disposition of assets (after deducting the net value of such assets) shall be subject to 10% withholding tax, unless the respective non-PRC resident enterprise's jurisdiction of incorporation has a tax treaty or arrangements with China that provides for a reduced withholding tax rate or an exemption from withholding tax.

VNET Beijing was qualified for a High and New Technology Enterprise ("**HNTE**") since 2008 and is eligible for a 15% preferential tax rate. In October 2014, VNET Beijing obtained a new certificate and reapplied the certificate in October 2017 and 2020, with a validity term of three years. In accordance with the PRC Income Tax Laws, an enterprise awarded with the HNTE certificate may enjoy a reduced EIT rate of 15%. For the years ended December 31, 2020, 2021 and 2022, the tax rate for VNET Beijing was 15%, 15% and 15%, respectively.

In April 2011, Xi'an Sub, a subsidiary located in Shaanxi Province, was qualified for a preferential tax rate of 15% and started to apply this rate from then on. The preferential tax rate is awarded to companies that are located in West Regions of China which operate in certain encouraged industries. For the years ended December 31, 2020, 2021 and 2022, the tax rate assessed for Xi'an Sub was 15%, 15% and 15%, respectively.

In October 2015, SH Blue Cloud, a subsidiary located in Shanghai, was qualified for a HNTE and became eligible for 15% preferential tax rate. The certificate was reapplied in November 2018 and November 2021 with a validity term of three years. Accordingly, for the years ended December 31, 2020, 2021 and 2022, SH Blue Cloud enjoyed a preferential tax rate of 15%.

In November 2016, SZ DYX, a subsidiary located in Guangdong Province, was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years and the certificate was reapplied in November 2019 and December 2022 with a validity term of three years. Accordingly, for the years ended December 31, 2020, 2021 and 2022, SZ DYX enjoyed a preferential tax rate of 15%.

In December 2016, BJ TenxCloud, a subsidiary located in Beijing and the Company acquired in July 2021 (Note 4), was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years and the certificate was reapplied in December 2019 and December 2022 with a validity term of three years. Accordingly, for the years ended December 31, 2020, 2021 and 2022, BJ TenxCloud enjoyed a preferential tax rate of 15%.

In December 2019, SH Hesheng, a subsidiary located in Shanghai, in which the Company acquired 100% of the equity in November 2021 (Note 4), was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years. For the years ended December 31, 2020, 2021 and 2022, the tax rate assessed for SH Hesheng was 15%, 15% and 25%, respectively.

The New EIT Law also provides that enterprises established under the laws of foreign countries or regions and whose "place of effective management" is located within the PRC are considered PRC tax resident enterprises and subject to PRC income tax at the rate of 25% on worldwide income. The definition of "place of effective management" refers to an establishment that exercises, in substance, overall management and control over the production and business, personnel, accounting, properties, etc. of an enterprise.

As of December 31, 2022, the administrative practice associated with interpreting and applying the concept of "place of effective management" is unclear. If the Company is deemed as a PRC tax resident, it will be subject to 25% PRC EIT under the New EIT Law on its worldwide income, meanwhile the dividend it receives from another PRC tax resident company will be exempted from 25% PRC income tax. The Company will continue to monitor changes in the interpretation or guidance of this law.

(Loss) income before income taxes consisted of:

	For the years ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Non-PRC	(2,708,101)	675,369	(421,597)	(61,126)
PRC	137,178	(48,861)	(206,933)	(30,004)
	(2,570,923)	626,508	(628,530)	(91,130)

Income tax expenses comprised of:

	For the years ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Current	(131,844)	(111,082)	(115,577)	(16,757)
Deferred	22,508	(325)	(17,887)	(2,593)
	(109,336)	(111,407)	(133,464)	(19,350)

The reconciliation of tax computed by applying the statutory income tax rate of 25% for the years ended December 31, 2020, 2021 and 2022 applicable to the PRC operations to income tax expenses were as follows:

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
(Loss) income before income taxes	(2,570,923)	626,508	(628,530)	(91,130)
Income tax benefits (expenses) computed at applicable tax rates (25%)	642,731	(156,627)	157,133	22,782
Non-deductible expenses	(4,117)	(13,116)	(72,156)	(10,462)
Research and development expenses	32,777	45,122	67,789	9,828
Preferential rate	26,554	14,232	(6,163)	(894)
Current and deferred tax rate differences	(36,391)	26,115	15,847	2,298
International rate differences	(711,962)	120,678	(75,119)	(10,891)
Tax exempted income	1,087	14,536	249	36
Foreign investment	(10,263)	(49,815)	(39,224)	(5,687)
Unrecognized tax benefits	(58,449)	(12,338)	(13,674)	(1,983)
Change in valuation allowance	6,465	(79,733)	(135,732)	(19,679)
Prior year provision to return true up	2,232	(22,898)	(28,949)	(4,197)
Others	–	2,437	(3,465)	(501)
Income tax expenses	(109,336)	(111,407)	(133,464)	(19,350)

Deferred Tax

The significant components of deferred taxes were as follows:

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Deferred tax assets			
Non-current			
Allowance for doubtful debt	46,360	52,658	7,635
Impairment of long-lived assets	40,289	40,784	5,913
Impairment of long-term investment	3,024	3,024	438
Accrued expense	16,836	22,108	3,205
Tax losses	262,209	358,454	51,971
Property and equipment	28,569	38,365	5,562
Intangible assets	5,773	7,142	1,035
Finance lease	386,849	372,997	54,079
Deferred government grant	1,046	1,714	249
Operating lease	623,074	768,638	111,442
Loss picked up on equity method investments	66,121	69,440	10,070
Valuation allowance	(261,960)	(397,457)	(57,626)

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Total deferred tax assets, net of valuation allowance	1,218,190	1,337,867	193,973
Deferred tax liabilities			
Non-current			
Intangible assets	241,090	266,922	38,699
Property and equipment	139,566	360,989	52,338
Capitalized interest expense	28,604	39,606	5,742
Finance lease	306,598	289,586	41,986
Operating lease	623,074	768,638	111,442
Investment in subsidiaries	59,660	98,608	14,299
Total non-current deferred tax liabilities	1,398,592	1,824,349	264,506
Net deferred tax liabilities	(180,402)	(486,482)	(70,533)
Analysis as:			
Deferred tax assets	168,002	196,098	28,432
Deferred tax liabilities	348,404	682,580	98,965
Net deferred tax liabilities	(180,402)	(486,482)	(70,533)

As of December 31, 2022, the Company has net tax operating losses from its PRC subsidiaries and its Consolidated VIEs, as per filed tax returns, of RMB1,671,411 (US$242,332), which will expire at various times between 2023 and 2032 and the majority expiring by 2027, if not utilized.

As of December 31, 2022, the undistributed earnings of the Company's PRC subsidiaries the Company intends to permanently reinvested were RMB1,579,318 (US$228,980). In 2022, other than these indefinitely reinvested amount, the Company has other operation or distribution plan for the new VIE, SH Zhiyan. As of December 31, 2022, the related deferred tax liability accrued was RMB98,608 (US$14,299).

For the year ended December 31, 2022, addition and expiration of valuation allowance was RMB135,732 (US$19,679) and RMB235 (US$34), respectively.

Unrecognized Tax Benefits

As of December 31, 2021 and 2022, the Company recorded unrecognized tax benefits of RMB77,573 and RMB87,174 (US$12,639), respectively.

The unrecognized tax benefits and its related interest are primarily related to non-deductible expenses and accrued expenses. RMB61,827 of the total unrecognized tax benefits, ultimately recognized, will impact the effective tax rate. It is possible that the amount of uncertain tax benefits will change in the next 12 months, however, an estimate of the range of the possible outcomes cannot be made at this time.

A roll-forward of unrecognized tax benefits principal was as follows:

	For the years ended December 31,		
	2021	**2022**	
	RMB	*RMB*	*US$*
Balance at beginning of year	62,584	64,854	9,403
Reversal based on tax positions related to prior years	(170)	(418)	(61)
Additions based on tax positions related to the current year	2,440	92	12
Balance at end of year	64,854	64,528	9,354

For the years ended December 31, 2020, 2021 and 2022, the Company recorded interest expense of RMB5,391, RMB6,606 and RMB9,874 (US$1,432), respectively. Accumulated interest expense recorded by the Company was RMB12,718 and RMB22,646 (US$3,285) as of December 31, 2021 and 2022, respectively. As of December 31, 2022, the tax years ended December 31, 2017 through 2022 for the PRC subsidiaries remain open for statutory examination by the PRC tax authorities.

25. RELATED PARTY TRANSACTIONS

a) Related parties*

Name of related parties	**Relationship with the Company**
Xiaomi Ventures Limited ("**Xiaomi**"), Xiaomi Communication Technology Co., Ltd., and its subsidiary, Beijing Xiaomi Mobile Software Co., Ltd. (collectively, "**Xiaomi Group**") (2)	A company controlled by principal shareholder of the Company before December 30, 2020
King Venture Holdings Limited ("**King Venture**") and Beijing Kingsoft Cloud Network Technology Co., Ltd. ("**BJ Kingsoft**") (1)	A company controlled by principal shareholder of the Company before December 30, 2020

Name of related parties	Relationship with the Company
Beijing Cheetah Mobile Technology Co., Ltd. ("**BJ Cheetah**") (1)	A company controlled by principal shareholder of the Company before December 30, 2020
Tuspark Innovation Venture Ltd. ("**Tuspark Innovation**")	The controlling shareholder of the Company before April 13, 2021
Beijing Tuspark Harmonious Investment Development Co., Ltd. ("**Tuspark Harmonious**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021
Ziguang Financial Leasing Co., Ltd. ("**Ziguang Finance Leasing**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021
Qidi Bus (Beijing) Technology Co., Ltd. ("**Qidi Tech**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021
Beijing Qidi Yefeng Investment Co., Ltd. ("**Beijing Qidi Yefeng**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021
Beijing Huaqing Property Management Co., Ltd. ("**Beijing Huaqing**") (5)	A company controlled by controlling shareholder of the Company before April 13, 2021
Shanghai Shibei Hi-Tech Co., Ltd. ("**SH Shibei**")	Non-controlling shareholder of a subsidiary
Shanghai Puping Information Technology Co., Ltd. ("**Shanghai Puping**") (4)	A company controlled by minority shareholder of the Company
Beijing Chengyishidai Network Engineering Technology Co., Ltd. ("**CYSD**") (3)	Equity investee of the Company
WiFire (Beijing) Technology Co., Ltd. ("**WiFire BJ**") (3)	Equity investee of the Company

Name of related parties	Relationship with the Company
Beijing Fastweb Network Technology Co., Ltd. ("**BJ Fastweb**") (3)	Equity investee of the Company
Jingliang Interconnected Cloud Technology Co., Ltd. ("**Jingliang Inter Cloud**")	Equity investee of the Company
Apurimac Partners Limited ("**APL**") (6)	A company controlled by an officer of the Company before September 30, 2022
Beijing New Internet Digital Technology Research Institution Limited ("**BJ New Internet**")	Equity investee of the Company
Anhui Suzhou Century Broadband Data Technology Co., Ltd. ("**SZ Century**") (7)	A company controlled by an equity investee of principal shareholder of the Company from December 1, 2021 to October 31, 2022
SH Edge Interchange	Equity investee of the Company since September 30, 2022

* These are the related parties that have engaged in significant transactions with the Company for the years ended December 31, 2020, 2021 and 2022.

(1) These companies are ultimately controlled by the same party. King Venture made a significant investment in the Company in 2015. These companies ceased to be related parties as the Company repurchased the shares from King Venture on December 30, 2020.

(2) These companies are ultimately controlled by the same party. Xiaomi made a significant investment in the Company in 2015. These companies ceased to be related parties as the Company repurchased the shares from King Venture on December 30, 2020.

(3) These entities were disposed by the Company in September 2017, included in WiFire Entities, and determined by the Company as related parties as of December 31, 2020, 2021 and 2022.

(4) These entities are controlled by Waburg Pincus, a significant minority shareholder of the Company.

(5) These companies are ultimately controlled by the same party. Tuspark Innovation was the controlling shareholder as of December 31, 2020. These companies ceased to be related parties as the Company repurchased shares from Tuspark Innovation on April 13, 2021.

(6) These companies were controlled by Samuel Shen, the CEO of Company in 2020. These companies ceased to be related parties as Samuel Shen resigned from the Company in September 2022.

(7) SZ Century was controlled by an equity investee of a principal shareholder of the Company from December 1, 2021. SZ Century ceased to be a related party as the equity interests in SZ Century was disposed by the equity investee of the principal shareholder on October 31, 2022.

b) Other than disclosed elsewhere, the Company had the following significant related party transactions for the years ended December 31, 2020, 2021 and 2022:

	For the years ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Services provided to:				
– SZ Century	–	1,445	14,089	2,043
– SH Edge Interchange	–	–	651	94
– Jingliang Inter Cloud	880	480	–	–
– BJ New Internet	–	170	–	–
– Xiaomi Group	527,679	–	–	–
– Qidi Tech	3,478	–	–	–
– BJ Cheetah	98	–	–	–
– BJ Kingsoft	43	–	–	–
– Others	305	144	2	0.3
Services provided by:				
– CYSD	38,918	38,918	36,673	5,317
– Beijing Huaqing	4,389	1,254	–	–
– BJ Kingsoft	16,867	–	–	–
– APL	8,124	–	–	–
– Jingliang Inter Cloud	4,956	–	–	–
– Others	796	1,223	513	74
Loan to:				
– Shanghai Puping	62,531	75,611	–	–
– BJ New Internet	–	261	–	–
– SH Edge Interchange	–	–	500	72
Interest income from loan to:				
– SH Shibei	–	1,321	–	–
– SH Edge Interchange	–	–	1	0.1
Lease deposit paid to:				
– Ziguang Finance Leasing	135	–	–	–
Lease deposit paid to:				
– Ziguang Finance Leasing	30,776	10,431	–	–
– Beijing Qidi Yefeng	4,516	2,154	–	–
– Tuspark Harmonious	43,703	–	–	–
Cash consideration for shares repurchase				
– Tuspark Innovation	–	1,701,804	–	–
– King Venture	130,472	–	–	–

c) The Company had the following related party balances as of December 31, 2021 and 2022:

	As of December 31,		
	2021	**2022**	
	RMB	*RMB*	*US$*
Amounts due from related parties:			
Current:			
– Shanghai Puping	138,142	138,142	20,029
– SZ Century	16,996	–	–
– SH Shibei	11,121	11,121	1,612
– BJ New Internet	441	441	64
– SH Edge Interchange	–	1,191	173
– Others	1,267	1,194	173
	167,967	152,089	22,051
Amounts due to related parties:			
Current:			
– CYSD	6,870	6,398	928
– APL	765	–	–
– SZ Century	571	–	–
– Others	566	530	76
	8,772	6,928	1,004

26. RESTRICTED NET ASSETS

The Company's ability to pay dividends is primarily dependent on the Company receiving distributions of funds from its subsidiaries. Relevant PRC statutory laws and regulations permit payments of dividends by the Company's PRC subsidiaries only out of their retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. The results of operations reflected in the consolidated financial statements prepared in accordance with U.S. GAAP differ from those reflected in the statutory financial statements of the Company's PRC subsidiaries.

In accordance with the PRC Regulations on Enterprises with Foreign Investment and the articles of association of the Company's PRC subsidiaries, a foreign-invested enterprise established in the PRC is required to provide certain statutory reserves, namely general reserve fund, the enterprise expansion fund and staff welfare and bonus fund which are appropriated from net profit as reported in the enterprise's PRC statutory accounts. A foreign-invested enterprise is required to allocate at least 10% of its annual after-tax profit to the general reserve until such reserve has reached 50% of its respective registered capital based on the enterprise's PRC statutory accounts. Appropriations to the enterprise expansion fund and staff welfare and bonus fund are at the discretion of the board of directors for all foreign-invested enterprises. The aforementioned reserves can only be used for specific purposes and are not distributable as cash dividends. VNET China was established as a foreign-invested enterprise and, therefore, is subject to the above mandated restrictions on distributable profits. As of December 31, 2021, and 2022, the Company's PRC subsidiaries had appropriated RMB74,462 and RMB77,995 (US$11,308), respectively, in its statutory reserves.

As a result of these PRC laws and regulations subject to the limit discussed above that require annual appropriations of 10% of after-tax income to be set aside, prior to payment of dividends as general reserve fund, the Company's PRC subsidiaries are restricted in their ability to transfer a portion of their net assets to the Company. Amounts restricted include paid-in capital, additional paid in capital and statutory reserve funds of the Company's PRC subsidiaries and the equity of the Consolidated VIEs, as determined pursuant to PRC generally accepted accounting principles, totaling an aggregate of RMB13,157,965 (US$1,907,726) as of December 31, 2022.

27. (LOSS) EARNING PER SHARE

Basic and diluted (loss) earning per share for each of the years presented were calculated as follows:

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
Numerator:				
Net (loss) earning	(2,680,259)	515,101	(761,994)	(110,480)
Net income attributable to non-controlling interest	(29,088)	(15,003)	(13,958)	(2,024)
Net (loss) earning attributable to the Company	(2,709,347)	500,098	(775,952)	(112,504)
Plus undeclared cumulative dividend on perpetual convertible preferred shares	(22,806)	–	–	–
Deemed distribution to perpetual convertible preferred shareholders	(470,643)	–	–	–
Dividend distribution to perpetual convertible preferred shareholders	–	(5,831)	–	–
Adjusted net (loss) earning attributable to ordinary shareholders – Basic	(3,202,796)	494,267	(775,952)	(112,504)
Changes in the fair value of convertible promissory notes	–	(829,149)	–	–
Adjusted interest for convertible promissory notes	–	9,703	–	–
Adjusted net loss attributable to ordinary shareholders – Diluted	(3,202,796)	(325,179)	(775,952)	(112,504)
Denominator:				
Weighted average number of shares outstanding – basic	716,888,919	865,352,554	886,817,620	886,817,620
Weighted average number of shares outstanding – diluted	716,888,919	911,591,433	886,817,620	886,817,620
(Loss) earning per share – Basic:				
Net (loss) earning	(4.47)	0.57	(0.87)	(0.13)
	(4.47)	0.57	(0.87)	(0.13)
Loss per share – Diluted:				
Net loss	(4.47)	(0.36)	(0.87)	(0.13)
	(4.47)	(0.36)	(0.87)	(0.13)

During the year ended December 31, 2021, the Company issued 7,800,000 ordinary shares to its share depositary bank which will be used to settle stock option awards upon their exercise. No consideration was received by the Company for this issuance of ordinary shares. These ordinary shares are legally issued and outstanding but are treated as escrowed shares for accounting purposes and therefore, have been excluded from the computation of loss per share. Any ordinary shares not used in the settlement of stock option awards will be returned to the Company.

Stock options, RSUs, the Company's 2025 Convertible Notes, 2026 Convertible Notes and 2027 Convertible Notes (Note 19) or other potentially dilutive equity instruments were excluded from the calculation of diluted loss earnings per share if they were anti-dilutive.

28. SHARE CAPITAL

Holders of Class A Ordinary Shares, Class B Ordinary Shares and Class C Ordinary Shares are entitled to the same rights except for voting and conversion rights. In respect of matters requiring a shareholder's vote, each Class A Ordinary Share is entitled to one vote right, each Class B Ordinary Share is entitled to ten votes, and each Class C Ordinary Share is entitled to one vote and certain veto rights. Each Class B Ordinary Share and Class C Ordinary Share is convertible into one Class A Ordinary Share at any time by the holder. Class A Ordinary Shares are not convertible into Class B Ordinary Share and Class C Ordinary Shares under any circumstances. Upon any transfer of Class B Ordinary Shares and Class C Ordinary Shares by a holder to any person or entity which is not an affiliate of such holder, such Class B Ordinary Shares and Class C Ordinary Share will be automatically converted into an equal number of Class A Ordinary Shares.

In August 2020, the Company completed a public offering in which the Company offered and sold 19,550,000 ADSs (or 117,300,000 Class A ordinary shares), including 2,550,000 ADSs (or 15,300,000 Class A ordinary shares) purchased by the underwriters by exercising their option. The Company raised a total of RMB2,680,421 in proceeds from this public offering, net of underwriting discounts and commissions and other issuance costs.

During the years ended December 31, 2020 and 2021, Purchaser of the 2025 Convertible Notes exercised the right to convert approximately 23.7% and 42.3% of the total principal amount issued to 23,710,140 and 42,401,010 newly issued Class A ordinary shares at the conversion price of US$12 per ADS, respectively.

In June 2020, the Company issued 150,000 Series A Preferred Shares. On March 1, 2021, all 150,000 Series A Preferred Shares have been converted into 54,507,816 Class A Ordinary Shares.

In April 2021, the Company repurchased from Tuspark Innovation Venture Ltd., ("**Tuspark**") 48,634,493 Class B ordinary shares for an aggregate purchase price of US$260.0 million. The repurchase price was at US$5.346 per ordinary share, or US$32.076 per ADS. 48,634,493 Class B ordinary shares were cancelled immediately. Meanwhile, remaining 62,418,897 Class B ordinary shares held by Tuspark were converted into the same number of Class A ordinary shares of the Company.

On August 19, 2021, 4,100,000 Class B ordinary shares held by Sunrise Corporate Holding Ltd., were converted into the same number of Class A ordinary shares.

During the year ended December 31, 2021, 16,680,000 Class A ordinary shares were issued to settle the share options exercised and RSUs vested.

During the year ended December 31, 2021, the Company issued 7,800,000 Class A ordinary shares to its share depositary bank which will be used to settle stock option awards upon their exercise. No consideration was received by the Company for this issuance of ordinary shares. These ordinary shares are legally issued and outstanding but are treated as escrowed shares for accounting purposes.

On January 27, 2022, the Company's board of directors authorized the issuance of 300,000 Series A-1 perpetual convertible preferred shares by re-designation of the authorized but unissued Class A Ordinary Shares.

29. FAIR VALUE MEASUREMENTS

The Company applies ASC 820. ASC 820 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. ASC 820 requires disclosures to be provided on fair value measurement.

ASC 820 establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1 – Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2 – Include other inputs that are directly or indirectly observable in the marketplace.

Level 3 – Unobservable inputs which are supported by little or no market activity.

ASC 820 describes three main approaches to measuring the fair value of assets and liabilities: (1) market approach; (2) income approach; and (3) cost approach. The market approach uses prices and other relevant information generated from market transactions involving identical or comparable assets or liabilities. The income approach uses valuation techniques to convert future amounts to a single present value amount. The measurement is based on the value indicated by current market expectations about those future amounts. The cost approach is based on the amount that would currently be required to replace an asset.

Assets and liabilities measured at fair value on a recurring basis include cash equivalent, available-for-sale debt securities, the 2025 Convertible Notes and share consideration due to the original shareholders for business combination. Liabilities measured at amortized cost method include the 2026 Convertible Notes and the 2027 Convertible Notes. The fair value of these financial instruments are summarized below:

	Fair value measurement using:			
	Quoted prices in active markets for identical assets (Level 1)	**Significant other observable inputs (Level 2)**	**Unobservable inputs (Level 3)**	**Fair value at December 31, 2021**
	RMB	*RMB*	*RMB*	*RMB*
Cash equivalents:				
– Time deposits	15,013	–	–	15,013
Long-term investments:				
– Available-for-sale debt securities	–	–	1,600	1,600
Assets	15,013	–	1,600	16,613
Convertible promissory notes				
– 2025 Convertible promissory notes	–	–	513,754	513,754
– 2026 Convertible promissory notes	3,021,852	–	–	3,021,852
Accrued expenses and other payables:				
– Share consideration due to the original shareholders for business combination *(Note 4)*	–	–	214,577	214,577
Liabilities	3,021,852	–	728,331	3,750,183

	Fair value measurement using:				
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Unobservable inputs (Level 3)	Fair value at December 31, 2022	
	RMB	*RMB*	*RMB*	*RMB*	*US$*
Long-term investments:					
– Available-for-sale debt securities	–	–	1,600	1,600	232
Assets	–	–	1,600	1,600	232
Convertible promissory notes					
– 2025 Convertible promissory notes	–	–	537,778	537,778	77,970
– 2026 Convertible promissory notes	3,446,432	–	–	3,446,432	499,686
– 2027 Convertible promissory notes	–	–	1,858,095	1,858,095	269,398
Liabilities	3,446,432	–	2,395,873	5,842,305	847,054

Cash equivalents and 2026 Convertible Notes are classified within Level 1 because they are valued by using quoted market prices.

The 2025 Convertible Notes, the 2027 Convertible Notes, share consideration due to the original shareholders for business combination, and long-term investments are classified within Level 3. The fair value of share consideration due to the original shareholders for business combination as of December 31, 2021 (Note 4) was estimated using Monte Carlo simulation model that involves several parameters including the share price, share price volatility and risk-free rate. The fair value of 2025 Convertible Notes and 2027 Convertible Notes is measured using binomial tree pricing model that involves several parameters including the Company's stock price, stock price volatility determined from the Company's historical stock prices, the remaining maturity term and the discount rate. The fair value of 2025 Convertible Notes as of December 31, 2021 and 2022 is estimated with the following key assumptions:

	As of December 31,	
	2021	2022
Volatility	72.00%-73.00%	94.00%-96.00%
Discount rate	14.00%	16.00%
Risk-free interest rate	1.00%-1.03%	4.23%-4.28%

The assumptions are inherently uncertain and subjective. Changes in any unobservable inputs may have a significant impact on the fair value of 2025 Convertible Notes.

The Company measures equity investments elected to use the measurement alternative at fair value on a nonrecurring basis, in the cases of an impairment charge is recognized, fair value of an investment is remeasured in an acquisition/a disposal, and an orderly transaction for identical or similar investments of the same issuer was identified.

The following table presented a reconciliation of all liabilities measured at fair value on a recurring basis using significant unobservable inputs (level 3):

	2025 Convertible Notes
	RMB
Fair value at issuance date *(Note 19)*	3,014,057
Foreign exchange loss	(31,348)
Changes in the fair value	(829,149)
Reclassification to equity	(1,639,806)
Fair value at December 31, 2021	513,754
Foreign exchange gain	46,650
Changes in the fair value	(22,626)
Fair value at December 31, 2022	537,778
Fair value at December 31, 2022 (US$)	77,970

	Share consideration due to the original shareholders for business combination
	RMB
Fair value at grant date *(Note 4)*	214,953
Changes in the fair value	(376)
Fair value at December 31, 2021	214,577
Transfer out of Level 3 *(Note 4)*	(214,577)
Fair value at December 31, 2022	–
Fair value at December 31, 2022 (US$)	–

Assets measured at fair value on a non-recurring basis

The Company measures certain non-financial assets on a nonrecurring basis. The Company's non-financial long-lived assets, such as intangible assets, goodwill and fixed assets, would be measured at fair value only if they were determined to be impaired on an other-than-temporary basis. The fair values of non-financial long-lived assets were measured under income approach, based on the Company's best estimation which primarily includes significant unobservable inputs (level 3) such as future cash flows and discount rate.

30. COMMITMENTS AND CONTINGENCIES

Capital commitments

As of December 31, 2022, the Company has the following commitments to purchase certain computer and network equipment and construction-in-progress:

	RMB	*US$*
For the year ending December 31,		
2023	1,615,667	234,250
2024	81,478	11,813
2025	8,420	1,221
2026	874	127
2027	11,371	1,649
2028 and thereafter	104	15
	1,717,914	249,075

Bandwidth and cabinet capacity purchase commitments

As of December 31, 2022, the Company has outstanding purchase commitments in relation to bandwidth and cabinet capacity consisting of the following:

	RMB	*US$*
For the year ending December 31,		
2023	1,075,436	155,924
2024	439,850	63,772
2025	221,724	32,147
2026	209,410	30,362
2027	36,746	5,328
2028 and thereafter	49,577	7,188
	2,032,743	294,721

Income Taxes

As of December 31, 2022, the Company has recognized an accrual of RMB87,174 (US$12,639) for unrecognized tax benefits and its interest (Note 24). The final outcome of the tax uncertainty is dependent upon various matters including tax examinations, interpretation of tax laws or expiration of status of limitation. However, due to the uncertainties associated with the status of examinations, including the protocols of finalizing audits by the relevant tax authorities, there is a high degree of uncertainty regarding the future cash outflows associated with these tax uncertainties.

Operating Litigation

In the ordinary course of business, the Company may from time to time be involved in legal proceedings and litigations. As of December 31, 2021 and 2022, the Company did not consider an unfavorable outcome in any material respects in the outstanding legal proceedings and litigations to be probable.

31. SUBSEQUENT EVENTS

On February 15, 2023, the Company's board of directors approved and authorized the issuance of up to 555,000 newly created Class D ordinary shares to Mr. Sheng Chen, the executive chairman of the board. The Class D ordinary shares will have the same rights as the existing Class B ordinary shares except for voting rights, and holders of Class D ordinary shares shall be entitled to 500 votes per share on all matters submitted to shareholder vote. As of the date of this annual report, no Class D ordinary shares have been issued.

In March and April 2023, the Company received notices from certain holders of the 2025 Convertible Notes, requiring the Company to redeem the 2025 Convertible Notes at 109% of the principal amount of US$64,000 plus all accrued but unpaid interest within three months since the receipt of notices.

32. PARENT COMPANY ONLY CONDENSED FINANCIAL INFORMATION

Condensed balance sheets

	Notes	As of December 31, 2021	2022	
		RMB	*RMB*	*US$*
ASSETS				
Current assets:				
Cash and cash equivalents		100,019	7,661	1,111
Prepaid expenses and other current assets		93,546	99,962	14,493
Amounts due from subsidiaries	*(b)*	9,844,114	12,399,253	1,797,722
Total current assets		10,037,679	12,506,876	1,813,326
Non-current assets:				
Investments in subsidiaries		2,333,998	1,484,730	215,266
Total non-current assets		2,333,998	1,484,730	215,266
Total assets		12,371,677	13,991,606	2,028,592
LIABILITIES AND SHAREHOLDERS' EQUITY				
Current liabilities:				
Accrued expenses and other payables		54,893	88,225	12,791
Account payables		51	56	8
Convertible promissory notes		–	537,778	77,970
Amount due to related parties		765	–	–
Amounts due to subsidiaries	*(b)*	806,788	896,675	130,005
Total current liabilities		862,497	1,522,734	220,774
Non-current liabilities:				
Convertible promissory notes		4,266,951	5,859,259	849,513
Total non-current liabilities		4,266,951	5,859,259	849,513
Total liabilities		5,129,448	7,381,993	1,070,287

		As of December 31,		
	Notes	**2021**	**2022**	
		RMB	*RMB*	*US$*
Shareholders' equity:				
Class A Ordinary shares (par value of US$0.00001 per share; 1,199,790,000 and 1,199,490,000 shares authorized; 859,932,323 and 859,932,323 shares issued and outstanding as of December 31, 2021 and 2022, respectively)		56	56	8
Class B Ordinary Shares (par value of US$0.00001 per share; 300,000,000 and 300,000,000 shares authorized; 30,721,723 and 30,721,723 shares issued and outstanding as of December 31, 2021 and 2022, respectively)		4	4	1
Class C Ordinary Shares (par value of US$0.00001 per share; 60,000 and 60,000 shares authorized; 60,000 and 60,000 shares issued and outstanding as of December 31, 2021 and 2022, respectively)		–	–	–
Additional paid-in capital		15,198,055	15,239,926	2,209,582
Accumulated other comprehensive (loss) income		(90,443)	11,022	1,598
Accumulated deficit		(7,515,920)	(8,291,872)	(1,202,208)
Treasury stock		(349,523)	(349,523)	(50,676)
Total shareholders' equity		7,242,229	6,609,613	958,305
Total liabilities and shareholders' equity		12,371,677	13,991,606	2,028,592

Condensed statements of operations

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
Operating expenses				
General and administrative expenses	(94,175)	(275,881)	(36,219)	(5,251)
Operating loss	(94,175)	(275,881)	(36,219)	(5,251)
Other loss	(168,656)	(119,932)	(247,083)	(35,825)
Changes in the fair value of convertible promissory notes	(2,544,220)	829,149	22,626	3,280
Share of profits (losses) from subsidiaries and Consolidated VIEs	97,704	66,762	(515,276)	(74,708)
Net (loss) income attributable to VNET Group, Inc.	(2,709,347)	500,098	(775,952)	(112,504)
Income tax expense	–	–	–	–
Net (loss) income	(2,709,347)	500,098	(775,952)	(112,504)

Condensed statements of comprehensive (loss) income

	For the years ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
Net (loss) income	(2,709,347)	500,098	(775,952)	(112,504)
Other comprehensive (loss) income, net of tax of nil:				
Foreign currency translation adjustments, net of tax of nil	(133,439)	(34,908)	101,465	14,711
Other comprehensive (loss) income, net of tax of nil:	(133,439)	(34,908)	101,465	14,711
Comprehensive (loss) income	(2,842,786)	465,190	(674,487)	(97,793)
Comprehensive (loss) income attributable to VNET Group, Inc.	(2,842,786)	465,190	(674,487)	(97,793)

Condensed statements of cash flows

	For the years ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
Net cash used in operating activities	(743,944)	(218,664)	(14,927)	(2,163)
Net cash (used in) generated from investing activities	(3,036,370)	113,530	(1,670,058)	(242,136)
Net cash generated from financing activities	3,598,441	143,037	1,592,627	230,909
Net (decrease) increase in cash and cash equivalents and restricted cash	(181,873)	37,903	(92,358)	(13,390)
Cash and cash equivalents and restricted cash at beginning of the year	243,989	62,116	100,019	14,501
Cash and cash equivalents and restricted cash at end of the year	62,116	100,019	7,661	1,111

(a) Basis of presentation

In the Company-only financial statements, the Company's investment in subsidiaries is stated at cost plus equity in undistributed earnings of subsidiaries since inception.

The Company records its investment in its subsidiary under the equity method of accounting as prescribed in ASC 323-10, *Investment-Equity Method and Joint Ventures*, and such investment is presented on the balance sheets as "Investments in subsidiaries" and the share of the subsidiaries' profit or loss is presented as "Share of profits of subsidiaries and Consolidated VIEs" on the statements of operations.

The subsidiaries did not pay any dividends to the Company for the years presented.

Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted and as such, these Company-only financial statements should be read in conjunction with the Company's consolidated financial statements.

(b) Related party transactions

The Company had the following related party balances as of December 31, 2021 and 2022:

	As of December 31,		
	2021	2022	
	RMB	*RMB*	*US$*
Amounts due from subsidiaries			
– VNET HK	7,195,150	9,492,742	1,376,318
– WiFire Open Network Group Ltd.	2,286,602	2,513,185	364,378
– VNET Future Technology Limited	306,034	334,301	48,469
– VNET Mobile	55,679	57,972	8,405
– Others	649	1,053	152
	9,844,114	12,399,253	1,797,722
Amounts due to subsidiaries			
– DYX	462,551	525,048	76,125
– HongKong Fastweb Holdings Co., Limited	212,778	232,432	33,699
– VNET Beijing	76,453	63,016	9,136
– Others	55,006	76,179	11,045
	806,788	896,675	130,005

D. UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS OF THE TARGET COMPANY FOR THE SIX MONTHS ENDED 30 JUNE 2023

Statement Regarding Unaudited Condensed Financial Information

The unaudited financial information set forth above is preliminary and subject to potential adjustments. Adjustments to the consolidated financial statements may be identified when audit work has been performed for the Company's year-end audit, which could result in significant differences from this preliminary unaudited condensed financial information.

VNET GROUP, INC.
CONSOLIDATED BALANCE SHEETS
*(Amount in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	As of December 31, 2022	As of June 30, 2023	
	RMB	*RMB*	*US$*
Assets		**Ex-Rate**	7.2513
Current assets:			
Cash and cash equivalents	2,661,321	2,362,999	325,872
Restricted cash	327,673	253,088	34,902
Accounts and notes receivable, net	1,763,693	2,020,880	278,692
Short-term Investments	–	144,516	19,930
Prepaid expenses and other current assets	2,147,500	2,542,062	350,569
Amounts due from related parties	152,089	232,518	32,066
Total current assets	7,052,276	7,556,063	1,042,031
Non-current assets:			
Property and equipment, net	11,964,498	12,396,048	1,709,493
Intangible assets, net	1,497,131	1,436,523	198,106
Land use rights, net	576,020	610,195	84,150
Operating lease right-of-use assets, net	3,503,925	3,882,743	535,455
Goodwill	1,364,191	1,364,191	188,131
Restricted cash	500	882	122
Deferred tax assets, net	196,098	214,944	29,642
Long-term Investments, net	242,194	755,625	104,205
Other non-current assets	551,572	598,865	82,587
Total non-current assets	19,896,129	21,260,016	2,931,891
Total assets	26,948,405	28,816,079	3,973,922

VNET GROUP, INC.

CONSOLIDATED BALANCE SHEETS (CONTINUED)

*(Amount in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	As of December 31, 2022	As of June 30, 2023	
	RMB	*RMB*	*US$*
Liabilities and Shareholders' Equity			
Current liabilities:			
Accounts and notes payable	713,628	743,685	102,559
Accrued expenses and other payables	2,410,479	2,680,426	369,648
Advances from customers	1,157,963	1,448,931	199,817
Deferred revenue	95,078	83,474	11,512
Income taxes payable	42,017	37,897	5,226
Amounts due to related parties	6,928	356,358	49,144
Current portion of long-term borrowings	484,020	532,969	73,500
Current portion of finance lease liabilities	206,260	144,561	19,936
Current portion of deferred government grants	3,646	3,646	503
Current portion of operating lease liabilities	674,288	735,409	101,418
Convertible promissory notes	537,778	4,433,161	611,361
Total current liabilities	6,332,085	11,200,517	1,544,624
Non-current liabilities:			
Long-term borrowings	3,049,856	3,667,562	505,780
Convertible promissory notes	5,859,259	1,805,589	249,002
Non-current portion of finance lease liabilities	1,047,640	1,181,477	162,933
Unrecognized tax benefits	87,174	87,174	12,022
Deferred tax liabilities	682,580	692,113	95,447
Deferred government grants	2,672	101,471	13,993
Non-current portion of operating lease liabilities	2,905,283	3,172,632	437,526
Total non-current liabilities	13,634,464	10,708,018	1,476,703
Shareholders' equity			
Ordinary shares	60	60	8
Additional paid-in capital	15,239,926	15,220,309	2,098,977
Accumulated other comprehensive income	11,022	3,800	524
Statutory reserves	77,996	77,996	10,756
Accumulated deficit	(8,369,868)	(8,520,454)	(1,175,024)
Treasury stock	(349,523)	(349,523)	(48,201)
Total VNET Group, Inc. shareholders' equity	6,609,613	6,432,188	887,040
Non-controlling interest	372,243	475,356	65,555
Total shareholders' equity	6,981,856	6,907,544	952,595
Total liabilities and shareholders' equity	26,948,405	28,816,079	3,973,922

VNET GROUP, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

*(Amount in thousands of Renminbi ("**RMB**") and US dollars ("**US$**") except for number of shares and per share data)*

	Three months ended				Six months ended		
	June 30, 2022	March 31, 2023	June 30, 2023		June 30, 2022	June 30, 2023	
	RMB	*RMB*	*RMB*	*US$*	*RMB*	*RMB*	*US$*
Net revenues	1,724,863	1,805,782	1,821,744	251,230	3,370,349	3,627,526	500,259
Cost of revenues	(1,367,086)	(1,453,402)	(1,478,995)	(203,963)	(2,657,051)	(2,932,392)	(404,396)
Gross profit	357,777	352,380	342,749	47,267	713,298	695,129	95,863
Operating income (expenses)							
Other operating income	1,588	33,379	13,895	1,916	41,285	47,274	6,519
Sales and marketing expenses	(80,368)	(65,776)	(63,068)	(8,697)	(155,309)	(128,844)	(17,768)
Research and development expenses	(76,740)	(79,750)	(81,126)	(11,188)	(149,355)	(160,876)	(22,186)
General and administrative expenses	(167,044)	(127,447)	(128,017)	(17,654)	(321,281)	(255,464)	(35,230)
Reversal for doubtful debt	845	2,449	8,833	1,218	3,478	11,282	1,556
Total operating expenses	(321,719)	(237,145)	(249,483)	(34,405)	(581,182)	(486,628)	(67,109)
Operating profit	36,058	115,235	93,266	12,862	132,116	208,501	28,754
Interest income	8,814	5,681	10,038	1,384	13,363	15,719	2,168
Interest expense	(68,530)	(69,786)	(71,709)	(9,889)	(121,649)	(141,495)	(19,513)
Other income	2,896	1,164	14,192	1,957	8,287	15,356	2,118
Other expenses	(693)	(3,592)	(320)	(44)	(1,045)	(3,912)	(539)
Changes in the fair value of convertible promissory notes	(2,321)	21,298	154	21	57,957	21,452	2,958
Foreign exchange (loss) gain	(319,875)	78,633	(271,630)	(37,459)	(295,126)	(192,997)	(26,616)
(Loss) income before income taxes and gain (loss) from equity method investments	(343,651)	148,633	(226,009)	(31,168)	(206,097)	(77,376)	(10,670)
Income tax expenses	(30,946)	(44,886)	(12,545)	(1,730)	(77,646)	(57,431)	(7,920)
Gain (loss) from equity method investments	1,090	(174)	983	136	3,137	809	112
Net (loss) income	(373,507)	103,573	(237,571)	(32,762)	(280,606)	(133,998)	(18,478)
Net (profit) loss attributable to non-controlling interest	(3,696)	(21,280)	4,692	647	(5,891)	(16,588)	(2,288)
Net (loss) income attributable to VNET Group, Inc.	(377,203)	82,293	(232,879)	(32,115)	(286,497)	(150,586)	(20,766)
(Loss) earnings per share							
Basic	(0.43)	0.09	(0.26)	(0.04)	(0.32)	(0.17)	(0.02)
Diluted	(0.43)	0.07	(0.26)	(0.04)	(0.37)	(0.19)	(0.03)
Shares used in (loss) earnings per share computation							
Basic*	886,204,618	888,383,240	888,705,981	888,705,981	885,915,878	888,555,145	888,555,145
Diluted*	886,204,618	1,056,829,494	888,705,981	888,705,981	919,915,879	905,386,636	905,386,636
(Loss) earnings per ADS (6 ordinary shares equal to 1 ADS)							
Basic	(2.58)	0.54	(1.56)	(0.24)	(1.92)	(1.02)	(0.12)
Diluted	(2.58)	0.42	(1.56)	(0.24)	(2.22)	(1.14)	(0.18)

* *Shares used in (loss) earnings per share/ADS computation were computed under weighted average method.*

VNET GROUP, INC.

RECONCILIATIONS OF GAAP AND NON-GAAP RESULTS

*(Amount in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Three months ended				Six months ended		
	June 30, 2022	March 31, 2023	June 30, 2023		June 30, 2022	June 30, 2023	
	RMB	*RMB*	*RMB*	*US$*	*RMB*	*RMB*	*US$*
Gross profit	357,777	352,380	342,749	47,267	713,298	695,129	95,863
Plus: depreciation and amortization*	362,003	401,877	400,173	55,186	689,396	802,050	110,608
Plus: share-based compensation expenses	(6,066)	–	–	–	(4,206)	–	–
Adjusted cash gross profit	713,714	754,257	742,922	102,453	1,398,488	1,497,179	206,471
Adjusted cash gross margin	*41.4%*	*41.8%*	*40.8%*	*40.8%*	*41.5%*	*41.3%*	*41.3%*
Operating expenses	(321,719)	(237,145)	(249,483)	(34,405)	(581,182)	(486,628)	(67,109)
Plus: share-based compensation expenses	53,551	8,336	8,006	1,104	94,936	16,342	2,254
Plus: compensation for postcombination employment in an acquisition	17,453	–	–	–	34,713	–	–
Adjusted operating expenses	(250,715)	(228,809)	(241,477)	(33,301)	(451,533)	(470,286)	(64,855)
Operating profit	36,058	115,235	93,266	12,862	132,116	208,501	28,754
Plus: depreciation and amortization*	385,876	432,629	433,735	59,815	735,485	866,364	119,477
Plus: share-based compensation expenses	47,485	8,336	8,006	1,104	90,730	16,342	2,254
Plus: compensation for postcombination employment in an acquisition	17,453	–	–	–	34,713	–	–
Adjusted EBITDA	486,872	556,200	535,007	73,781	993,044	1,091,207	150,485
Adjusted EBITDA margin	*28.2%*	*30.8%*	*29.4%*	*29.4%*	*29.5%*	*30.1%*	*30.1%*

* *Before the deduction of government grants for three months ended March 31, 2023, three months ended June 30, 2023 and six months ended June 30, 2023.*

VNET GROUP, INC.

CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS

*(Amount in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Three months ended			
	June 30, 2022	**March 31, 2023**	**June 30, 2023**	
	RMB	*RMB*	*RMB*	*US$*
CASH FLOWS FROM OPERATING ACTIVITIES				
Net (loss) income	(373,507)	103,573	(237,571)	(32,762)
Adjustments to reconcile net (loss) income to net cash generated from operating activities:				
Depreciation and amortization	385,876	431,654	433,015	59,715
Share-based compensation expenses	47,485	8,336	8,006	1,104
Others	447,480	62,631	357,787	49,341
Changes in operating assets and liabilities				
Accounts and notes receivable	(137,720)	(254,293)	8,388	1,157
Prepaid expenses and other current assets	526,090	(378,933)	70,627	9,740
Accounts and notes payable	76,070	(3,377)	33,434	4,611
Accrued expenses and other payables	21,363	192,063	(5,950)	(820)
Deferred revenue	19,989	24,139	(35,743)	(4,929)
Advances from customers	70,884	405,945	(114,977)	(15,856)
Others	(141,299)	(136,727)	(93,540)	(12,902)
Net cash generated from operating activities	942,711	455,011	423,476	58,399
CASH FLOWS FROM INVESTING ACTIVITIES				
Purchases of property and equipment	(527,867)	(608,717)	(394,812)	(54,447)
Purchases of intangible assets	(12,690)	(2,312)	(10,178)	(1,404)
Payments for investments	(38,280)	–	(655,815)	(90,441)
Proceeds from (payments for) other investing activities	208	(90,489)	9,295	1,282
Net cash used in investing activities	(578,629)	(701,518)	(1,051,510)	(145,010)
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds from bank borrowings	18,860	279,916	169,204	23,334
Repayments of bank borrowings	(43,275)	(73,070)	(55,865)	(7,704)
Repayments of 2025 Convertible Notes	–	–	(380,333)	(52,450)
Payments for finance lease	(75,145)	(84,882)	(67,172)	(9,263)
(Payments for) proceeds from other financing activities	(62,119)	395,096	285,013	39,305
Net cash (used in) generated from financing activities	(161,679)	517,060	(49,153)	(6,778)

VNET GROUP, INC.

CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS (CONTINUED)

*(Amount in thousands of Renminbi ("**RMB**") and US dollars ("**US$**"))*

	Three months ended			
	June 30, 2022	March 31, 2023	June 30, 2023	
	RMB	*RMB*	*RMB*	*US$*
Effect of foreign exchange rate changes on cash, cash equivalents and restricted cash	48,962	(17,205)	51,314	7,077
Net increase (decrease) in cash, cash equivalents and restricted cash	251,365	253,348	(625,873)	(86,312)
Cash, cash equivalents and restricted cash at beginning of period	3,364,890	2,989,494	3,242,842	447,208
Cash, cash equivalents and restricted cash at end of period	3,616,255	3,242,842	2,616,969	360,896

MANAGEMENT DISCUSSION AND ANALYSIS OF THE TARGET GROUP

For the years ended 31 December 2022, 2021 and 2020, the following management discussion and analysis of the results of the Target Company is extracted from TargetCo AR 2020, TargetCo AR 2021 and TargetCo AR 2022 together with supplement discussion and analysis on certain aspects prepared by the Company for the said periods based on the information available to the Company as at the Latest Practicable Date. For the six months ended 30 June 2023, the following management discussion and analysis of the results of the Target Company was prepared by the Company based on the Target Company's TargetCo Q2R 2023 and the information available to the Company as at the Latest Practicable Date.

The Directors wish to emphasize that the said extracts reproduced below are not prepared for incorporation into this circular and the Group has not participated in their preparation and the said discussions and analysis prepared by the Company included below were merely based on the TargetCo Published Reports, which were prepared in accordance with the US GAAP, and the information available to the Company as at the Latest Practicable Date. As such, the Directors do not express any view as to their truth, accuracy or completeness, and the Shareholders and investors should exercise caution and should not place undue reliance on such information.

A. MANAGEMENT DISCUSSION AND ANALYSIS OF THE RESULTS OF THE TARGET GROUP FOR THE YEAR ENDED 31 DECEMBER 2020

Unless otherwise indicated and except where the context otherwise requires, references in this annual report on Form 20-F to:

- "ADSs" refers to our American depositary shares, each representing six Class A ordinary shares, par value US$0.00001 per share;

- "21Vianet," "we," "us," "our company," and "our" refer to 21Vianet Group, Inc., its subsidiaries and its consolidated affiliated entities;

- "China" or the "PRC" refers to the People's Republic of China, excluding, for the purpose of this annual report only, Hong Kong, Macau and Taiwan;

- "Greater Bay Area" refers to Guangdong-Hong Kong-Macau Greater Bay Area, consisting of Guangzhou, Shenzhen, Zhuhai, Foshan, Dongguan, Zhongshan, Jiangmen, Huizhou, and Zhaoqing, as well as Hong Kong and Macau;

- "ordinary shares" or "shares" refer to our ordinary shares, which include all Class A ordinary shares, par value US$0.00001 per share, Class B ordinary shares, par value US$0.00001 per share, and Class C ordinary shares, par value US$0.00001 per share, collectively;

- "variable interest entities," or "VIEs," refer to Beijing Yiyun Network Technology Co., Ltd. (previously known as Beijing aBitCool Network Technology Co., Ltd.), or 21Vianet Technology, Beijing iJoy Information Technology Co., Ltd., or BJ iJoy, WiFire Network Technology (Beijing) Co., Ltd. (previously known as aBitcool Small Micro Network Technology (BJ) Co., Ltd.), or WiFire Network and Shanghai Zhiyan Yunwei Technology Co., Ltd., or SH Zhiyan, four domestic PRC companies in which we do not have equity interests but whose financial results have been consolidated into our consolidated financial statements in accordance with U.S. GAAP due to our having effective control over, and our being the primary beneficiary of, the four companies;

- "consolidated affiliated entities" refer to our variable interest entities and their direct and indirect subsidiaries; and

- "RMB" and "Renminbi" refer to the legal currency of China. Unless otherwise noted, all translations from RMB to U.S. dollars and from U.S. dollars to RMB in this annual report were made at a rate of RMB6.5250 to US$1.00, the exchange rate on December 31, 2020 as set forth in the H.10 statistical release published by the Federal Reserve Board.

Business Overview

We are a leading carrier-neutral and cloud-neutral data center services provider in China. We have one of the largest carrier-neutral data center networks in China with our 32 self-built data centers and 52 partnered data centers with an aggregate capacity of 53,553 cabinets under our management as of December 31, 2020. Our data centers are concentrated in tier-1 cities and their surrounding regions, which have favorable supply-demand dynamics, owing to dense internet traffic, scarce resources and high demand for data center facilities. We had a 10.6% market share in the carrier-neutral data center services market in terms of data center service revenues in 2019, according to Frost & Sullivan.

We are a pioneer in the carrier-neutral data center industry in China and commenced our operations in 1999. We are one of the first carrier-neutral data center services providers in China with infrastructure interconnected with various carrier networks, which connect and share data traffic to help scale the rapid development of the early internet industry in China. Based on our partnership with Microsoft to introduce Azure and Office 365 in China in 2013, we are also the first carrier-neutral data center services provider to offer global cloud services in China and our services have helped accelerate the digital transformation of our enterprise customers.

We offer managed hosting services to host our customers' servers and networking equipment and provide interconnectivity to improve the performance, availability and security of their internet infrastructure. We have adopted a "dual-core" strategy to address both retail and wholesale data center market opportunities. Our managed retail services provide different levels of services that are scalable to meet our customers' needs, from a single cabinet up to megawatt-scale deployments. Our managed wholesale services provide customers with new data center sites constructed and developed by us based on their specified standards. We believe that the scale of our data center footprint and networking assets as well as our carrier- and cloud-neutrality, position us well to capture the vast opportunities in the rapidly expanding market of internet and cloud computing infrastructure services in China.

In addition, we are a first mover among China's carrier-neutral data center service providers in offering cloud services through partnerships to cover public, private and hybrid cloud scenarios. We provide customized enterprise VPN services and solutions, including software-defined wide area network, or SD-WAN, to enterprises across various industries. These value-added services strengthen our capability to provide quality services and meet our customers' additional demands.

With a nationwide data center network and comprehensive service offerings, we have attracted a diversified and loyal customer base. As of December 31, 2020, we had approximately 1,300 customers for our managed hosting services and over 6,000 enterprise customers in total. We also enjoy long-standing relationships with our customers and have high customer retention, as evidenced by our low average monthly hosting churn rate for managed hosting services, which was 0.3%, 0.5% and 0.3% in 2018, 2019 and 2020, respectively.

Our Service Offerings

Through our quality data center network, we offer comprehensive hosting and related services, including:

- *Managed Hosting Services* consisting of managed retail services and managed wholesale services. Our managed retail services include (i) colocation services that dedicate data center space to house our customers' servers and networking equipment and provide tailored server administration services, (ii) interconnectivity services that allow customers to connect their servers with each other, internet backbones in China and other networks through our Border Gateway Protocol, or BGP, network, or our single-line, dual-line or multiple-line networks, and (iii) value-added services, including hybrid IT services, firewall services, server load balancing, data backup and recovery, data center management, server management, and backup server services. To address the wholesale IDC market opportunities, we established a "dual-core" strategy in 2019 to expand our services to managed wholesale services to China's internet giants and large-scale cloud computing service providers. We construct and deliver data centers based on these customers' required specifications and standards;

- *Cloud Services* that allow businesses to run their applications over the internet using our IT infrastructure rather than having the infrastructure on their own premises; and

- *VPN Services* that extend customers' private networks by setting up secure and dedicated connections through the public internet.

Our data centers host the servers of our customers and meet their needs to deploy computing, network, storage and IT infrastructure. Our services are scalable, allowing our customers to purchase space and power and upgrade connectivity and services as their requirements evolve. In addition, our customers benefit from our data centers' wide range of physical security features, including sensitive smoke detection systems, fire suppression systems, secured access, around-the-clock video camera surveillance and security breach alarms. Our data centers are fully-redundant and feature resilient power supplies, energy efficient design, connection with multiple network providers and 24/7 on-site support provided by our skilled engineers. As a result, we are able to provide service-level agreement for 99.99% uptime for power for our self-built data centers. As a carrier-neutral data center service provider, we provide high interconnectivity to our customers with our access to multiple carriers and service providers and the availability of multiple-provider bandwidth. By securing multiple suppliers for connectivity and using redundant hardware, we are able to guarantee 99.9% internet connectivity uptime for our self-built data centers.

Managed Hosting Services

We have been providing managed retail services since the inception of our operations in 1999 and started to provide managed wholesale services in 2019 to implement our "dual-core" strategy that we developed in 2019.

Managed Retail Services. Our managed retail services include colocation services, interconnectivity services, and value-added services.

- *Colocation Services* allow customers to lease partial or entire cabinets for their servers. Our customers have full control over their server(s) housed in our data centers. Depending on customer needs, we provide different levels of tailored server administration services, including operating system support and assistance with updates, server monitoring, server backup and restoration, server security evaluation, firewall services, and disaster recovery. Our customers' servers are housed in our data centers providing redundant power sources and heating, ventilating and air conditioning systems. Our colocation services relieve customers from the daily pressures of IT infrastructure maintenance so that they can focus on their core businesses. Customers have the option to either place their servers and equipment in standard cabinets dedicated for their private use, or in cabinets shared with other customers. They can customize their cabinet space for their servers, network connections and equipment. Customers can elect to buy the hardware that they place within their cabinets from their chosen suppliers. In addition, customers can also lease power-enabled blank space, where they can place their own cabinets in our data centers or use our services to build their customized cabinet space.

- *Interconnectivity Services* are provided by us in the following ways:

  - Border Gateway Protocol (BGP) Network Services. We provide network services that use BGP routing protocol and policies, which allow the internet to become a decentralized system and thereby reduces traffic congestion and data transmission time;

  - Single-line Network Services. Some of our customers choose to connect their servers only to one telecommunication carrier in China. Based on their selections, we provide them with network connection to the major telecommunication carriers, including China Telecom, China Unicom and China Mobile; and

  - Multiple-line Network Services. As a carrier-neutral service provider, our data centers are connected to all carrier and non-carrier networks in China. Customers then may choose to connect their servers to two or multiple networks, which provides more cost-effective internet access and ensures better business continuity. Our interconnectivity services connect our customers with each other, connect our data centers with telecommunication carriers' backbone network and other networks. We provide cross-connection services to our customers. Upon the request of the customers, we utilize single or multi-mode fibers to create links between the customers directly and privately.

- *Value-Added Services* are provided by us in the following ways:

  - Hybrid IT Services. Our hybrid IT services provide customers with a complete package of infrastructure service offerings, conveniently bundled to expedite the customer's process to launch their applications and products to the extent possible. In conjunction with our infrastructure-as-a-service, or IaaS, platform, hybrid IT services combine colocation, servers, connectivity, storage and customer services to save IT infrastructure installation time, and provide a complete, reliable, and secured environment for customer's IT demands. As more customers move their IT resources to the cloud, our cloud-neutral platform will enable our hybrid IT services to provide both private and public cloud services as well as their inter-linked connections;

  - Private and Hybrid Cloud Services. We provide private cloud, hybrid cloud and multi-cloud managed services to address enterprises' needs in aspects of data sovereignty, cost of ownership, and customization through our proprietary technologies and technical integration with selected partners, such as VMWare, Redhat and ZStack; and

- Other Value-Added Services. To complement our hosting services and enhance our customers' experiences, we also provide other value-added services, including bare metal services, firewall services, server load balancing, data backup and recovery, data center management, server management, and backup server services. In addition, we also provide customers with traffic charts and analysis, gateway monitoring for servers, domain name system setup, defense mechanism against distributed denial of service (DDOS) attacks, basic setting of switches and routers, and virus protections.

Managed Wholesale Services. Our managed wholesale services started in 2019 and provide internet giants and large-scale cloud computing service providers with new data center sites constructed and developed by us. Based on the specific requirements of our customers, we source properties for new data center sites by acquiring or leasing green-field sites or existing industrial buildings from third parties, and then design and, through cooperation with developers, contractors, and suppliers, build the data center facilities with advanced design and high technical specifications. From October 2019 to June 2020, we signed seven memoranda of understandings with Alibaba to construct and deploy Alibaba's data center facilities in Eastern China. As of December 31, 2020, the total capacity commitment from our wholesale customers reached 170 megawatts. We believe our core competency and capabilities, acquired from decade of industry experience in the retail segment, are also applicable and critical when we expand our business into the wholesale segment and develop wholesale data centers.

- *Planning:* We engage with our clients from the site selection and planning stage and choose the sites for wholesale data centers at the strategic locations which fits into our clients' IT infrastructure deployment and provides great access to power and connectivity. Backed by multi-year experience and strong presence in key markets, we are able to conduct in-depth analysis and select the most suitable location based on clients' requirements by acquiring or leasing green-field sites or existing industrial buildings from third parties. Our team works closely with local government authorities to obtain necessary permits and approvals and with electric utilities to obtain sufficient power supply. We also actively cooperate with telecommunication carriers to ensure multi-carrier connectivity to our wholesale data centers.

- *Design:* Leveraging our technological know-how from our internal design teams and a comprehensive data center product portfolio, developing and accumulating through the designs and construction of retail data centers, we are dedicated to ensuring that each of our wholesale data centers meets the specific requirements of our clients and achieves industry leading energy efficiency and operating performance. Our technology strengths, such as advanced cooling technology and power management technology, are integrated due to close collaboration among our internal design team, research and development team and external design institutes.

- *Construction:* We believe our well-established relationships with high quality contractors and suppliers, combined with our specialized construction team consisting of experienced professionals, help us to ensure fast delivery and cost effectiveness in data center construction. As opposed to retail data centers, typically the wholesale data centers are built to suit and customized to fulfill our clients' different technical requirements. Furthermore, our clients require us to deliver wholesale data centers in large volumes within a prescribed construction period.

- *Operations:* We are one of the first carrier neutral data center services providers in China and commenced operations in 1999. Since then, we haven't encountered any disastrous accident over the last 20 years, demonstrating our strong operational expertise. We are able to provide service-level agreement for 99.99% uptime for power and 99.9% uptime for network connectivity for our self-built data centers. Our operational excellence to deliver wholesale data centers with high reliability, availability, security and manageability are sought by our wholesale clients. As a result, operations and management expertise becomes an increasingly important criteria when they select their data center partners.

Cloud Services

We started providing public cloud services in 2013 through our cooperation with Microsoft. Under our cooperation arrangement with Microsoft, we provide Microsoft's cloud services, including Azure, Office 365, Dynamics 365 and Power Platform, to customers in mainland China by entering into service agreements with such end customers.

We provide IaaS, platform-as-a-service, and software-as-a-service, or SaaS, to our enterprise and individual end customers on the public cloud. Microsoft Azure provides our customers with a one-stop shop to purchase a portion of the pooled computing resources, control the applications uploaded to the virtual servers and/or access to the applications run by various operators on the cloud infrastructure, and pay on an on-demand basis. Through Office 365 services, we provide our customers with not only the complete Office applications, but also business-class email, file sharing and HD video conferencing, all working together and connected in the public cloud so that customers can have access to everything they need to run their business from anywhere.

The total customer billing amounts are divided between Microsoft and us and we retain a portion of the total customer billing amounts based on the agreed-upon metrics. All sales amounts from our services to customers are deposited into an escrow account which are jointly administered by Microsoft and us and we settle the payments to Microsoft on a monthly basis. In addition, we are entitled to receive incentive payments from Microsoft upon the completion of certain sales or services conditions. Our current agreement with Microsoft has a term of ten years till 2027.

VPN Services

We offer VPN services, primarily through Dermot Holdings Limited and its subsidiaries, or Dermot Entities, which we acquired in August 2014. Dermot Entities offer customers best-in-class, enterprise-grade network services in numerous cities throughout Greater China and the wider Asia-Pacific region. Dermot Entities provide enterprise network solutions including Multiprotocol Label Switching (MPLS) and Software-Defined WAN (SD-WAN), internet access and network security solutions and are starting to add Cloud & SaaS solutions into the product portfolio. We provide fully managed network enabling connectivity with over 70 POPs across Asia. We are among the first official members of the China Cross-border Data Telecommunications Industry Alliance for being recognized as legally compliant by China's Communications Administration. Additionally, we have been appointed as one of the SD-WAN Services Standard Drafting Units of China Communications Standards Association ("**CCSA**"). We are among the first ICT service providers in Greater China to obtain several ISO international certifications including ISO/IEC 27001: 2013, ISO/IEC 20000-1: 2018, and ISO 9001: 2015 for information security, IT service management, and quality management, respectively. We also obtained the SD-WAN Ready certificate for overall solutions issued by China Academy of Information and Communications Technology in 2020.

Our Infrastructure

Our infrastructure, which consists of our data centers and data transmission network, is the foundation upon which we provide services to our customers. As of December 31, 2020, we operate 32 self-built data centers and 52 partnered data centers located in tier-1 and their surrounding cities, including all of China's major internet hubs, with 53,553 cabinets under management. Our extensive network, consisting of 165 POPs, is a "high-speed internet railway" that connects our data centers with each other and links them to China's telecommunication backbones.

Our Data Centers

We operate two types of data centers: self-built and partnered. We define "self-built" data centers as those with our owned cabinets, and data center equipment housed in buildings we owned, leased from third parties, or we purchased from third parties. We define "partnered" data centers as the data center space and cabinets we leased from China Telecom, China Unicom and other third parties through agreements. As of December 31, 2020, we operate 32 self-built data centers housing 49,876 cabinets and 52 partnered data centers housing 3,677 cabinets.

The table below sets forth the number of data centers and cabinets under our management as of December 31, 2018, 2019 and 2020, respectively.

	As of December 31,		
	2018	**2019**	**2020**
Data Centers			
Self-built	20	26	32
Partnered	38	51	52
Total	58	77	84
Cabinets			
Self-built	25,711	32,047	49,876
Partnered	4,943	4,244	3,677
Total	30,654	36,291	53,553

Our data centers are located in over 20 cities as of the date of this annual report. Our nationwide network of data centers not only enables us to serve customers in extended geographic areas, but also establishes a national data transmission network that sets up connections among carriers and service providers in various locations.

The table below sets forth our portfolio of self-built data centers in service as of December 31, 2020.

	As of December 31, 2020	
	Number of Self-built Data Centers	Cabinets Housed
Beijing	13	Approximately 22,900
Shanghai and Hangzhou	7	Approximately 9,800
Greater Bay Area	5	Approximately 9,300
Satellite cities[1]	2	Approximately 4,350
Others	5	Approximately 3,500
Total	32	Approximately 49,850

(1) Refer to smaller cities that are adjacent to Beijing, Shanghai, Hangzhou and Greater Bay Area.

We build and operate our data centers in compliance with high industry standards in order to provide our customers with secure and reliable environments that are necessary for optimal internet interconnectivity. Our data centers generally feature:

- *Resilient Power* – Redundant, high-capacity and stable power supplies, backed by uninterruptible power supply, or UPS, high-performance batteries and diesel generators;

- *Physical Security* – Round-the-clock monitoring by on-site personnel, which includes verification of all persons entering the building, security barriers, video camera surveillance and security breach alarms;

- *Controlled Access* – Access to the buildings, data floors and individual areas designated for particular customers via individually-programmed access cards and visual identification;

- *Fire Detection and Suppression* – Sensitive smoke detectors linked to building management systems provide early detection to help avoid fire, loss and business disruption. These are complemented by an environmentally-friendly gas-based or water mist fire suppression system to put out fires;

- *Air Conditioning* – To ensure optimal performance and avoid equipment failure, all data center floors are managed to make sure that customers' equipment is maintained at a controlled temperature and humidity; and

- *24/7 Support* – We staff our data centers with capable and experienced service teams and we believe we were the first data center service provider in China to offer 24/7 customer service.

These features minimize chances of interruption to the servers housed in our data centers and ensure the business continuity of our customers. In addition, we believe we were the first data center service provider in China to receive both the ISO 9001 quality system certification by the American Registrar Accreditation Board and a certification by the United Kingdom Accreditation Service.

In March 2017, we signed an investment agreement with Warburg Pincus to establish a multi-stage joint venture and build a digital real estate platform in China. The cooperation was expected to allow us to reduce capital expenditures as Warburg Pincus will take primary responsibilities to build new wholesale data centers. In July 2019, we reached a supplemental agreement with Warburg Pincus to restructure the partnership. Pursuant to the agreed restructuring arrangement, one of the joint ventures has distributed its assets and projects to us and to Princeton Digital Group (PDG), a Warburg Pincus-backed company, on a pro rata basis in principle, respectively. After distribution, we obtained 100% ownership of a project under development in the Shanghai Waigaoqiao Free Trade Zone, as well as a certain amount of cash. In addition, we and Warburg Pincus have (i) adjusted the existing holding structure for operating the current projects, and (ii) jointly established an additional holding vehicle for sourcing and developing new projects in China. All the projects under our cooperation with Warburg Pincus are operated at our self-built data centers.

Our Network

Our network transmits data and directs internet traffic, forming an internet highway system that is linked to the networks of major carriers, non-carriers and ISPs and enhances communications among our data centers, our customers and end users located throughout China and around the world. As of December 31, 2018, 2019 and 2020, our network connected 172, 165 and 165 POPs throughout China.

Our network also features numerous interfaces with four telecommunication carriers in China, which are China Telecom, China Unicom, China Mobile and China Education Network. Our network is not only connected to the headquarters of each carrier, but also with their local networks throughout China.

Due to our high-quality data center infrastructure, extensive data transmission network and proprietary smart routing technologies, we are able to deliver high-performance hosting and related services that can effectively meet our customers' business needs, improve interconnectivity among service providers and end users, and effectively address the issue of inadequate network interconnectivity in China.

Organizational Development

Our employees are our most important asset. We provide our employees with career development programs including training course for new joiners, entry level employee and middle level team leaders. In 2020, more than two thousand of our employees have participated in our training programs, recording a total of approximately 50,000 training hours. In addition, we encourage and support employees to obtain external certificates to improve their skills and competitiveness.

We also care about our employees' wellbeing. We provide a multitude of benefits to our employees and their family members, such as supplementary medical insurance, maternity rooms for female employees and regular sports activities.

OPERATING AND FINANCIAL REVIEW AND PROSPECTS

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our consolidated financial statements and the related notes included elsewhere in this annual report on Form 20-F. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth in other parts of this annual report on Form 20-F.

A. Operating Results

Overview

We are a leading carrier-neutral and cloud-neutral data center services provider in China. We have one of the largest carrier-neutral data center networks in China with our 32 self-built data centers and 52 partnered data centers with an aggregate capacity of 53,553 cabinets under our management as of December 31, 2020.

We offer managed hosting services to host our customers' servers and networking equipment and provide interconnectivity to improve the performance, availability and security of their internet infrastructure. We also provide cloud services through partnerships to cover public, private and hybrid cloud scenarios. In addition, we provide customized enterprise VPN services and solutions, including SD-WAN, to enterprises across various industries. These value-added services strengthen our capability to provide quality services and meet our customers' additional demands.

We historically provided managed network services, consisting of CDN services, hosting area network services, route optimization and last-mile broadband services. In September 2017, we disposed of 66.67% of the equity interests in six wholly-owned subsidiaries engaged in the managed network services business, collectively referred as to the WiFire Entities. In September and December 2017, we disposed of all of our equity interests and shares in Sichuan Aipu Network Co., Ltd. and its affiliates, collectively referred as the Aipu Group, engaged in the last-mile broadband business. As a result of these transactions, we deconsolidated the financial results related to the managed network services business from our consolidated statements of operations starting from the fourth quarter of 2017.

Our total net revenues generated from providing hosting and related services increased from RMB3,401.0 million in 2018 to RMB3,789.0 million in 2019 and further to RMB4,829.0 million (US$740.1 million) in 2020, representing a CAGR of 19.2% from 2018 to 2020. The total number of cabinets under our management increased from 30,654 as of December 31, 2018, 36,291 as of December 31, 2019 and further to 53,553 as of December 31, 2020. Our average monthly recurring net revenues from hosting and related services increased from RMB275.4 million in 2018 to RMB289.1 in 2019 and further to RMB374.0 million (US$57.3 million) in 2020. We recorded a net loss of RMB186.7 million, RMB181.2 million and RMB2,680.3 million (US$410.8 million) in 2018, 2019 and 2020, respectively, which reflected share-based compensation expenses of RMB59.5 million, RMB43.9 million and RMB136.8 million (US$21.0 million), respectively. Our results of operations also reflect the effects of our acquisitions and dispositions during the respective periods.

Factors Affecting Our Results of Operations

Our business and results of operations are generally affected by the development of China's data center services market, which has grown rapidly in recent years. According to Frost & Sullivan, the total revenue of China's data center services market increased from RMB47.3 billion in 2015 to RMB75.3 billion in 2019, representing a CAGR of 12.3%, and is expected to grow at a CAGR of 9.5% from 2019 to 2024, reaching RMB118.8 billion by 2024. However, any adverse changes in the data center services market in China may harm our business and results of operations.

While our business is generally influenced by factors affecting the data center services market in China, we believe that our results of operations are more directly affected by company-specific factors, including the number of cabinets under management and cabinet utilization rate, monthly recurring revenues and churn rate, pricing, growth in complementary markets and optimization of our cost structure.

Number of Cabinets under Management and Cabinet Utilization Rate

Our revenues are directly affected by the number of cabinets under management and the utilization rates of these cabinet spaces. We had 30,654, 36,291 and 53,553 cabinets under management as of December 31, 2018, 2019 and 2020, respectively. Our annualized average monthly cabinet utilization rates were 70.6%, 66.0% and 61.2% in 2018, 2019 and 2020, respectively. We calculate the average monthly cabinet utilization rate in a given period by dividing the sum of the number of billable cabinets as of the end of each month during the period by the sum of the number of cabinet capacity as of the end of each month during the same period. Our average monthly cabinet utilization rate fluctuates due to the continuous changes in both the amount of our billable cabinets and average cabinet capacity. Our future results of operations and growth prospects will largely depend on our ability to increase the number of cabinets under management while maintaining optimal cabinet utilization rate.

With the rapid growth of China's internet industry, demand for cabinet spaces has increased significantly and we do not always have sufficient self-built data center capacity to meet such demand. It usually takes twelve to eighteen months to build a data center together with cabinets and equipment installed. To meet our customers' immediate demand, we partner with China Telecom, China Unicom or other parties and lease cabinets from them. Due to the time needed to build data centers and the long-term nature of these investments, if we overestimate the market demand for cabinets, it will lower our cabinet utilization rate and negatively affect our results of operations.

Monthly Recurring Revenues and Churn Rate

Our average monthly recurring revenues and churn rate directly affect our results of operations. Our hosting and related services are based on a recurring revenue model. We consider these services recurring as we generally bill our customers and recognize revenues on a fixed and recurring basis each month during the terms of our service contracts with them, generally ranging from one to three years. Our non-recurring revenues are primarily comprised of fees charged for installation services, additional bandwidth used by customers beyond the contracted amount and other value-added services. These services are considered to be non-recurring as they are billed and recognized over the period of the customer service agreement.

We use "monthly recurring revenues" to measure the revenues we recognize from our managed hosting services on a recurring basis each month. In 2018, 2019 and 2020, our recurring revenues were consistently over 90% of our net revenues. Our average monthly recurring revenues from hosting and related services were RMB275.4 million, RMB289.1 million and RMB374.0 million (US$57.3 million) in 2018, 2019 and 2020. Our average monthly recurring revenues per cabinet for managed retail services was RMB8,258, RMB8,747 and RMB8,984 (US$1,377) for the year ended December 31, 2018 and 2019 and 2020.

We use the churn rate to measure the reduction of monthly revenues that is attributable to the termination of customer contracts as a percentage of total monthly recurring revenues of the previous month. Our average monthly churn rate for our managed hosting services was 0.3% in 2018, 0.5% in 2019 and 0.3% in 2020.

Pricing

Our results of operations also depend on the price level of our services. Due to the quality of our services and our optimized interconnectivity among carriers and networks, we are generally able to command premium pricing for our services. Nonetheless, because we are generally regarded as a premium data center and network service provider, many customers only place their mission critical servers and equipment, but not other non-critical functions, in our data centers. As we try to acquire more business from new and existing customers, expand into new markets, or try to adapt to changing market conditions, we may need to lower our prices or provide other incentives to compete effectively.

Growth in New and Complementary Markets

Our results of operations also depend on the growth of our cloud service business and VPN service business that complement our core managed hosting service business.

Cloud services, largely through our partnerships with Microsoft and other cloud service providers, have continually contributed to our results of operations since 2013. While our cloud computing platforms are now supporting a significant number of customers, we believe the cloud computing market in China is still in its early stages. Key factors for growth in this market include signing up services from new customers, improving utilization rates of cloud computing resources with existing customers introducing well-developed applications to improve cloud computing adoption rates, and partnering with more cloud providers to offer a comprehensive cloud-neutral platform.

As one of the largest enterprise VPN service providers in the Asia Pacific region, we have experienced and expect continual growth in this market to meet customers' growing demand for enterprise-grade VPN services with secure, dedicated connections. Key growth drivers include adding new customers, increasing the number of connections with existing customers and realizing revenue synergies with our other business groups.

Our Cost Structure

Our ability to maintain and improve our gross margins depends on our ability to effectively manage our cost of revenues, which consist of telecommunications costs and other data center related costs. Telecommunications costs consist of (i) expenses associated with acquiring bandwidth and related resources from carriers for our data centers, and (ii) rentals, utilities and other costs in connection with the cabinets we lease from our partnered data centers. Other data center related costs include utilities and rental expenses for our self-built data centers, employee payroll, depreciation and amortization of our property and equipment, and other related costs. The changes in these costs usually reflect the changes in the number of cabinets under management and our headcount.

The mix of self-built data centers and partnered data centers also affects our cost structure. The gross margin for cabinets located in our partnered data centers is generally lower than that of cabinets located in our self-built data centers. This is because telecommunication carriers who lease cabinet spaces to us for our partnered data centers typically demand a profit on top of their costs in connection with the leasing of cabinet spaces to us. We plan to continue to lease data centers from such carriers or purchase data center facilities to meet the immediate market demand while building new or expanding existing our self-built data centers in Beijing, Shanghai, Shenzhen, Guangzhou, Yangtze Delta, and the Greater Bay Area. If we cannot effectively manage the market demand and increase the number of cabinets located in self-built data centers relative to partnered data centers, we may not be able to improve our gross margins.

Impact of the COVID-19 Pandemic on Our Business

The COVID-19 pandemic has not interrupted or affected the operation of our existing data centers or ability to provide our data center services to our customers. We had temporary suspensions of our sales and marketing activities, construction activities and business travel to ensure the safety and health of our employees in January and February of 2020. Since March 2020, these activities began returning to normal levels, and by the end of the second quarter of 2020 had largely returned to normal levels. If the COVID-19 pandemic resurges or results in governmental or other measures that affect logistics, travel and construction activity, any measures we may be required to adopt may impact our construction and development activities with respect to data centers under construction and under development, and our ability to increase our capacity according to schedule could be negatively affected. The ongoing COVID-19 pandemic could materially and adversely affect our business, results of operations and financial condition. We have experienced slower cash collection for administrative reasons as a result of the COVID-19 pandemic, unrelated to our customers' ability to pay, which has resulted in an increase in our accounts receivable. See the section titled "Operating and Financial Review and Prospectus – Financial Information – Liquidity and Capital Resources – Operating Activities." While the COVID-19 pandemic has not materially or adversely affected our business, results of operations or financial condition, whether the pandemic will have any such material or adverse impact on us going forward will depend on future developments, which are highly uncertain and cannot be predicted. As of the date of this document, we are not aware of any material or adverse effect on our financial condition as a result of the COVID-19 pandemic.

Key Components of Results of Operations

Starting in 2016, we began reporting our operating results in two operating segments, namely hosting and related services and managed network services. CDN services, which were previously offered as part of our hosting and related services business segment, were moved to our managed network services business segment in the fourth quarter of 2016. Our consolidated statements of operations for the year ended December 31, 2016 as presented in this annual report were modified to reflect this new presentation for consistency purposes.

In September 2017, we completed the disposal of the managed network services business segment, including CDN services, hosting area network services, route optimization business and last-mile broadband business, and deconsolidated the financial results related to the managed network services business segment in our consolidated financial statements starting from the fourth quarter of 2017.

Net Revenues

The following table sets forth our net revenues for the years presented:

	For the Years Ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*USD*
	(in thousands, except percentages)			
Net revenues	3,401,037	3,788,967	4,829,019	740,080

We provide retail managed hosting services to house our customers' servers and networking equipment in our data centers, and wholesale managed hosting services to deliver customized data center sites to our customers based on their unique requirements. We also provide cloud services and VPN services as part of our hosting and related services business. Since the completion of the disposal of the managed network services in September 2017, we have generated all of our revenues from the hosting and related services business.

The contracts with our wholesale customers generally have terms ranging from eight to ten years. The contracts with our retail customers generally have terms ranging from one to three years and most of these contracts have an automatic renewal provision. Our customers are generally billed on a monthly basis according to the services used in the previous month.

Cost of Revenues

Our cost of revenues primarily consists of telecommunications cost, and other costs. The following table sets forth, for the periods indicated, our cost of revenues, in absolute amounts and as a percentage of our total net revenues:

	For the Years Ended December 31,						
	2018		2019		2020		
	RMB	*%*	*RMB*	*%*	*RMB*	*USD*	*%*
	(in thousands, except percentages)						
Cost of revenues:							
Telecommunications costs	1,332,280	39.2	1,570,825	41.5	2,092,887	320,749	43.3
Others	1,123,886	33.0	1,278,693	33.7	1,660,121	254,425	34.4
Total cost of revenues	2,456,166	72.2	2,849,518	75.2	3,753,008	575,174	77.7

Telecommunications costs refer to expenses incurred in acquiring telecommunication resources from carriers for our data centers, including bandwidth and cabinet leasing costs. Cabinet leasing costs cover rentals, utilities and other costs associated with the cabinets we lease from our partnered data centers. Our other costs of revenues include utilities costs for our self-built data centers, depreciation and amortization, employee payroll and other compensation costs and other miscellaneous items related to our service offerings.

We expect that our cost of revenues of hosting and related services will continue to increase as our business expands, both organically and as a result of acquisitions.

Operating Expenses

Our operating expenses consist of sales and marketing expenses, general and administrative expenses and research and development expenses. The following table sets forth our operating expenses, both as an absolute amount and as a percentage of total net revenues for the periods indicated.

	For the Years Ended December 31,						
	2018		2019		2020		
	RMB	*% Net of Revenues*	*RMB*	*% Net of Revenues*	*RMB*	*USD*	*% Net of Revenues*
	(in thousands, except percentages)						
Operating expenses:							
Sales and marketing expenses[(1)]	172,176	5.1	206,309	5.4	235,012	36,017	4.9
Research and development expenses[(1)]	92,109	2.7	88,792	2.3	112,891	17,301	2.3
General and administrative expenses[(1)]	462,637	13.5	415,277	11.0	535,111	82,009	11.1
Reversal/(allowance) for doubtful debt	(598)	(0.0)	1,557	0.0	2,393	367	0.1
Changes in the fair value of contingent purchase consideration payable	(13,905)	(0.4)	–	–	–	–	–
Impairment of receivables from equity investees	–	–	52,142	1.4	–	–	–
Impairment of long-lived assets	–	–	–	–	81,619	12,509	1.7
Other operating income	(5,027)	(0.1)	(6,862)	(0.1)	(7,619)	(1,168)	(0.2)
Total operating expenses[(1)]	707,392	20.8	757,215	20.0	959,407	147,035	19.9

Note:

(1) Includes share-based compensation expense as follows:

	For the Years Ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
		(in thousands)		
Allocation of share-based compensation expenses:				
Sales and marketing expenses	2,139	354	38,247	5,862
Research and development expenses	1,385	1,177	634	97
General and administrative expenses	53,346	40,501	82,672	12,670
Total share-based compensation expenses	56,870	42,032	121,553	18,629

Sales and Marketing Expenses

Our sales and marketing expenses primarily consist of compensation and benefit expenses for our sales and marketing staff, including share-based compensation expenses, as well as advertisement and agency service fees. Our sales and marketing expenses also include office-related expenses and business development expenses associated with our sales and marketing activities. To a lesser extent, our sales and marketing expenses include depreciation of equipment used associated with our selling and marketing activities.

Research and Development Expenses

Our research and development expenses primarily include salaries, employee benefits, share-based compensation expenses and other expenses incurred in connection with our technological innovations, such as our proprietary smart routing technology and cloud computing infrastructure service technologies. We anticipate that our research and development expenses will continue to increase as we devote more resources to develop and improve technologies, improve operating efficiencies and enhance our service offerings.

General and Administrative Expenses

Our general and administrative expenses primarily consist of compensation and benefits paid to our management and administrative staff, including share-based compensation expenses, the cost of third-party professional services, and depreciation and amortization of property and equipment used in our administrative activities. Our general and administrative expenses, to a lesser extent, also include office rent, office-related expenses, and expenses associated with training and team building activities. We expect that our other general and administrative expense items, such as salaries paid to our management and administrative staff as well as professional services fees, will increase as we expand our business, both organically and as a result of acquisitions.

Share-Based Compensation Expenses

We recorded share-based compensation expenses in connection with share options and RSUs granted under our 2010 Plan, 2014 Plan and 2020 Plan. As of April 13, 2021, options to purchase 492,864 ordinary shares and 4,344,504 RSUs have been granted to our employees, directors and consultants. We recorded share-based compensation expenses in the amount of RMB56.9 million, RMB42.0 and RMB121.6 million (US$18.6 million) for the year ended December 31, 2018, 2019 and 2020, respectively, in connection with our share-based incentive grants.

Taxation

The Cayman Islands

The Cayman Islands currently does not levy taxes on individuals or corporations based upon profits, income, gains or appreciation and there is no taxation in the nature of inheritance tax or estate duty. There are no other taxes likely to be material to our company levied by the government of the Cayman Islands, except for stamp duties that may be applicable on instruments executed in, or after execution brought within the jurisdiction of, the Cayman Islands. The Cayman Islands is not a party to any double taxation treaties that are applicable to any payments made to or by our company. There are no exchange control regulations or currency restrictions in the Cayman Islands. Additionally, upon payments of dividends by our company to the shareholders, no Cayman Islands withholding tax will be imposed.

The British Virgin Islands

The Company and all dividends, interest, rents, royalties, compensation and other amounts paid by the Company to persons who are not resident in the BVI and any capital gains realized with respect to any shares, debt obligations, or other securities of the Company by persons who are not resident in the BVI are exempt from all provisions of the Income Tax Ordinance in the BVI.

No estate, inheritance, succession or gift tax, rate, duty, levy or other charge is payable by persons who are not resident in the BVI with respect to any shares, debt obligation or other securities of the Company.

All instruments relating to transfers of property to or by the Company and all instruments relating to transactions in respect of the shares, debt obligations or other securities of the Company and all instruments relating to other transactions relating to the business of the Company are exempt from payment of stamp duty in the BVI. This assumes that the Company does not hold an interest in real estate in the BVI.

There are currently no withholding taxes or exchange control regulations in the BVI applicable to the Company or its members.

Hong Kong

Subsidiaries in Hong Kong are subject to Hong Kong profits tax rate of 16.5% for the years ended December 31, 2018, 2019 and 2020. They may be exempted from income tax on their foreign-derived income and there are no withholding taxes in Hong Kong on remittance of dividends.

Taiwan

DYX Taiwan branch is incorporated in Taiwan and is subject to Taiwan profits tax rate of 20%, 20% and 20% for the years ended December 31, 2018, 2019 and 2020, respectively.

The PRC

The Company's PRC subsidiaries are incorporated in the PRC and subject to the statutory rate of 25% on the taxable income in accordance with the Enterprise Income Tax Law, or the EIT Law, which was effective on January 1, 2008 and amended on December 29, 2018, except for certain entities eligible for preferential tax rates.

Dividends, interests, rent or royalties payable by the Company's PRC subsidiaries to any non-PRC resident enterprise and proceeds from any such non-PRC resident enterprise investor's disposition of assets (after deducting the net value of such assets) are subject to a 10% withholding tax, unless the corresponding non-PRC resident enterprise's jurisdiction of incorporation has a tax treaty or arrangement with China that provides a reduced withholding tax rate or an exemption from withholding tax.

21Vianet Beijing was qualified as a High and New Technology Enterprise, or HNTE, since 2008 and is eligible for a 15% preferential tax rate. In October 2014, 21Vianet Beijing obtained a new certificate and renewed the certificate in October 2017 and 2020, with a validity term of three years. In accordance with the PRC Income Tax Law, an enterprise awarded with the HNTE certificate may enjoy a reduced EIT rate of 15%. For the years ended December 31, 2018, 2019 and 2020, the tax rate for 21Vianet Beijing was 15%, 15% and 15%, respectively.

In April 2011, Xi'an Sub, a subsidiary of 21Vianet Beijing located in Shaanxi Province, was qualified for a preferential tax rate of 15% and started to apply this rate from then on. The preferential tax rate is awarded to companies that are located in West Regions of China which operate in certain encouraged industries. For the years ended December 31, 2018, 2019 and 2020, the tax rate assessed for Xi'an Sub was 15%, 15% and 15%, respectively.

In 2013, BJ iJoy was qualified as a software enterprise, which makes it eligible for exemption of the enterprise income tax for the years ended December 31, 2013 and 2014 and a half-reduced enterprise income tax for the years ended December 31, 2015, 2016 and 2017. For the years ended December 31, 2018, 2019 and 2020 and BJ iJoy was subject to the statutory rate of 25% for the taxable income.

In October 2015, SH Blue Cloud, a subsidiary located in Shanghai, was qualified for a HNTE and became eligible for a 15% preferential tax rate. The HNTE certificate has been renewed in November 2018, with a validity term of three years. For the years ended December 31, 2018, 2019 and 2020, SH Blue Cloud enjoyed a preferential tax rate of 15%.

In November 2016, SZ DYX, a subsidiary located in Guangdong Province, was qualified for a HNTE and became eligible for a 15% preferential tax rate effective for three consecutive years. The HNTE certificate has been renewed in November 2019, with a validity term of three years. For the years ended December 31, 2018, 2019 and 2020, SZ DYX enjoyed a preferential tax rate of 15%.

The EIT Law also provides that enterprises established under the laws of foreign countries or regions and whose "place of effective management" is located within the PRC are considered PRC tax resident enterprises and subject to PRC income tax at the rate of 25% on worldwide income. The definition of "place of effective management" refers to an establishment that exercises, in substance, overall management and control over the production and business, personnel, accounting, properties, etc. of an enterprise. As of December 31, 2020, the administrative practice associated with interpreting and applying the concept of "place of effective management" is unclear. If the Company is deemed as a PRC tax resident, it will be subject to PRC income tax at the rate of 25% on its worldwide income under the EIT Law, meanwhile the dividends it receives from another PRC tax resident company will be exempted from 25% PRC income tax. The Company will continue to monitor changes in the interpretation or guidance of this law.

PRC VAT. In November 2011, the Ministry of Finance and the State Administration of Taxation jointly issued two circulars setting out the details of the pilot value-added tax, or VAT, reform program, which changed the charge of sales tax from business tax to VAT for certain pilot industries. The pilot VAT reform program initially applied only to the pilot industries in Shanghai, and was expanded to eight additional regions, including, among others, Beijing and Guangdong province, in 2012. In August 2013, the program was further expanded nationwide. In May 2016, the program was expanded to cover additional industry sectors such as construction, real estate, finance and consumer services. In November 2017, PRC State Counsel issued State Counsel Order 691 to abolish business tax, and issued the amendment to Interim Regulations of PRC Value Added Taxes, or the VAT Regulation, pursuant to which enterprises and individuals that (i) sell goods or labor services of processing, repair or replacement of goods, (ii) sell services, intangible assets, or immovables, or (iii) import goods within the territory of the PRC are subject to VAT.

Effective from September 2012, all services provided by 21Vianet China and certain services provided by 21Vianet Technology and 21Vianet Beijing were subject to a VAT of 6%.

Effective from June 2014, all value-added telecommunication services provided in mainland China were subject to a VAT of 6% whereas basic telecommunication services are subject to a VAT of 11%. Effective from May 2018, the VAT rate on basic telecommunication services was replaced by a new rate of 10%, and has been further replaced by the rate of 9% effective from April 2019. On March 20, 2019, the Ministry of Finance, the State Administration of Taxation and the General Administration of Customs jointly issued the Notice of Strengthening Reform of VAT Policies, or the Announcement No. 39. Pursuant to the Announcement No. 39, the generally applicable VAT rates are simplified to 13%, 9%, 6%, and nil, which became effective on April 1, 2019. In addition, a general VAT taxpayer is allowed to offset its qualified input VAT paid on taxable purchases against the output VAT chargeable on the telecommunication services and modern services provided by it.

Critical Accounting Policies

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of our consolidated financial statements requires us to make estimates and judgments that affect the reported amounts in our consolidated financial statements. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Although actual results have historically been reasonably consistent with management's expectations, actual results may differ from these estimates or our estimates may be affected by different assumptions or conditions.

Some of our accounting policies require higher degrees of judgment than others in their application. When reviewing our consolidated financial statements, you should consider (i) our selection of critical accounting policies, (ii) the judgment and other uncertainties affecting the application of such policies and (iii) the sensitivity of reported results to changes in conditions and assumptions. We consider the policies discussed below to be critical to an understanding of our consolidated financial statements as their application places significant demands on the judgment of our management. We believe the following critical accounting policies are the most significant to the presentation of our financial statements and some of which may require the most difficult, subjective and complex judgments and should be read in conjunction with our consolidated financial statements, the risks and uncertainties described under "Risk Factors" and other disclosures included in this annual report.

Revenue Recognition

We provide hosting and related services including hosting of customers' servers and networking equipment, connecting customers' servers with internet backbones ("**Hosting services**"), virtual private network services providing encrypted secured connection to public internet ("**VPN services**") and other value-added services and public cloud service through strategic partnership with Microsoft.

On January 1, 2018, we adopted ASU No. 2014-09, *Revenue from Contracts with Customers* ("**ASC 606**"), which supersedes the revenue recognition requirements in ASC Topic 605, *Revenue Recognition* ("**ASC 605**"), using the modified retrospective transition method applied to those contracts which were not completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under ASC 606, while prior period amounts have not been adjusted and continue to be reported in accordance with historic accounting under ASC 605. The impact of adopting the new revenue standard was not material to consolidated financial statements and there was no adjustment to beginning retained earnings on January 1, 2018.

Under ASC 606, an entity recognizes revenue as it satisfies a performance obligation when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of ASC 606, the entity performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price, including variable consideration, if any; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. We only apply the five-step model to contracts when it is probable that the entity will collect the consideration to which it is entitled in exchange for the goods or services it transfers to the customer.

Once a contract is determined to be within the scope of ASC 606 at contract inception, we review the contract to determine which performance obligations we must deliver and which of these performance obligations are distinct. We recognize revenue based on the amount of the transaction price that is allocated to each performance obligation when that performance obligation is satisfied or as it is satisfied.

We are a principal and records revenue on a gross basis when we are primarily responsible for fulfilling the service, has discretion in establish pricing and controls the promised service before transferring that service to customers. Otherwise, we record revenue at the net amounts as commissions.

Our revenue recognition policies effective on the adoption date of ASC 606 are as follows:

Hosting services are services that we dedicate data center space to house customers' servers and networking equipment and provides tailored server administration services including operating system support and assistance with updates, server monitoring, server backup and restoration, server security evaluation, firewall services, and disaster recovery. We also provide interconnectivity services to connect customers with each other, internet backbones in China and other networks through Border Gateway Protocol, or BGP, network, or single-line, dual-line or multiple-line networks. Hosting services are typically provided to customers for a fixed amount over the contract service period and the related revenues are recognized on a straight-line basis over the term of the contract. For certain contracts where considerations are based on the usage of the Hosting services, the related revenues are recognized based on the consumption at the predetermined rate as the services are rendered throughout the contact term. We are a principal and records revenue for Hosting service on a gross basis.

VPN services are services that we extend customers' private networks by setting up secure and dedicated connections through the public internet. VPN services are provided to customers for a fixed amount over the contract service period and revenue are recognized on a straight-line basis over the term of the contract. We are a principal and records revenue for VPN service on a gross basis.

We partner with Microsoft to provide cloud services that allow enterprise and individual customers to run their applications over the internet using the IT infrastructure. Cloud services are generally charged by us to the end customers for a fixed amount or based on the actual usage of the cloud resources at predetermined rates over the subscription period, which in general is one year. We fulfil our performance obligation of facilitating Microsoft to provide the cloud services to the end customers by providing, but not limited to, contract processing management, billing, payment collection, maintenance, help desk supports and certain IT infrastructure services. These are considered as a series of distinct services that are substantially the same and have the same pattern of transfer to the customer; therefore, they are accounted for as a single performance obligation that is satisfied over time. The corresponding consideration that we are entitled to is recognized as revenue using a time-based method since this best depicts the pattern of the control transfer. Revenue from cloud services consists of monthly incentive revenues received from Microsoft upon completion of certain conditions and gross billing amount received from end customers net of considerations remitted by us to Microsoft. When the contract is modified to add distinct services to the single performance obligation for additional fees, such changes are accounted for prospectively as a termination of the old contract and the creation of a new contract.

For certain arrangements, customers are required to pay us before the services are delivered. When either party to a revenue contract has performed, we recognize a contract asset or a contract liability in the consolidated balance sheets, depending on the relationship between our performance and the customer's payment. Contract liabilities were mainly related to fee received for Hosting services to be provided over the contract period, which were presented as deferred revenue on the consolidated balance sheets.

Deferred revenue represented our obligation to transfer the goods or services to a customer for which we have received consideration (or an amount of consideration is due) from the customer. As of December 31, 2019 and 2020, we have deferred revenue amounting up to RMB57.6 million and RMB63.2 million (US$9.7 million), respectively. Revenue recognized from opening deferred revenue balance was RMB46.7 million (US$7.2 million) for the year ended December 31, 2020.

Our certain hosting service contains lease and non-lease components. We elected to adopt the practical expedient which allows lessors to combine lease and non-lease components and account for them as one component if (i) the timing and pattern of transfer of the lease component and non-lease component is the same; and (ii) the lease component should be classified as an operating lease if it were accounted for separately. The combined component is accounted for in accordance with the current lease accounting guidance ("**ASC 842**") if the lease component is predominant, and in accordance with the ASC 606 if the non-lease component is predominant. We have determined that the non-lease component is the predominant component in hosting service. Therefore, we have accounted for the combined component in accordance with ASC 606.

We do not disclose the value of unsatisfied performance obligations as our revenue contracts are (i) contracts with an original expected length of one year or less or (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

Fair Value of Financial Instruments

Our financial instruments include cash and cash equivalents, restricted cash, short-term investments, accounts receivable and payable, other receivables and payables, bonds payable, short-term and long-term borrowings, available-for-sale investments, liability classified restricted share units ("**RSU**") and convertible promissory notes. Other than the bonds payable, long-term borrowings and convertible promissory notes, the carrying values of these financial instruments approximate their fair values due to their short-term maturities.

The carrying amounts of bonds payable and long-term borrowings approximate their fair values since they bear interest rates which approximate market interest rates. We carry the bonds payable at face value less unamortized debt discount and issuance cost on its consolidated balance sheets and measures the fair value for disclosure purposes only. We elected the fair value option of convertible promissory notes when it initially recognized as financial liability as the fair value better represents the value of the underlying liabilities. The contingent purchase considerations in both cash and shares and share-settled bonus are initially measured at fair value on the acquisition dates of the acquired businesses and the date of grant, respectively, and subsequently remeasured at the end of each reporting period with an adjustment for fair value recorded to the current period income/(expense). Convertible promissory notes are measured at fair value in accordance with ASC 825 *Financial Instruments* on the issuance date and subsequently remeasured at the end of each reporting period with an adjustment for fair value recorded to the current period income/(expense), however, any fair value changes related to instrument-specific credit risk are recorded to other comprehensive income/(loss).

Consolidation of Variable Interest Entities

PRC laws and regulations currently restrict foreign ownership of PRC companies that engage in value-added telecommunications services, including content and application delivery services. To comply with the foreign ownership restriction, we conduct our businesses in the PRC through our variable interest entities using contractual arrangements entered into by us, 21Vianet China, 21Vianet Technology and its respective shareholders. 21Vianet Beijing, subsidiary of 21Vianet Technology, holds a Cross-Regional VAT licenses to carry out the full data center business across two province-level municipalities and four cities in China and data center business (excluding internet resources coordination service) across two province-level municipalities and 18 cities in China. We exercise effective control over 21Vianet Technology through a series of contractual arrangements, including: (i) an irrevocable power of attorney, under which each shareholder of 21Vianet Technology appointed 21Vianet China or a person designated by 21Vianet China as his/her attorney-in-fact to attend shareholders' meeting of 21Vianet Technology and exercise all the shareholder's voting rights, such power of attorney has been subsequently assigned to 21Vianet Group; (ii) a loan agreement and a financial support letter pursuant to which we agree to give unlimited financial support to 21Vianet Technology; and (iii) an exclusive technical consulting and services agreement, where we receive substantially all of the economic benefits of 21Vianet Technology in consideration for the services provided by 21Vianet China and we are considered the primary beneficiary of 21Vianet Technology. Accordingly, 21Vianet Technology is our variable interest entity under U.S. GAAP and we consolidate its result in our consolidated financial statements. Similar contractual arrangements had been entered into (i) amongst iJoy BVI, SZ

Zhuoaiyi, BJ iJoy and its shareholder; (ii) amongst WiFire Group, aBitCool DG, WiFire Network and its shareholders; and (iii) Hongkong Fastweb Holding Co, Limited, SH Edge Connect and SH Zhiyan and its shareholder, and similar conclusion has been reached respect to the variable interest entity structure with respect to BJ iJoy, WiFire Network, and SH Zhiyan. We have confirmed with Han Kun Law Offices, our PRC legal counsel, on the compliance and validity of each of the contractual agreements under PRC laws and regulations. However, any change in PRC laws and regulations may affect our ability to effectively control the variable interest entities and preclude us from consolidating the variable interest entities in the future.

Long-term Investments

Our long-term investments primarily consist of equity investments without readily determinable fair value, equity method investments.

Pursuant to ASC Topic 321, *Investments – Equity Securities* ("**ASC 321**"), equity investments, except for those accounted for under the equity method and those that result in consolidation of the investee and certain other investments, are measured at fair value, and any changes in fair value are recognized in earnings. For equity securities without readily determinable fair value and do not qualify for the existing practical expedient in ASC Topic 820, *Fair Value Measurements and Disclosures* ("**ASC 820**"), to estimate fair value using the net asset value per share (or its equivalent) of the investment, we elected to use the measurement alternative to measure those investments at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer, if any. Equity securities with readily determinable fair value are measured at fair values, and any changes in fair value are recognized in earnings.

For equity investments measured at fair value with changes in fair value recorded in earnings, we do not assess whether those securities are impaired. For those equity investments that we elect to use the measurement alternative, we make a qualitative assessment of whether the investment is impaired at each reporting date. If a qualitative assessment indicates that the investment is impaired, the entity has to estimate the investment's fair value in accordance with the principles of ASC 820. If the fair value is less than the investment's carrying value, the entity has to recognize an impairment loss in net income equal to the difference between the carrying value and fair value.

Investments in equity investees represent investments in entities in which we can exercise significant influence but does not own a majority equity interest or control are accounted for using the equity method of accounting in accordance with ASC Subtopic 323-10, *Investments-Equity Method and Joint Ventures: Overall* ("**ASC 323-10**"). we apply the equity method of accounting that is consistent with ASC 323-10 in limited partnerships in which we hold a three percent or greater interest. Under the equity method, we initially record our investment at cost and prospectively recognizes its proportionate share of each equity investee's net profit or loss into its consolidated statements of operations. The difference between the cost of the equity investee and the amount of the underlying equity in the net assets of the equity investee is recognized as equity method goodwill included in equity method investments on the consolidated balance sheets. We evaluate our equity method investments for impairment under ASC 323-10. An impairment loss on the equity method investments is recognized in the consolidated statements of operations when the decline in value is determined to be other-than-temporary.

Accounts Receivable and Allowance for Doubtful Debt

Prior to adopting ASC 326, *Financial Instruments-Credit Losses* ("**ASC326**"), accounts receivables are carried at net realizable value. An allowance for doubtful debt is recorded in the period when loss is probable based on an assessment of specific evidence indicating troubled collection, historical experience, accounts aging and other factors in accordance with ASC 310, *Receivables*. An accounts receivable is written off after all collection effort has ceased.

On January 1, 2020, we adopted ASC 326 using modified-retrospective transition approach. Following the adoption of this guidance, a cumulative-effect adjustment in accumulated deficit of RMB2.7 million was recognized as of January 1, 2020. For the year ended December 31, 2020, we recorded credit losses of RMB2.4 million (US$0.4 million).

Pursuant to ASC 326, an allowance for credit losses for financial assets, including accounts receivable, carried at amortized cost to present the net amount expected to be collected as of the balance sheet date. Such allowance is based on credit losses expected to arise over the life of the asset's contractual term, which includes consideration of prepayments. Assets are written off when we determine that such financial assets are deemed uncollectible and are recognized as a deduction from the allowance for credit losses. Expected recoveries of amounts previously written off, not to exceed the aggregate of the amount previously written off, are included in determining the necessary reserve at the balance sheet date. We pool financial assets based on similar risk characteristics to estimate expected credit losses. We estimate expected credit losses on financial assets individually when those assets do not share similar risk characteristics. We closely monitor our accounts receivable including timely account reconciliations, detailed reviews of past due accounts, updated credit limits, and monthly analysis of the adequacy of their reserve for credit losses.

We utilize a loss rate approach to determine lifetime expected credit losses for its financial assets. This method is used for calculating an estimate of losses based primarily on our historical loss experience. In determining loss rates, our evaluate information related to historical losses, adjusted for current conditions and further adjusted for the period of time that we can reasonably forecast. We have concluded that we can reasonably support a forecast period for the contractual life of our financial assets. Qualitative and quantitative adjustments related to current conditions and the reasonable and supportable forecast period consider the following: the customer or vendor 's creditworthiness, changes in the policy and procedures to establish customer credit limits, changes in the payment terms of receivables, existence and effect of any concentration of credit and changes in the level of such concentrations, and the effects of other external forces such as the current and forecasted direction of the economic and business environment.

Leases

Effective January 1, 2019, we adopted ASC Topic 842, *Lease* ("**ASC 842**") using the modified retrospective method and did not restate the comparable periods. We determine if an arrangement is a lease at inception. Leases are classified as operating or finance leases in accordance with the recognition criteria in ASC 842-20-25. Our leases do not contain any material residual value guarantees or material restrictive covenants.

We have elected the package of practical expedients, which allows us not to reassess (1) whether any expired or existing contracts as of the adoption date are or contain a lease, (2) lease classification for any expired or existing leases as of the adoption date and (3) initial direct costs for any expired or existing leases as of the adoption date. We have lease agreements with lease and nonlease components, which are generally accounted for separately. Lastly, we elected the short-term lease exemption for all contracts with lease term of 12 months or less.

At the commencement date of a lease, we determine the classification of the lease based on the relevant factors present and records a right-of-use ("**ROU**") asset and lease liability for operating lease, and records property and equipment and finance lease liability for finance lease. ROU assets and property and equipment acquired through lease represent the right to use an underlying asset for the lease term, and operating lease liabilities and finance lease liabilities represent the obligation to make lease payments arising from the lease. ROU assets and lease liabilities are calculated as the present value of the lease payments not yet paid. If the rate implicit in our leases is not readily available, we use an incremental borrowing rate based on the information available at the lease commencement date in determining the present value of lease payments. This incremental borrowing rate reflects the fixed rate at which we could borrow on a collateralized basis the amount of the lease payments in the same currency, for a similar term, in a similar economic environment. ROU assets include any lease prepayments and are reduced by lease incentives. Operating lease expense for lease payments is recognized on a straight-line basis over the lease term. Lease terms are based on the non-cancelable term of the lease and may contain options to extend the lease when it is reasonably certain that we will exercise that option.

Leases with an initial lease term of 12 months or less are not recorded on the consolidated balance sheet. Lease expense for these leases is recognized on a straight-line basis over the lease term.

Income Taxes

We account for income taxes using the liability method. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial reporting and tax bases of assets and liabilities using enacted tax rates that will be in effect in the period in which the differences are expected to reverse. The carrying amount of deferred tax assets is reviewed on an entity-by-entity basis and is reduced by a valuation allowance to the extent that it is more-likely-than- not that the benefits of the deferred tax assets will not be realized in future years. The valuation allowance is determined based on the weight of positive and negative evidences including future reversals of existing taxable temporary differences, the adequacy of future taxable income exclusive of reversing temporary differences, and verifiable tax planning. The estimated future taxable income involves significant assumptions of forecasted revenue growth that take into consideration of our historical financial results, our plan of expanding operating capacity as well as current industry trends. The effect on deferred taxes of a change in tax rates is recognized in income in the period that includes the enactment date of the change in tax rate. All deferred income tax assets and liabilities are classified as non-current on the consolidated balance sheets.

We apply ASC Topic 740, *Accounting for Income Taxes* ("**ASC 740**") to account for uncertainty in income taxes. ASC 740 prescribes a recognition threshold a tax position is required to meet before being recognized in the financial statements.

We have elected to classify interest and penalties related to unrecognized tax benefits, if and when required, as part of "income tax benefits (expenses)" in the consolidated statements of operations.

Share-based Compensation

Share options and Restricted Share Units ("**RSUs**") granted to employees are accounted for under ASC Topic 718, *Compensation – Stock Compensation* ("**ASC 718**"), which requires that share-based awards granted to employees be measured based on the grant date fair value and recognized as compensation expense over the requisite service period and/or performance period (which is generally the vesting period) in the consolidated statements of operations. We account our forfeitures as we occur.

We have elected to recognize compensation expense using the straight-line method for share-based awards granted with service conditions that have a graded vesting schedule. For share-based awards granted with performance conditions, we recognize compensation expense using the accelerated method. We commence recognition of the related compensation expense if it is probable that the defined performance condition will be met. To the extent that we determine that it is probable that a different number of share-based awards will vest depending on the outcome of the performance condition, the cumulative effect of the change in estimate is recognized in the period of change. For share-based awards with market conditions, the probability to achieve market conditions is reflected in the grant date fair value. We recognized the related compensation expenses when the requisite service is rendered using the accelerate method.

On November 26, 2016, the Board approved a new incentive program to certain individuals with a new bonus scheme which will be settled by issuing a variable number of shares with a fair value equal to fixed dollar amount on the settlement date. We remeasure the fair value of such liability at each reporting period end through earnings until the actual settlement date, which is the date when the number of underlying shares were fixed and recorded the compensation cost over the remaining vesting term.

A cancellation of the terms or conditions of an equity award under original award in exchange for a new award should be treated as modification. The compensation costs associated with the modified awards are recognized if either the original vesting conditions or the new vesting conditions have been achieved. Total recognized compensation cost for the awards is at least equal to the fair value of the original awards at the grant date unless at the date of the modification the performance or service conditions of the original awards are not expected to be satisfied. The incremental compensation cost is measured as the excess of the fair value of the replacement awards over the fair value at the modification date. Therefore, in relation to the modified awards, we recognize share-based compensation over the vesting periods of the new awards, which comprises (i) the amortization of the incremental portion of share-based compensation over the remaining vesting term, and (ii) any unrecognized compensation cost of original awards, using either the original term or the new term, whichever results in higher expenses for each reporting period. For modification of a liability award that remains a liability after modification, the liability award continues to be re-measured at fair value at each reporting date. For a modification of a market condition, the incremental portion of share-based compensation and unrecognized compensation cost of original award are recognized over new vesting period. For modification of a liability award that remains a liability after modification, the liability award continues to be remeasured at fair value at each reporting date.

Recently Issued Accounting Pronouncements

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform* (Topic 848), which is elective, and provides for optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The amendments apply only to contracts and hedging relationships that reference LIBOR or another reference rate expected to be discontinued due to reference rate reform. These amendments are effective immediately and may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022. We are currently evaluating the impact of reference rate reform and potential impact of adoption of these elective practical expedients on our condensed consolidated financial statements and will consider the impact of adoption during our analysis.

In August 2020, the FASB issued ASU No. 2020-06, *Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* ("**ASU 2020-06**"), which focuses on amending the legacy guidance on convertible instruments and the derivatives scope exception for contracts in an entity's own equity. ASU 2020-06 simplifies an issuer's accounting for convertible instruments by reducing the number of accounting models that require separate accounting for embedded conversion features. ASU 2020-06 also simplifies the settlement assessment that entities are required to perform to determine whether a contract qualifies for equity classification. Further, ASU 2020-06 enhances information transparency by making targeted improvements to the disclosures for convertible instruments and earnings-per-share (EPS) guidance, i.e., aligning the diluted EPS calculation for convertible instruments by requiring that an entity use the if-converted method and that the effect of potential share settlement be included in the diluted EPS calculation when an instrument may be settled in cash or shares, adding information about events or conditions that occur during the reporting period that cause conversion contingencies to be met or conversion terms to be significantly changed. This update will be effective for our fiscal years beginning after December 15, 2021, and interim periods within those fiscal years. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. Entities can elect to adopt the new guidance through either a modified retrospective method of transition or a fully retrospective method of transition. We expect to early adopt ASU 2020-06 beginning January 1, 2021 and do not expect any material impact on its financial statement at the date of adoption.

Inflation

In the last three years, inflation in China has not materially impacted our results of operations. According to the National Bureau of Statistics of China, the annual average percent changes in the consumer price index in China for 2018, 2019 and 2020 were 2.1%, 2.9% and 2.5%, respectively. Although we have not been materially affected by inflation in the past, we cannot assure you that we will not be affected in the future by higher rates of inflation in China.

Results of Operations

The following table sets forth our consolidated results of operations for the periods indicated both in absolute amount and as a percentage of our total net revenues. This information should be read together with our consolidated financial statements and related notes included elsewhere in this annual report. The results of operations in any period are not necessarily indicative of the results you may expect for future periods.

	For the Years Ended December 31,						
	2018		2019		2020		
	RMB	*%*	*RMB*	*%*	*RMB*	*USD*	*%*
	(in thousands, except percentages)						
Consolidated Statements of Operations Data:							
Net revenues	3,401,037	100.0	3,788,967	100.0	4,829,019	740,080	100.0
Cost of revenues	(2,456,166)	(72.2)	(2,849,518)	(75.2)	(3,753,008)	(575,174)	(77.7)
Gross profit	944,871	27.8	939,449	24.8	1,076,011	164,906	22.3
Operating (expenses) income:							
Sales and marketing expenses	(172,176)	(5.1)	(206,309)	(5.4)	(235,012)	(36,017)	(4.9)
Research and development expenses	(92,109)	(2.7)	(88,792)	(2.3)	(112,891)	(17,301)	(2.3)
General and administrative expenses	(462,637)	(13.5)	(415,277)	(11.0)	(535,111)	(82,009)	(11.1)
(Reversal)/allowance for doubtful debt	598	0.0	(1,557)	(0.0)	(2,393)	(367)	(0.1)
Changes in the fair value of contingent purchase consideration payables	13,905	0.4	–	–	–	–	–
Impairment of long-lived assets	–	–	–	–	(81,619)	(12,509)	(1.7)
Impairment of goodwill	–	–	–	–	–	–	–
Impairment of receivables from equity investees	–	–	(52,142)	(1.4)	–	–	–
Other operating income	5,027	0.1	6,862	0.1	7,619	1,168	0.2
Total operating expenses	(707,392)	(20.8)	(757,215)	(20.0)	(959,407)	(147,035)	(19.9)
Operating profit	237,479	7.0	182,234	4.8	116,604	17,871	2.4
Interest income	45,186	1.3	54,607	1.4	31,711	4,860	0.7
Interest expense	(236,066)	(6.9)	(345,955)	(9.1)	(380,609)	(58,331)	(7.9)
Impairment of long-term investment	–	–	–	–	(13,030)	(1,997)	(0.3)
Gain on disposal of subsidiaries	4,843	0.1	–	–	–	–	–
Loss on debt extinguishment	–	–	(18,895)	(0.5)	–	–	–
Other income	58,033	1.7	36,380	1.0	16,539	2,535	0.3
Other expenses	(4,103)	(0.1)	(5,632)	(0.1)	(36,912)	(5,657)	(0.8)
Changes in the fair value of convertible promissory notes	–	–	–	–	(2,544,220)	(389,919)	(52.7)
Foreign exchange (loss)/gain	(81,055)	(2.4)	(27,995)	(0.7)	228,125	34,962	4.7

	For the Years Ended December 31,						
	2018		2019		2020		
	RMB	*%*	*RMB*	*%*	*RMB*	*USD*	*%*
	(in thousands, except percentages)						
Income/(loss) before income taxes and (loss) gain from equity method investments	24,317	0.7	(125,256)	(3.3)	(2,581,792)	(395,676)	(53.6)
Income tax expense	(24,411)	(0.7)	(5,437)	(0.1)	(109,336)	(16,756)	(2.3)
(Loss) gain from equity method investments	(186,642)	(5.5)	(50,553)	(1.3)	10,869	1,666	0.2
Consolidated net loss	(186,736)	(5.5)	(181,246)	(4.8)	(2,680,259)	(410,766)	(55.7)
Net income attributable to non-controlling interest	(18,329)	(0.5)	(1,046)	(0.0)	(29,088)	(4,458)	(0.6)
Deemed dividend	–	–	–	–	(470,643)	(72,129)	(9.7)
Net loss attributable to the Company's ordinary shareholders	(205,065)	(6.0)	(182,292)	(4.8)	(3,179,990)	(487,353)	(66.0)

Year Ended December 31,2020 Compared to Year Ended December 31, 2019

Net Revenues

Our net revenues increased by 27.4% from RMB3,789.0 million in 2019 to RMB4,829.0 million (US$740.1 million) in 2020, primarily due to (i) the increases in the total number of billable cabinets and the amount of average monthly recurring revenue per cabinet under our management, which were attributable to growing customer demand, and (ii) the increased demand for our cloud and VPN services. The number of cabinets under our management increased by 47.6% from 36,291 as of December 31, 2019 to 53,553 as of December 31, 2020.

Cost of Revenues

Our cost of revenues increased by 31.7% from RMB2,849.5 million in 2019 to RMB3,753.0 million (US$575.2 million) in 2020, primarily due to (i) increases in our telecommunication, utility and depreciation costs attributable to the delivery of additional cabinets and (ii) increased customer demand for our cloud and VPN services.

Gross Profit

As a result of the foregoing, our gross profit increased by 14.5% from RMB939.4 million in 2019 to RMB1,076.0 million (US$164.9 million) in 2020. Our gross margin decreased from 24.8% in 2019 to 22.3% in 2020, primarily due to the delivery of additional cabinets which usually have lower utilization and incur depreciation and maintenance costs during the ramp-up period.

Operating Expenses

Our operating expenses increased by 26.7% from RMB757.2 million in 2019 to RMB959.4 million (US$147.0 million) in 2020. Our operating expenses as a percentage of net revenues remains stable at 19.9% in 2020 compared to that of 20.0% in 2019.

Sales and Marketing Expenses. Our sales and marketing expenses increased by 13.9% from RMB206.3 million in 2019 to RMB235.0 million (US$36.0 million) in 2020, primarily due to the expansion of our business. As a percentage of net revenues, our sales and marketing expenses decreased from 5.4% in 2019 to 4.9% in 2020.

Research and Development Expenses. Our research and development expenses increased by 27.1% from RMB88.8 million in 2019 to RMB112.9 million (US$17.3 million) in 2020, primarily due to our increased investments to strengthen our research and development capabilities. As a percentage of net revenues, our research and development expenses were both 2.3% in 2019 and 2020.

General and Administrative Expenses. Our general and administrative expenses increased by 28.9% from RMB415.3 million in 2019 to RMB535.1 million (US$82.0 million) in 2020, in line with the overall growth of our business and attributable to the increase in staff costs as we have recruited new senior management. As a percentage of net revenues, our general and administrative expenses slightly increased from 11.0% in 2019 to 11.1% in 2020.

Allowance for doubtful debt. Our allowance for doubtful debt increased from RMB1.6 million in 2019 to RMB2.4 million (US$0.4 million) in 2020.

Impairment of long-lived assets. We recorded a loss of RMB81.6 million (US$12.5 million) in 2020.

Interest Income

Our interest income decreased by 41.9% from RMB54.6 million in 2019 to RMB31.7 million (US$4.9 million) in 2020, primarily due to our increased use of funds in various business projects.

Interest Expense

Our interest expense increased by 10.0% from RMB346.0 million in 2019 to RMB380.6 million (US$58.3 million) in 2020, primarily due to interest expense recognized for the convertible promissory notes with an aggregate principal amount of US$200 million issued by us in 2020, and an increase in our bank borrowings in 2020.

Other Income

Our other income decreased by 54.5% from RMB36.4 million in 2019 to RMB16.5 million (US$2.5 million) in 2020. Other income comprises miscellaneous non-operating income that we generate.

Other Expenses

Our other expenses increased from RMB5.6 million in 2019 to RMB36.9 million (US$5.7 million) in 2020, primarily due to expenses of RMB18.7 million (US$2.9 million) incurred in connection with issuing the convertible promissory notes in 2020.

Changes in the Fair Value of Convertible Promissory Notes

Changes in the fair value of convertible promissory notes were RMB2.5 billion (US$0.4 billion) in 2020, which represent unrealized loss on the fair value of our convertible promissory notes issued by us in February to April 2020 caused by changes in the market price of our ADSs.

Loss on Debt Extinguishment

We did not record any loss or profit on debt extinguishment in 2020, compared to RMB18.9 million in 2019.

Foreign Exchange Gain

We had a foreign exchange gain of RMB228.1 million (US$35.0 million) in 2020, which represents unrealized net gain caused by the depreciation of the U.S. dollar against the Renminbi.

Income Tax Expenses

We recorded income tax expenses in the amount of RMB109.3 million (US$16.8 million) in 2020, compared with income tax expenses of RMB5.4 million in 2019, with the effective tax rate 4.3%. This is primarily due to:

- Loss incurred outside China reduces the income tax benefit by RMB712.0 million (US$109.1 million) in 2020;
- Current and deferred tax rate differences lead to an income tax expense in the amount of RMB36.4 million (US$5.6 million) in 2020; and
- Change in valuation allowance leads to a decrease in the income tax expense in the amount of RMB6.5 million (US$1.0 million) in 2020.

Net Loss

As a result of the foregoing, we recorded a net loss of RMB2,680.3 million (US$410.8 million) in 2020, as compared to a net loss of RMB181.2 million in 2019.

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

Net Revenues

Our net revenues increased from RMB3,401.0 million in 2018 to RMB3,789.0 million in 2019. The increase was primarily attributable to the growing demand for data centers in the domestic market, driven by the ongoing expansion of corporate digitalization across China.

Revenues from our hosting and related services amounted to RMB3,789.0 million in 2019, increasing by 11.4% from RMB3,401.0 million in 2018. The increase in revenues from our hosting and related services was primarily due to (i) the increase in the total number of billable cabinets and the amount of monthly recurring revenue per cabinet under our management, which was attributable to growing customer demand, (ii) the growth in demand for our cloud business. The number of cabinets under our management increased from 30,654 as of December 31, 2018 to 36,291 as of December 31, 2019.

Cost of Revenues

Our cost of revenues increased by 16.0% from RMB2,456.2 million in 2018 to RMB2,849.5 million in 2019. Our telecommunication costs increased by 17.9% from RMB1,332.3 million in 2018 to RMB1,570.8 million in 2019. The increase in our cost of revenues was primarily due to the delivery of additional pipeline capacity.

Gross Profit

Our gross profit decreased by 0.6% from RMB944.9 million in 2018 to RMB939.4 million in 2019. As a percentage of net revenues, our gross profit decreased from 27.8% in 2018 to 24.8% in 2019. The decrease of gross profit and gross margin was primarily due to the delivery of additional pipeline capacity.

Operating Expenses

Our operating expenses increased by 7.0% from RMB707.4 million in 2018 to RMB757.2 million in 2019. Our operating expenses as a percentage of net revenues decreased from 20.8% in 2018 to 20.0% in 2019. The decrease of operating expenses as a percentage of net revenues was primarily due to the successful implementation of the Company's efficiency enhancement initiatives.

Sales and Marketing Expenses. Our sales and marketing expenses increased by 19.8% from RMB172.2 million in 2018 to RMB206.3 million in 2019, primarily due to the successful implementation of various market activities. As a percentage of net revenues, our sales and marketing expenses was 5.1% and 5.4% in 2018 and 2019, respectively.

Research and Development Expenses. Our research and development expenses decreased from RMB92.1 million in 2018 to RMB88.8 million in 2019. As a percentage of net revenues, our research and development expenses decreased from 2.7% in 2018 to 2.3% in 2019.

General and Administrative Expenses. Our general and administrative expenses decreased by 10.2% from RMB462.6 million in 2018 to RMB415.3 million in 2019, primarily due to a decrease in labor cost as a result of the successful implementation of the Company's efficiency enhancement initiatives. As a percentage of net revenues, our general and administrative expenses decreased from 13.5% in 2018 to 11.0% in 2019.

Changes in the Fair Value of Contingent Purchase Consideration Payable. We incurred nil in the changes of the fair value of contingent purchase consideration payable in 2019.

Impairment of receivables from equity investees. We recorded a loss of RMB52.1 million in 2019.

Impairment of long-lived assets. We incurred nil in impairment of long-lived assets in 2019.

Impairment of goodwill. We incurred nil in impairment of goodwill in 2019.

Interest Income

Our interest income increased from RMB45.2 million in 2018 to RMB54.6 million in 2019, primarily due to an increase in interest income generated from short-term investments.

Interest Expense

Our interest expense increased from RMB236.1 million in 2018 to RMB346.0 million in 2019, primarily due to interest expense recognized for the 2021 Notes.

Other Income

Our other income decreased from RMB58.0 million in 2018 to RMB36.4 million in 2019. Other income in 2019 was primarily attributable to disposal gain on equity method investments.

Other Expenses

Our other expenses increased from RMB4.1 million in 2018 to RMB5.6 million in 2019. Other expenses in both periods were primarily due to the loss attributable to the disposal of certain of our equipment, such as servers and back-up batteries.

Loss on Debt Extinguishment

We recorded a loss on debt extinguishment of RMB18.9 million 2019.

Foreign Exchange Loss

We had a foreign exchange loss of RMB28.0 million in 2019, primarily due to the appreciation of U.S. dollar against Renminbi in 2019.

Income Tax Expenses

We recorded income tax expenses in the amount of RMB5.4 million in 2019, compared with income tax expenses of RMB24.4 million in 2018, with the effective tax rates 3.1%. This is primarily due to:

- Change in valuation allowance leads to a decrease in the income tax expense in the amount of RMB25.4 million in 2019;

- Loss incurred outside China reduces the income tax benefit by RMB77.1 million in 2019; and

- Current and deferred tax rate differences lead to an income tax expense in the amount of RMB8.7 million in 2019.

Consolidated Net Loss

As a result of the above, we recorded a net loss of RMB181.2 million in 2019, as compared to a net loss of RMB186.7 million in 2018.

B. Liquidity and Capital Resources

As of December 31, 2019, we had RMB1,808.5 million in cash and cash equivalents, RMB548.7 million in restricted cash (current and non-current portion) and RMB363.9 million in short-term investments. As of December 31, 2020, we had RMB2,710.3 million (US$415.4 million) in cash and cash equivalents, RMB270.5 million (US$41.4 million) in restricted cash, RMB135.6 million (US$20.8 million) in non-current portion of restricted cash and RMB285.9 million (US$43.8 million) in short-term investments.

As of December 31, 2019, we had short-term bank borrowings and long-term borrowings (current portion) from various commercial banks with an aggregate outstanding balance of RMB267.0 million, and long-term borrowings (excluding current portion) from various commercial banks with an aggregate outstanding balance of RMB79.5 million. As of December 31, 2020, we had short-term bank borrowings and long-term borrowings (current portion) from various commercial banks with an aggregate outstanding balance of RMB214.3 million (US$32.8 million), and long-term borrowings (excluding current portion) from various commercial banks with an aggregate outstanding balance of RMB887.0 million (US$135.9 million). Our short-term bank borrowings bore average interest rates of 4.05%, 4.56% and 4.46% per annum, respectively, in 2018, 2019 and 2020. Our short-term bank borrowings have maturity terms of one year and expire at various times throughout the year. There are no material covenants or restrictions on us associated with our outstanding short-term borrowings. We have entered into long-term borrowing arrangements since 2013 with maturity terms of two to five years. The long-term borrowings (including current and non-current portions) outstanding as of December 31, 2018, 2019 and 2020 bore weighted-average interest rates of 5.31%, 5.28% and 5.61% per annum, respectively.

We issued an aggregate of 150,000 Series A perpetual convertible preferred shares to Vector Holdco Pte. Ltd., BTO Vector Fund ESC (CYM) L.P. and BTO Vector Fund FD (CYM) L.P., collectively referred to as "Affiliates of Vector", pursuant to an investment agreement dated June 22, 2020 among us, Affiliates of Vector and Blackstone Tactical Opportunities Fund – FD (Cayman) – NQ L.P. Dividends on each Series A perpetual convertible preferred share will accrue at 4.5% per annum from the issuance date until the date immediately prior to the conversion date. At any time after the issuance date, Series A convertible preferred shares are convertible into Class A ordinary shares or ADSs at the holder's option, the number of which will be determined based on a conversion price which is initially US$2.8333 per Class A ordinary shares or US$17.00 per ADS, subject to certain adjustments therein. On March 1, 2021, Affiliates of Vector converted all of their 150,000 Series A perpetual convertible preferred shares into 54,570,816 Class A Ordinary Shares.

We issued convertible promissory notes to Goldman Sachs Asia Strategic Pte. Ltd., StoneBridge 2020, L.P. and StoneBridge 2020 Offshore Holdings II, L.P. in an aggregate principal amount of US$75,000,000 pursuant to a convertible note purchase agreement dated February 19, 2020 between us and Goldman Sachs Asia Strategic Pte. Ltd. We issued convertible promissory notes to Hina Group Fund II, L.P. and Hina Group Fund VI, L.P. in an aggregate principal amount of US$17,000,000 pursuant to a convertible note purchase agreement dated March 16, 2020 among us, Hina Group Fund II, L.P. and Hina Group Fund VI, L.P. We issued convertible promissory notes to UBS SDIC Fund Management Co., Ltd, in an aggregate principal amount of US$58,000,000 pursuant to a convertible note purchase agreement dated April 27, 2020 and a convertible note purchase agreement dated June 5, 2020, between us and UBS SDIC Fund Management Co., Ltd. We issued a convertible promissory note to Asialeads Capital (Cayman) Limited in an aggregate principal amount of US$50,000,000 pursuant to a convertible note purchase agreement dated February 24, 2020 between us and Asialeads Capital (Cayman) Limited. The convertible notes will mature in five years, bearing interest at the rate of 2% per annum from the issuance date which shall be payable semiannually in arrears in cash. At any time after the issuance, each note is convertible into our Class A Ordinary Shares at the holder's option at a conversion price of US$2 per share, or US$12 per ADS, subject to customary anti-dilution adjustments. Unless previously redeemed or converted, we shall redeem the note on the maturity date at 115% of the then outstanding principal amount plus all accrued but unpaid interest. In addition, if any portion of the outstanding principal amount of the notes has not been converted into our shares by the third anniversary of the note issuance date, the holders have the right to require us to redeem, in whole or in part, the outstanding principal amount of the note at 109% of the principal amount plus all accrued but unpaid interest. In August 2020, Asialeads Capital (Cayman) Limited partially converted the principal amount of its convertible note of US$25,000,000 into 12,499,998 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. In December 2020, Hina Group Fund VI, L.P. partially converted the principal amount of its convertible note of US$1,705,002.63 into 856,326 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. In December, UBS SDIC Fund Management Co., Ltd partially converted the principal amount of its convertible note of US$20,666,667.01 into 10,353,816 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS.

In August 2017, we issued USD-denominated notes due 2020 in an aggregate principal amount of US$200 million at a coupon rate of 7.000% per annum and in September 2017, we issued USD-denominated notes due 2020 in an aggregate principal amount of US$100 million at a coupon rate of 7.000% per annum, collectively referred to as the "2020 Notes." The notes issued in September 2017 were priced at a slight premium of 100.04, with an effective yield of 6.98%. The notes issued in September 2017 constituted a further issuance of, and were consolidated to form a single series with, the notes issued in August 2017. Interest on the 2020 Notes is payable semi-annually in arrears on, or nearest to, August 17 and February 17 in each year, beginning on February 17, 2018.

In April 2019, we issued USD-denominated notes due 2021 in an aggregate principal amount of US$300 million at an interest rate of 7.875% per annum, or the 2021 Notes, and used a portion of the proceeds to purchase, pursuant to a tender offer, US$150,839,000 in principal amount of the 2020 Notes, representing 50.3% of the outstanding principal amount of the 2020 Notes. On August 12, 2019, we repurchased US$18,000,000 in principal amount of 2020 Notes at the par value. As of September 30, 2020, the outstanding principal amount of the 2020 Notes was nil. Interest on the 2021 Notes is payable semi-annually in arrears on April 15 and October 15 in each year, beginning on October 15, 2019.

Both the 2020 Notes and 2021 Notes have (i) a restrictive covenant that restricts our ability in consolidation, merger and sale of assets to a certain extent; (ii) a negative pledge covenant that restricts our ability to create security upon our undertaking, assets or revenues to secure bonds, notes, debentures or other securities that are quoted, listed or dealt in or traded on securities market; (iii) a dividend payment restriction covenant; and (iv) a covenant relating to the ratio of our Adjusted EBITDA to our Consolidated Interest Expense (interest expense paid net of interest income received). Such covenants may limit our ability to undertake additional debt financing, but not equity financing.

We had unused credit lines in an aggregate amount of RMB1,574.6 million (US$241.3 million) as of December 31, 2020 under credit agreements with nine banks. As of the same date, we used RMB858.6 million (US$131.6 million) of the credit lines under the credit agreements with nine banks, pursuant to which we were granted credit lines in an aggregate amount of RMB2,433.2 million (US$372.9 million). There are no material covenants that restrict our ability to undertake additional financing associated with the used credit lines. No terms and conditions of the unused credit lines are available yet because utilization of such unused portion requires approval by the banks and separate loan agreements setting forth detailed terms and conditions will only be entered into with the banks upon utilization. In January 2021, we issued USD-denominated convertible senior notes due 2026 in an aggregate principal amount of US$600 million at a zero-coupon rate. We believe the working capital as of December 31, 2020 is sufficient for our present requirements.

As of December 31, 2020, we had total outstanding debts (including borrowings and bonds payable), of RMB3,044.9 million (US$466.7 million), consisting of onshore debt obligations of RMB1,101.3 million (US$168.8 million) and offshore debt obligations of RMB1,943.6 million (US$297.9 million). We believe we have sufficient financial resources to meet both of our onshore and offshore debt obligations when due. The growth of our business relies on the construction of new data centers. We also intend to acquire or invest in companies whose businesses are complementary to ours. We intend to use the proceeds of our outstanding debt mainly to construct new data centers and fund our acquisitions. As of December 31, 2020, we had purchase commitments made for acquisitions of machinery, equipment, construction in progress, bandwidth and cabinet capacity of RMB2,385.0 million (US$365.5 million) coming due within twelve months, and we intend to use a portion of the proceeds to fund these purchase commitments. Except as disclosed in this annual report, we have no outstanding bank loans or financial guarantees or similar commitments to guarantee the payment obligations of third parties. We believe that our current cash, cash equivalents and time deposits, our cash flow from operations and proceeds from our financing activities will be sufficient to meet our anticipated cash needs, including our cash needs for working capital and capital expenditures, for the next 12 months. If we have additional liquidity needs in the future, we may obtain additional financing, including equity offering and debt financing in capital markets, to meet such needs.

As of December 31, 2020, the total amount of cash and cash equivalents, restricted cash and short-term investments was RMB3,402.3 million (US$521.4 million), of which RMB1,028.3 million (US$157.6 million), RMB391.6 million (US$60.0 million) and RMB1,982.4 million (US$303.8 million) was held by our consolidated affiliated entities, PRC subsidiaries and offshore subsidiaries, respectively. Cash transfers from our PRC subsidiaries to our subsidiaries outside of China are subject to PRC government control of currency conversion. Restrictions on the availability of foreign currency may affect the ability of our PRC subsidiaries and consolidated affiliated entities to remit sufficient foreign currency to pay dividends or other payments to us, or otherwise satisfy their foreign currency denominated obligations. Governmental control of currency conversion may limit our ability to receive and utilize our revenues effectively. The major cost that would be incurred to distribute dividends is the withholding tax imposed on the dividends distributed by our PRC operating subsidiaries at the rate of 10% or a lower rate under an applicable tax treaty, if any.

The following table sets forth a summary of our cash flows for the periods indicated:

	For the Years Ended December 31,			
	2018	2019	2020	
	RMB	*RMB*	*RMB*	*US$*
		(in thousands)		
Net cash generated from operating activities	704,966	802,922	714,243	109,464
Net cash used in investing activities	(304,846)	(1,611,983)	(3,889,174)	(596,043)
Net cash (used in) generated from financing activities	(19,901)	461,557	4,163,255	638,046
Effect on foreign exchange rate changes on cash and cash equivalents and restricted cash	85,333	43,660	(229,064)	(35,106)
Net increase (decrease) in cash and cash equivalents and restricted cash	465,552	(303,844)	759,260	116,361
Cash and cash equivalents and restricted cash at beginning of the year	2,195,469	2,661,021	2,357,177	361,253
Cash and cash equivalents and restricted cash at end of the year	2,661,021	2,357,177	3,116,437	477,614
Cash and cash equivalents, restricted cash and short-term investments at end of the year	2,906,035	2,721,033	3,402,309	521,426

Operating Activities

Net cash generated from operating activities was RMB714.2 million (US$109.5 million) in 2020, primarily resulted from a net loss of RMB2,680.3 million (US$410.8 million), positively adjusted for certain items such as (i) depreciation and amortization of RMB989.0 million (US$151.6 million), (ii) the increase in advances from customers of RMB27.1 million (US$4.2 million), and (iii) loss from equity method investments of RMB10.9 million (US$1.7 million), partially offset by certain item such as the increase in prepaid expenses and other current assets of RMB117.1 million (US$17.9 million).

Net cash generated from operating activities was RMB802.9 million in 2019, primarily resulted from a net loss of RMB181.2 million, positively adjusted for certain items such as (i) depreciation and amortization of RMB772.2 million, (ii) the increase in advances from customers of RMB398.7 million, and (iii) loss from equity method investments of RMB50.6 million, partially offset by certain item such as the increase in prepaid expenses and other current assets of RMB328.2 million.

Net cash generated from operating activities was RMB705.0 million in 2018, primarily resulted from a net loss of RMB186.7 million, positively adjusted for certain items such as (i) depreciation and amortization of RMB634.6 million, (ii) the increase in advances from customers of RMB266.8 million, and (iii) loss from equity method investments of RMB186.6 million, partially offset by certain item such as the increase in prepaid expenses and other current assets of RMB262.4 million.

Investing Activities

Net cash used in investing activities was RMB3,889.2 million (US$596.0 million) in 2020, as compared to net cash used in investing activities of RMB1,612.0 million in 2019. Net cash used in investing activities in 2020 is primarily related to our purchase of property and equipment in the amounts of RMB2,473.3 million (US$379.1 million), our payment for short-term investments in the amount of RMB328.2 million (US$50.3 million), offset by proceeds received from maturity for short-term investments in the amount of RMB397.6 million (US$60.9 million), proceeds from disposal of long-term investments in the amount of RMB1.9 million (US$0.3 million).

Net cash used in investing activities was RMB1,612.0 million in 2019, as compared to net cash used in investing activities of RMB304.8 million in 2018. Net cash used in investing activities in 2019 is primarily related to our purchase of property and equipment in the amounts of RMB1,248.8 million, our payments for long-term investments in the amount of RMB9.3 million, our payment for short-term investments in the amount of RMB436.7 million, offset by proceeds received from maturity for short-term investments in the amount of RMB312.2 million, proceeds from disposal of long-term investments in the amount of RMB19.0 million.

Net cash used in investing activities was RMB304.8 million in 2018, as compared to net cash used in investing activities of RMB833.3 million in 2017. Net cash used in investing activities in 2018 is primarily related to our purchase of property and equipment in the amounts of RMB435.2 million, our payments for long-term investments in the amount of RMB252.8 million, our payment for short-term investments in the amount of RMB98.9 million, offset by proceeds received from maturity for short-term investments in the amount of RMB417.6 million, proceeds from disposal of long-term investments in the amount of RMB75.7 million.

Financing Activities

Net cash generated from financing activities was RMB4,163.3 million (US$638.0 million) in 2020, as compared to net cash used in financing activities amounting to RMB461.6 million in 2019. Net cash generated from financing activities in 2020 is primarily related to the proceeds from short-term bank borrowings of RMB34.0 million (US$5.2 million), partially offset by payment for purchase of property and equipment through finance leases of RMB376.2 million (US$57.7 million), the repayment of long-term bank borrowings of RMB33.0 million (US$5.1 million), proceeds from issuance of convertible promissory notes of RMB1,409.4 million (US$216.0 million), partially offset by payment of issuance and conversion cost of convertible promissory notes of RMB21.6 million (US$3.3 million), proceeds from Series A perpetual convertible preferred shares of RMB1,058.3 million (US$162.2 million) and proceeds from issuance of ordinary shares of RMB2,680.4 million (US$410.8 million).

Net cash generated from financing activities was RMB461.6 million in 2019, as compared to net cash used in financing activities amounting to RMB19.9 million in 2018. Net cash generated from financing activities in 2019 is primarily related to the proceeds from issuance of 2021 Notes of RMB2,012.1 million and the proceeds from short-term bank borrowings of RMB234.5 million, partially offset by payment for purchase of property and equipment through finance leases of RMB333.6 million, the repayment of long-term bank borrowings of RMB85.1 million and the repurchase of 2020 Notes of RMB1,148.1 million.

Net cash used in financing activities was RMB19.9 million in 2018, as compared to net cash used in financing activities amounting to RMB612.7 million in 2017. Net cash used in financing activities in 2018 is primarily related to the payment for purchase of property and equipment through finance leases of RMB279.9 million and the repayment of long-term bank borrowings of RMB70.6 million, partially offset by the contribution from non-controlling interest in a subsidiary of RMB196.3 million and proceeds from the issuance of discounted notes of RMB95.6 million.

Capital Expenditures

We had capital expenditures relating to the addition of property and equipment of RMB435.2 million, RMB1,248.8 million and RMB2,473.3 million (US$379.1 million) in 2018, 2019 and 2020, respectively, representing 12.8%, 33.0% and 51.2%, respectively, of our total net revenues. Our capital expenditures were primarily for building self-built data centers, purchasing network equipment, servers and other equipment. Our capital expenditures have been primarily funded by cash generated from our operations and net cash provided by financing activities. We estimate that our data center capital expenditures in 2021 will be within the range of RMB5.0 billion to RMB6.0 billion, which will primarily be used to build, or pursue acquisitions of, data centers, purchase network equipment, servers and other equipment to expand our business. We expect our data center capacity to increase by an aggregate amount of approximately 25,000 cabinets during the year of 2021, through both organic growth and strategic acquisitions. We may incur additional capital expenditure for real property purchase, data center construction and network capacity expansion if our actual development is beyond our current plan. We plan to fund the balance of our capital expenditure requirements for 2021 with cash from the proceeds from our operations, this offering, operations and additional bank borrowings, if available.

Holding Company Structure

21Vianet Group, Inc. is a holding company with no material operations of its own. We conduct our operations primarily through our PRC subsidiaries and consolidated affiliated entities in China. As a result, although other means are available for us to obtain financing at the holding company level, 21Vianet Group, Inc.'s ability to pay dividends and to finance any debt it may incur depends upon dividends paid by our subsidiaries. If our subsidiaries or any newly formed subsidiaries incur debt on its own behalf in the future, the instruments governing their debt may restrict its ability to pay dividends to 21Vianet Group, Inc. In addition, our PRC subsidiaries and consolidated affiliated entities are permitted to pay dividends to us only out of their retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. Under PRC law, our PRC subsidiaries and consolidated affiliated entities are required to set aside a portion of their after-tax profits each year to fund a statutory reserve and to further set aside a portion of its after-tax profits to fund the employee welfare fund at the discretion of the board or the enterprise itself. Although the statutory reserves can be used, among other ways, to increase the registered capital and eliminate future losses in excess of retained earnings of the respective companies, the reserve funds are not distributable as cash dividends except in the event of liquidation of these subsidiaries and consolidated affiliated entities.

C. Research and Development, Patents and Licenses, etc.

Research and Development and Intellectual Property

Our strong research and development capabilities support and enhance our service offerings. We have an experienced research and development team and devote significant resources to our research and development efforts, focusing on improving customer experience, increasing operational efficiency and bringing innovative solutions to the market quickly.

We have made continual investments and trainings for research and development to drive our growth in both mature and emerging businesses. We incurred RMB92.1 million, RMB88.8 million and RMB112.9 million (US$17.3 million) in research and development expenses for the years ended December 31, 2018, 2019 and 2020, respectively. As of December 31, 2020, our experienced research and development team consisted of 125 engineers, many of whom have more than 10 years of relevant industry experience.

Our research and development efforts have yielded 75 patents, 80 patent applications and 161 software copyright registrations as of December 31, 2020, all in China and focused on the areas including (i) energy saving technology, (ii) data center design and facility maintenance and operations, (iii) network operation and maintenance management, (iv) cloud-related technologies, and (v) edge computing and blockchain.

We rely on a combination of copyright, patent, trademark, trade secret and other intellectual property laws, nondisclosure agreements and other protective measures to protect our intellectual property rights. We generally control access to and use of our proprietary software and other confidential information through the use of internal and external controls, including physical and electronic security, contractual protections, and intellectual property law. We have implemented a strict security and information technology management system, including the prohibition of copying and transferring of codes. We educate our staff on the need to, and require them to, comply with such security procedures. We also promote protection through contractual prohibitions, such as requiring our employees to enter into confidentiality and non-compete agreements.

D. Trend Information

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for the year ended December 31, 2020 that are reasonably likely to have a material adverse effect on our net revenues, income, profitability, liquidity or capital resources, or that caused the disclosed financial information to be not necessarily indicative of future results of operations or financial conditions.

E. Off-Balance Sheet Arrangements

We have not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. We have not entered into any derivative contracts that are indexed to our shares and classified as shareholder's equity, or that are not reflected in our consolidated financial statements. Furthermore, we do not have any retained or contingent interest in assets transferred to an unconsolidated entity that serves as credit, liquidity or market risk support to such entity. Moreover, we do not have any variable interest in any unconsolidated entity that provides financing, liquidity, market risk or credit support to us or engages in leasing, hedging or research and development services with us.

F. Tabular Disclosure of Contractual Obligations

The following table sets forth our contractual obligations and commercial commitments as of December 31, 2020:

	Payment Due by Period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	(in thousands of RMB)				
Short-term borrowings[(1)]	34,000	34,000	–	–	–
Long-term borrowings[(1)(2)]	1,113,487	200,796	375,340	315,232	222,119
Notes payable[(3)]	1,957,470	1,957,470	–	–	–
Operating lease obligations[(4)]	2,073,454	415,892	367,795	174,385	1,115,382
Purchase commitments[(5)]	2,549,478	2,384,988	155,789	4,284	4,417
Finance lease minimum lease payment[(6)]	2,928,844	542,268	488,963	219,443	1,678,170
Total	10,656,733	5,535,414	1,387,887	713,344	3,020,088

Notes:

(1) As of December 31, 2020, our short-term bank borrowings bore a weighted average interest rate of 4.46% and have original maturity terms of one year. Our unused short-term and long-term borrowing facilities amounted to RMB1,574.6 million (US$241.3 million). We have pledged land use rights with the net book value of RMB141.0 million (US$21.6 million), property with the net book value of RMB264.8 million (US$40.6 million), leasehold improvements with the net book value of RMB90.9 million (US$13.9 million), construction-in-progress with the net book value of RMB238.8 million (US$36.6 million), and computer and network equipment with the net book value of RMB40.9 (US$6.3 million) for our borrowings.

(2) Long-term borrowings (including the current portions) outstanding as of December 31, 2020 bear a weighted-average interest rate of 5.61% per annum, and are denominated in Renminbi. These loans were obtained from financial institutions located in the PRC.

(3) The 2021 Notes with US$300.0 million of the principal amount outstanding due 2021 at an interest rate of 7.875% per annum.

(4) Operating lease obligations are primarily related to the lease of office and data center space.

(5) As of December 31, 2020, we had commitments of approximately RMB1,678.3 million (US$257.2 million) related to acquisition of machinery, equipment and construction in progress. In addition, we had outstanding purchase commitments in relation to bandwidth and cabinet capacity of RMB871.2 million (US$133.5 million).

(6) Related to finance leases for electronic equipment, optic fibers and property.

G. Safe Harbor

This annual report on Form 20-F contains forward-looking statements. These statements are made under the "safe harbor" provisions of Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements can be identified by terminology such as "will," "expects," "anticipates," "future," "intends," "plans," "believes," "estimates," "may," "intend," "is currently reviewing," "it is possible," "subject to" and similar statements. Some sections in this annual report on Form 20-F, as well as our strategic and operational plans, contain forward-looking statements. We may also make written or oral forward-looking statements in our reports filed with or furnished to the SEC, in our annual report to shareholders, in press releases and other written materials and in oral statements made by our officers, directors or employees to third parties. Statements that are not historical facts, including statements about our beliefs and expectations, are forward-looking statements and are subject to change, and such change may be material and may have a material adverse effect on our financial condition and results of operations for one or more prior periods. Forward-looking statements involve inherent risks and uncertainties. A number of important factors could cause actual results to differ materially from those contained, either expressly or impliedly, in any of the forward-looking statements in this annual report on Form 20-F. Potential risks and uncertainties include, but are not limited to, a further slowdown in the growth of China's economy, government measures that may adversely and materially affect our business, failure of the wealth management services industry in China to develop or mature as quickly as expected, diminution of the value of our brand or image due to our failure to satisfy customer needs and/or other reasons, our inability to successfully execute the strategy of expanding into new geographical markets in China, our failure to manage growth, and other risks outlined in our filings with the SEC. All information provided in this annual report on Form 20-F and in the exhibits is as of the date of this annual report on Form 20-F, and we do not undertake any obligation to update any such information, except as required under applicable law.

Employment Agreements

We have entered into employment agreements with each of our executive officers. Under these agreements, each of our senior executive officers is employed for a specified time period. We may terminate employment for cause, at any time, without advance notice or remuneration, for certain acts of the executive officer, such as conviction or plea of guilty to a felony or any crime involving moral turpitude, negligent or dishonest acts to our detriment, or misconduct or a failure to perform agreed duties. In such case, the executive officer will not be entitled to receive payment of any severance benefits or other amounts by reason of the termination, and the executive officer's right to all other benefits will terminate, except as required by any applicable law. We may also terminate an executive officer's employment without cause upon one-month advance written notice. In such case of termination by us, we are required to provide compensation to the executive officer, including severance pay, as expressly required by the applicable law of the jurisdiction where the executive officer is based. The executive officer may terminate the employment at any time with a one-month advance written notice, if there is any significant change in the executive officer's duties and responsibilities inconsistent in any material and adverse respect with his or her title and position or a material reduction in the executive officer's annual salary before the next annual salary review, or if otherwise approved by the board of directors.

Each executive officer has agreed to hold, both during and after the termination or expiry of his or her employment agreement, in strict confidence, and not to use, except as required in the performance of his or her duties in connection with the employment, any of our confidential information or trade secrets, any confidential information or trade secrets of our clients or prospective clients, or the confidential or proprietary information of any third party received by us and for which we have confidential obligations. The executive officers have also agreed to disclose in confidence to us all inventions, designs and trade secrets which they conceive, develop or reduce to practice and to assign all right, title and interest in them to us, and assist us in obtaining patents, copyrights and other legal rights for these inventions, designs and trade secrets.

In addition, each executive officer has agreed to be bound by non-competition and non-solicitation restrictions during the term of his or her employment and for one year following the last date of employment. Specifically, each executive officer has agreed not to (i) approach our clients, customers or contacts or other persons or entities introduced to the executive officer for the purpose of doing business with such persons or entities that will harm our business relationships with these persons or entities; (ii) assume employment with or provide services to any of our competitors, or engage, whether as principal, partner, licensor or otherwise, any of our competitors; or (iii) seek directly or indirectly, to solicit the services of any of our employees who is employed by us on or after the date of the executive officer's termination, or in the year preceding such termination.

Compensation

In 2020, the aggregate cash compensation we paid to our executive officers was approximately RMB10.3 million (US$1.6 million), which total amount included RMB0.3 million (US$0.05 million) for pension, retirement, medical insurance or other similar benefits for our executive officers. We did not provide any cash compensation to our non-executive directors in 2020. Other than the amounts stated above, no pension, retirement or similar benefits has been set aside or accrued for our executive officers or directors. None of our non-executive directors has a service contract with us that provides for benefits upon termination of employment.

In addition to the cash compensation referenced above, we also provide share-based compensation to our directors and officers. The total share-based compensation we provided to our directors and officers amounted to RMB60.1 million (US$9.2 million) in 2020. For option grants to our directors and officers, see "– Share Incentive Plans."

Share Incentive Plans

On July 16, 2010, we adopted our 2010 Plan to attract and retain the best available personnel, provide additional incentives to employees, directors and consultants and to promote the success of our business. We subsequently amended our 2010 Plan on January 14, 2011 and July 6, 2012. On May 29, 2014, we adopted our 2014 Plan on our annual general meeting, which was subsequently amended on April 1, 2015 and December 22, 2017 by unanimous written approval of our board of directors. On May 29, 2020, we adopted the 2020 Share Incentive Plan (the "**2020 Plan**"). Upon the adoption of the 2020 Plan, we will cease to grant any new awards under the 2010 Plan and the 2014 Plan (collectively the "**Existing Plans**") while the Existing Plans and outstanding awards granted thereunder shall remain effective and can be amended by the Company from time to time pursuant to the applicable terms thereunder. If any outstanding awards under the Existing Plans are subsequently forfeited, then the shares subject to such awards shall be available for the grant pursuant to the 2020 Plan. The 2020 Plan permits the grant of option, restricted share or restricted share units award. The maximum aggregate number of ordinary shares that may be issued pursuant to all awards under the 2020 Plan is 46,560,708 Class A ordinary shares. To the extent any award granted pursuant to our 2010 Plan or 2014 Plan terminates, expires, lapses or forfeited after the effective date for any reason, shares subject to such awards shall also become available to the grant of an award pursuant to the 2020 Plan. As of April 13, 2021, options to purchase 492,864 ordinary shares and 4,344,504 restricted share units, or RSUs, have been granted to our employees, directors and consultants without giving effect to the options that were exercised or terminated and RSUs that were vested.

Name	Options Granted	Restricted Share Units	Exercise Price (US$/ Share)	Date of Grant	Date of Expiration
Sheng Chen	*	–	0.15	July 16, 2010	July 16, 2020
	–	*	–	August 30, 2012	–
	–	*	–	November 23, 2013	–
	–	*	–	March 7, 2015	–
	–	*	–	November 21, 2015	–
	–	*	–	November 26, 2016	–
	–	*	–	August 18, 2019	–
Yoshihisa Ueno	–	*	–	October 1, 2012	–
	–	*	–	April 25, 2014	–
	–	*	–	December 2, 2017	–
	–	*	–	March 7, 2018	–
	–	*	–	May 15, 2019	–
Kenneth Chung-Hou Tai	–	*	–	October 16, 2012	–
	–	*	–	November 21, 2015	–
	–	*	–	August 14, 2016	–
	–	*	–	May 12, 2017	–
	–	*	–	March 7, 2018	–
Sean Shao	–	*	–	November 21, 2015	–
	–	*	–	May 15, 2019	–
Erhfei Liu	–	*	–	November 21, 2015	–
	–	*	–	May 15, 2019	–
Yao Li	–	*	–	August 15, 2018	–
Samuel Yuan-Ching Shen	–	*	–	August 18, 2020	–
Sharon Xiao Liu	*	–	0.15	August 17, 2012	August 17, 2022
	–	*	–	July 1, 2013	–
	*	–	0.15	May 24, 2015	May 24, 2025
	–	*	–	August 23, 2015	–
	–	*	–	March 5, 2017	–
	–	*	–	April 16, 2018	–
	–	*	–	May 16, 2018	–
	–	*	–	January 2, 2020	–
Shiqi Wang	–	*	–	April 16, 2018	–
	–	*	–	January 2, 2020	–
Chunfeng Cai	–	*	–	March 6, 2016	–
	–	*	–	May 21, 2017	–
	–	*	–	May 16, 2018	–
	–	*	–	January 2, 2020	–
	–	*	–	November 24, 2020	–
Tim Chen	–	*	–	August 18, 2020	–
Other individuals as a group	28,953,524	8,329,851	0.15 to 0.85	–	–

* *Shares underlying vested options are less than 1% of our total outstanding shares.*

Our 2010 Plan, 2014 Plan and 2020 Plan have similar terms, the following paragraphs describe the principal terms of these plans.

Plan Administration. Our board and the compensation committee of the board will administer our plans. A committee of one or more members of the board designated by our board or the compensation committee is also authorized to grant or amend awards to participants other than senior executives. The committee will determine the provisions and terms and conditions of each award grant. It shall also have discretionary power to interpret the terms of our plans.

Award Agreement. Awards granted under our plans are evidenced by an award agreement that sets forth terms, conditions and limitations for each award, which may include the term of an award, the provisions applicable in the event the participant's employment or service terminates, and our authority to unilaterally or bilaterally amend, modify, suspend, cancel or rescind an award.

Eligibility. We may grant awards to our employees, consultants and directors. However, no shares may be optioned, granted or awarded if such action would cause an incentive share option to fail to qualify as an incentive share option under Section 422 of the Internal Revenue Code of 1986 of the United States.

Acceleration of Awards upon Change in Control. The participant's awards shall become fully exercisable and all forfeiture restrictions on such awards shall lapse, unless converted, assumed or replaced by a successor.

Exercise Price. The exercise price of an option shall be determined by the plan administrator and set forth in the award agreement and may be a fixed or variable price related to the fair market value of the shares, to the extent not prohibited by applicable laws. Subject to certain limits set forth in the plan, the exercise price may be amended or adjusted in the absolute discretion of the plan administrator, the determination of which shall be final, binding and conclusive. To the extent not prohibited by applicable laws or any exchange rule, a downward adjustment of the exercise prices of options shall be effective without the approval of the shareholders or the approval of the affected participants.

Vesting Schedule. In general, our plan administrator determines, or the evidence of the award specifies, the vesting schedule.

Amendment and Termination of the Plan. With the approval of our board, our plan administrator may, at any time and from time to time, amend, modify or terminate the plan, provided, however, that no such amendment shall be made without the approval of our shareholders to the extent such approval is required by applicable laws, or in the event that such amendment increases the number of shares available under our plan, permits our plan administrator to extend the term of our plan or the exercise period for an option beyond ten years from the date of grant or results in a material increase in benefits or a change in eligibility requirements, unless we decides to follow home country practice.

Employees

We had 2,220, 2,295 and 2,599 employees as of December 31, 2018, 2019 and 2020, respectively. The following table sets forth the number of our employees by function as of December 31, 2020:

	As of December 31, 2020	
Functional Area	**Number of Employees**	**% of Total**
Operations	1,345	52%
Sales, marketing and customer support	337	13%
Research and development	182	7%
General and administrative	735	28%
Total	2,599	100%

Among our total employees as of December 31, 2020, 1,361 were located in Beijing, and 1,238 in other cities in China.

Our recruiting efforts include on-campus recruiting, online recruiting and the use of professional recruiters. We partner with leading national research institutions and employ other measures designed to bring us into contact with suitable candidates for employment.

As required by regulations in China, we participate in various government statutory employee benefit plans, including social insurance funds, namely a pension contribution plan, a medical insurance plan, an unemployment insurance plan, a work-related injury insurance plan and a maternity insurance plan, and a housing provident fund. We are required under PRC law to contribute to employee benefit plans at specified percentages of the salaries, bonuses and certain allowances of our employees up to a maximum amount specified by the local government from time to time.

We enter into standard labor contracts with our employees. We also enter into standard confidentiality and non-compete agreements with our senior management. The non-compete restricted period typically expires two years after the termination of employment, and we agree to compensate the employee with a certain percentage of his or her pre-departure salary during the restricted period.

We believe that we maintain a good working relationship with our employees, and we have not experienced any major labor disputes.

Legal Proceedings

From time to time, we are subject to legal proceedings, investigations and claims incidental to the conduct of our business. For risks and uncertainties relating to the pending case against us. We may be subject to legal proceedings or arbitration claims in the ordinary course of our business, and the court ruling or arbitration award may not be favorable to us. We are currently not involved in any legal or administrative proceedings that may have a material adverse impact on our business, financial position or profitability.

Litigation

In September 2014, our Company and certain of our officers and directors were named as defendants in two putative securities class actions filed in U.S. federal district courts in Texas: Sun v. 21Vianet et al., Civil Action No. 14 CV 926 (E.D. Tex.) and Singh v. 21Vianet et al., Civil Action No. 14 CV 894 (E.D. Tex.). The Sun action originally was filed in the U.S. District Court for the Southern District of Texas, and was transferred to the U.S. District Court for the Eastern District of Texas, or the Court. The complaints in both actions alleged that certain of our Company's financial statements and other public disclosures contained misstatements or omissions and asserted claims under the U.S. securities laws. On September 15, 2015, the Court entered an order consolidating the cases and on September 21, 2015, the Court entered an order appointing a lead plaintiff and lead counsel for the consolidated case. On September 13, 2016, the lead plaintiff filed an amended complaint against our Company and certain of our personnel and sought to represent a class of persons who allegedly suffered damages as a result of their trading activities related to our Company's ADSs from August 20, 2013 to August 16, 2016. After our motion to dismiss the case was denied, on April 9, 2018, the lead plaintiff filed an unopposed motion for preliminary approval of class action settlement, requesting that the Court (i) preliminarily approve a settlement agreement, pursuant to which the parties agreed to settle the case for US$9,000,000, (ii) preliminarily certify the proposed settlement class, (iii) approve the parties' proposed notice to the settlement class, and (iv) set the date for a hearing by the Court to consider the final approval of the settlement and entry of a proposed final judgment approving class action settlement, the plan of allocation of settlement proceeds, and lead counsel's application for an award of attorneys' fees and expenses. The Court granted that motion and, on October 31, 2018, held a settlement approval hearing. On November 9, 2018, the Court approved the settlement and issued final judgment, ending the case.

Disputes with Shanghai 21Vianet Information System Co., Ltd.

Shanghai 21Vianet Information System Co., Ltd. is a company bearing "21Vianet" in its name but is not affiliated with us. In January 2008, 21Vianet Beijing and 21Vianet China brought two lawsuits against Shanghai 21Vianet Information System Co., Ltd. in a Beijing court for intellectual property rights infringement and unfair competition. 21Vianet Beijing and 21Vianet China prevailed in each case. The court ordered Shanghai 21Vianet Information System Co., Ltd. to stop infringing our trademark and stop engaging unfair competition activities. 21Vianet Beijing and 21Vianet China was also awarded RMB150,000 in damages for each case. In October 2010, 21Vianet China filed another complaint against Shanghai 21Vianet Information System Co., Ltd. for domain name infringement and unfair competition. In July 2011, Shanghai 21Vianet Information System Co., Ltd. settled the case with us and transferred the domain name www.21vianet.com.cn to us for free. However, Shanghai 21Vianet Information System Co., Ltd. may continue to include "21Vianet" as part of its official company name when the name is spelt out in full, while using "21Vianet" or our logo in a short form or other context is prohibited.

Our executive chairman, Mr. Sheng Chen, holds a minority equity interest in Shanghai 21Vianet Information System Co., Ltd. due to historical reasons. As a result of the restriction on equity transfer pursuant to its articles of association, it is not practical for Mr. Chen to transfer his equity interest in Shanghai 21Vianet Information System Co., Ltd. to us or any other parties. Mr. Chen, however, has executed an irrevocable power of attorney, pursuant to which Mr. Chen has appointed 21Vianet Beijing as his attorney-in-fact to attend shareholders' meeting of Shanghai 21Vianet Information System Co., Ltd. and to exercise all the shareholder's voting rights. Such power of attorney remains valid and irrevocable so long as Mr. Chen remains the shareholder of Shanghai 21Vianet Information System Co., Ltd.

Interest Rate Risk

Our exposure to interest rate risk primarily relates to interest expenses incurred in respect of bonds payable, borrowings, finance lease liabilities as well as interest income generated by excess cash, which is mostly held in interest-bearing bank deposits. As of December 31, 2020, we had (i) short-term and long-term borrowings (current portions) with an aggregate outstanding balance of RMB214.3 million (US$32.8 million), (ii) long-term borrowings (excluding current portions) with an aggregate outstanding balance of RMB887.0 million (US$135.9 million), and (iii) an outstanding principal balance of US$300.0 million with respect to the 2021 Notes payable.

The short-term bank borrowings bore a weighted average interest rate of 4.46% per annum. The long-term borrowings bore weighted-average interest rate of 5.61% per annum. The 2020 Notes bore an interest rate of 7.000% per annum and an effective interest rate of 6.98% per annum. The 2021 Notes bore an interest rate of 7.875% per annum. We also had RMB285.9 million (US$43.8 million) in short-term investments with original maturities of greater than 90 days but less than 365 days. A hypothetical one percentage point (100 basis-point) decrease in interest rates would have resulted in a decrease of approximately RMB27.6 million (US$4.2 million) in interest expense for the year ended December 31,

2020. We have not used derivative financial instruments in our investment portfolio. Interest earning instruments and interest-bearing obligations carry a degree of interest rate risk. We have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in market interest rates. However, our future interest income and interest expenses may fluctuate due to changes in market interest rates.

Foreign Exchange Risk

We earn most of our revenues and incur most of our expenses in Renminbi, and most of our sales and purchase contracts are denominated in Renminbi. We have not used any derivative financial instruments to hedge our exposure to foreign exchange risk. The Renminbi depreciated by 1.6% against the U.S. dollar in 2019 and then appreciated 6.5% in 2020. The Company intends to hold U.S. dollar-denominated financial assets and will convert to RMB according to the trend of exchange rate changes. As of December 31, 2020, we had total U.S. dollar-denominated cash and cash equivalents, restricted cash and short-term investments in the amount of US$295.9 million. A hypothetical 10% increase in the exchange rate of the U.S. dollar against the RMB would have resulted in an increase of RMB193.0 million (US$29.6 million) in the value of our U.S. dollar-denominated financial assets at December 31, 2020.

The conversion of Renminbi into foreign currencies, including U.S. dollars, is based on rates set by the People's Bank of China. Since June 2010, the RMB has fluctuated against the U.S. dollar, at times significantly and unpredictably, and in recent years the RMB has depreciated significantly against the U.S. dollar. It is difficult to predict whether the depreciation will continue and how market forces or PRC or U.S. government policy may impact the exchange rate between the RMB and the U.S. dollar in the future. As our costs and expenses are mostly denominated in RMB, the appreciation of the RMB against the U.S. dollar would increase our costs in U.S. dollar terms. In addition, as our operating subsidiaries and VIEs in China receive revenues in RMB, any significant depreciation of the RMB against the U.S. dollar may have a material and adverse effect on our revenues in U.S. dollar terms and financial condition, and the value of, and any dividends payable on, our ordinary shares. For example, to the extent that we need to convert U.S. dollars into Renminbi for capital expenditures and working capital and other business purposes, appreciation of the Renminbi against the U.S. dollar would have an adverse effect on the RMB amount we would receive from the conversion. Conversely, if we decide to convert Renminbi into U.S. dollars for the purpose of making payments for dividends on our ordinary shares or ADSs, strategic acquisitions or investments or other business purposes, appreciation of the U.S. dollar against the Renminbi would have a negative effect on the U.S. dollar amount available to us.

Significant Investments Held, Material Acquisitions or Disposals of Subsidiaries and Future Plans Regarding Capital Asset Acquisitions or Material Investments

Save for any investments in the subsidiaries of VNET, VNET had no significant investments held or material acquisitions and disposals of subsidiaries, associates and joint ventures during the year ended December 31, 2020. As at December 31, 2020, VNET had no clearly defined plans relating to significant capital asset acquisitions or material investments, nor future plans of significant disposals of subsidiaries, associates and joint ventures.

Gearing Ratio

As at December 31, 2020, the gearing ratio (total liabilities divided by total assets) of VNET was approximately 64% (December 31, 2019: 63%).

B. MANAGEMENT DISCUSSION AND ANALYSIS OF THE RESULTS OF THE TARGET GROUP FOR THE YEAR ENDED 31 DECEMBER 2021

Unless otherwise indicated and except where the context otherwise requires, references in this annual report on Form 20-F to:

- "ADSs" refers to our American depositary shares, each representing six Class A ordinary shares, par value US$0.00001 per share;

- "VNET," "we," "us," "our company," and "our" refer to VNET Group, Inc., a Cayman Islands exempted company and its subsidiaries and, in the context of describing our operations and consolidated financial information, also include its consolidated affiliated entities;

- "China" or the "PRC" refers to the People's Republic of China, excluding, for the purpose of this annual report only, Hong Kong, Macau and Taiwan;

- "Greater Bay Area" refers to Guangdong-Hong Kong-Macau Greater Bay Area, consisting of Guangzhou, Shenzhen, Zhuhai, Foshan, Dongguan, Zhongshan, Jiangmen, Huizhou, and Zhaoqing, as well as Hong Kong and Macau;

- "ordinary shares" or "shares" refer to our ordinary shares, which include all Class A ordinary shares, par value US$0.00001 per share, Class B ordinary shares, par value US$0.00001 per share, and Class C ordinary shares, par value US$0.00001 per share, collectively;

- "variable interest entities," or "VIEs," refer to Beijing Yiyun Network Technology Co., Ltd. (previously known as Beijing aBitCool Network Technology Co., Ltd.), or VNET Technology, Beijing iJoy Information Technology Co., Ltd., or BJ iJoy, WiFire Network Technology (Beijing) Co., Ltd. (previously known as aBitcool Small Micro Network Technology (BJ) Co., Ltd.), or WiFire Network and Shanghai Zhiyan Yunwei Technology Co., Ltd., or SH Zhiyan, four domestic PRC companies in which we do not have equity interests but whose financial results have been consolidated into our consolidated financial statements in accordance with U.S. GAAP due to our having effective control over, and our being the primary beneficiary of, the four companies;

- "consolidated affiliated entities" refer to the variable interest entities and their direct and indirect subsidiaries; and

- "RMB" and "Renminbi" refer to the legal currency of China. Unless otherwise noted, all translations from RMB to U.S. dollars and from U.S. dollars to RMB in this annual report were made at a rate of RMB6.3726 to US$1.00, the exchange rate on December 30,2021 as set forth in the H.10 statistical release published by the Federal Reserve Board.

Business Overview

We are a leading carrier-neutral and cloud-neutral data center service provider in China. We have one of the largest carrier-neutral data center networks in China with our 40 self-built data centers and 64 partnered data centers with an aggregate capacity of 78,540 cabinets under our management as of December 31, 2021. Our data centers are concentrated in tier-1 cities in China and their surrounding regions, which have favorable supply-demand dynamics, owing to dense internet traffic, scarce resources and high demand for data center facilities. Most of our data centers and our POPs are connected across China.

We offer managed hosting services to host our customers' servers and networking equipment and provide interconnectivity to improve the performance, availability and security of their internet infrastructure. We have adopted a ‘‘dual-core’’ strategy to address both retail and wholesale data center market opportunities. Our managed retail services provide different levels of services that are scalable to meet our customers' needs, from a single cabinet up to megawatt-scale deployments. Our managed wholesale services provide customers with new data center sites constructed and developed by us based on their specified standards. We believe that the scale of our data center footprint and networking assets as well as our carrier- and cloud-neutrality, position us well to capture the vast opportunities in the rapidly expanding market of internet and cloud computing infrastructure services in China.

In addition, we are a first mover among China's carrier-neutral data center service providers in offering cloud services through partnerships to cover public, private and hybrid cloud scenarios. We provide customized enterprise VPN services and solutions, including software-defined wide area network, or SD-WAN, to enterprises across various industries. These value-added services strengthen our capability to provide quality services and meet our customers' additional demands.

According to Frost & Sullivan, the continuing drivers for the data center demands consist of (i) growing IT outsourcing capacity by enterprises; (ii) implementation of next-generation 5G network and disruptive technologies; (iii) growing data center service demand from China's cloud service providers and enterprise digital transformation; (iv) supportive government policies, despite the recent regulatory headwinds; (v) customer segments drive data center service demand; and (vi) the overall growing trend of generating and processing data and robust growth in data traffic. From 2016 to 2020, China's carrier-neural data center service market has been growing by a CAGR of 22.2% and is expected to grow by a CAGR of 19.3% from 2020 to 2025. China's cloud service market has been growing by a CAGR of 38.5% from 2016 to 2020 and is expected to grow by a CAGR of 24.9% from 2020 to 2025. As a leading carrier-neutral and cloud-neutral data center service provider in China, we had a 10.8% market share in the carrier-neutral data center service market in terms of data center service revenues in 2020.

We are a pioneer in the carrier-neutral data center industry in China and commenced our operations in 1999. According to Frost & Sullivan, we are the first carrier-neutral data center service providers in China with infrastructure interconnected with all major network providers, which connect and share data traffic to help scale the rapid development of the early internet industry in China. Based on our partnership with Microsoft to introduce Azure and Office 365 in China in 2013, we are also the first carrier-neutral data center service provider to offer global cloud services in China and our services have helped accelerate the digital transformation of our enterprise customers.

We are a carrier-neutral internet infrastructure service provider. Our infrastructure is interconnected with the networks operated by all China's telecommunications carriers, major non-carriers and local internet service providers. The interconnectivity enables each of our data centers to function as a network access point for our customer's data traffic. In addition, we believe that our proprietary smart routing technology allows us to automatically select an optimized route to direct our customers' data traffic to ensure fast and reliable data transmission. We believe this advanced interconnectivity within and beyond our network distinguishes ourselves from our competitors and provides an effective solution to address our customers' needs that arise from inadequate public internet infrastructure and network interconnectivity in China. As a result, businesses are increasingly relying upon internet infrastructure services providers and in particular, carrier-neutral internet infrastructure services providers, to enhance and optimize key elements of their IT and network infrastructure.

With a nationwide data center network and comprehensive service offerings, we have attracted a diversified and loyal customer base. As of December 31, 2021, we had over 1,400 customers for our managed hosting services and over 6,500 enterprise customers in total. We also enjoy long-standing relationships with our customers and have high customer retention, as evidenced by our low average monthly hosting churn rate for managed hosting services, which was 0.5%, 0.3% and 0.2% in 2019, 2020 and 2021, respectively.

Our Service Offerings

Through our quality data center network, we offer comprehensive hosting and related services, including:

- *Managed Hosting Services* consisting of managed retail services and managed wholesale services. Our managed retail services include (i) colocation services that dedicate data center space to house our customers' servers and networking equipment and provide tailored server administration services, (ii) interconnectivity services that allow customers to connect their servers with each other, internet backbones in China and other networks through our Border Gateway Protocol, or BGP, network, or our single-line, dual-line or multiple-line networks, and (iii) value-added services, including hybrid IT services, bare metal services, firewall services, server load balancing, data backup and recovery, data center management, server management, and backup server services. To address the wholesale IDC market opportunities, we established a ''dual-core'' strategy in 2019 to expand our services to managed wholesale services to China's internet giants and large-scale cloud computing service providers. We construct and deliver data centers based on these customers' required specifications and standards;

- *Cloud Services* that allow customers to run their applications over the internet using our IT infrastructure rather than having the infrastructure on their own premises; and

- *VPN Services* that extend customers' private networks by setting up secure and dedicated connections through the public internet.

Our data centers host the servers of our customers and meet their needs to deploy computing, network, storage and IT infrastructure. Our services are scalable, allowing our customers to purchase space and power and upgrade connectivity and services as their requirements evolve. In addition, our customers benefit from our data centers' wide range of physical security features, including sensitive smoke detection systems, fire suppression systems, secured access, around-the-clock video camera surveillance and security breach alarms. Our data centers are fully-redundant and feature resilient power supplies, energy efficient design, connection with multiple network providers and 24/7 on-site support provided by our skilled engineers. As a result, we are able to provide service-level agreement for 99.9% uptime for power for our self-built data centers. As a carrier-neutral data center service provider, we provide high interconnectivity to our customers with our access to multiple carriers and service providers and the availability of multiple-provider bandwidth. By securing multiple suppliers for connectivity and using redundant hardware, we are able to guarantee 99.9% internet connectivity uptime for our self-built data centers.

Managed Hosting Services

We have been providing managed retail services since the inception of our operations in 1999 and started to provide managed wholesale services in 2019 to implement our "dual-core" strategy that we developed in 2019.

Managed Retail Services. Our managed retail services include colocation services, interconnectivity services, and value-added services.

- *Colocation Services* allow customers to lease partial or entire cabinets for their servers. Our customers have full control over their server(s) housed in our data centers. Depending on customer needs, we provide different levels of tailored server administration services, including operating system support and assistance with updates, server monitoring, server backup and restoration, server security evaluation, firewall services, and disaster recovery. Our customers' servers are housed in our data centers providing redundant power sources and heating, ventilating and air conditioning systems. Our colocation services relieve customers from the daily pressures of IT infrastructure maintenance so that they can focus on their core businesses. Customers have the option to either place their servers and equipment in standard cabinets dedicated for their private use, or in cabinets shared with other customers. They can customize their cabinet space for their servers, network connections and equipment. Customers can elect to buy the hardware that they place within their cabinets from their chosen suppliers. In addition, customers can also lease power-enabled blank space, where they can place their own cabinets in our data centers or use our services to build their customized cabinet space.

- *Interconnectivity Services* are provided by us in the following ways:

  - Border Gateway Protocol ("**BGP**") Network Services. We provide network services that use BGP routing protocol and policies, which allow the internet to become a decentralized system and thereby reduces traffic congestion and data transmission time;

  - Single-line Network Services. Some of our customers choose to connect their servers only to one telecommunication carrier in China. Based on their selections, we provide them with network connection to the major telecommunication carriers, including China Telecom, China Unicom and China Mobile; and

  - Multiple-line Network Services. As a carrier-neutral service provider, our data centers are connected to all carrier and non-carrier networks in China. Customers then may choose to connect their servers to two or multiple networks, which provides more cost-effective internet access and ensures better business continuity. Our interconnectivity services connect our customers with each other, connect our data centers with telecommunication carriers' backbone network and other networks. We provide cross-connection services to our customers. Upon the request of the customers, we utilize single or multi-mode fibers to create links between the customers directly and privately.

- *Value-Added Services* are provided by us in the following ways:

  - Hybrid IT Services. Our hybrid IT services provide customers with a complete package of infrastructure service offerings, conveniently bundled to expedite the customer's process to launch their applications and products to the extent possible. In conjunction with our infrastructure-as-a-service, or IaaS, platform, hybrid IT services combine colocation, servers, connectivity, storage and customer services to save IT infrastructure installation time, and provide a complete, reliable, and secured environment for customer's IT demands. As more customers move their IT resources to the cloud, our cloud-neutral platform will enable our hybrid IT services to provide both private and public cloud services as well as their inter-linked connections;

  - Private Cloud, Hybrid Cloud and Cloud Native Services. We provide private cloud, hybrid cloud and multi-cloud managed services to address enterprises' needs in aspects of data sovereignty, cost of ownership, and customization through our proprietary technologies and technical integration with selected partners, such as VMWare, Redhat and ZStack. Through the acquisition of BJ TenxCloud, we expanded our hosting service offerings to provide digitalization solutions to customers based on our in-house developed cloud native platform. Customers can fully exploit elasticity and flexibility of our cloud solutions and modernize its applications and infrastructure, to achieve more efficient software development and production;

  - Other Value-Added Services. To complement our hosting services and enhance our customers' experiences, we also provide other value-added services, including bare metal services, firewall services, server load balancing, data backup and recovery, data center management, server management, and backup server services. In addition, we also provide customers with traffic charts and analysis, gateway monitoring for servers, domain name system setup, defense mechanism against distributed denial of service (DDOS) attacks, basic setting of switches and routers, and virus protections.

Managed Wholesale Services. Our managed wholesale services started in 2019 and provide internet giants and large-scale cloud computing service providers with new data center sites constructed and developed by us. Based on the specific requirements of our customers, we source properties for new data center sites by acquiring or leasing green-field sites or existing industrial buildings from third parties, and then design and, through cooperation with developers, contractors, and suppliers, build the data center facilities with advanced design and high technical specifications. We believe our core competency and capabilities, acquired from decades of industry experience in the retail segment, are also applicable and critical when we expand our business into the wholesale segment and develop wholesale data centers.

- *Planning:* We engage with our clients from the site selection and planning stage and choose the sites for wholesale data centers at the strategic locations which fits into our clients' IT infrastructure deployment and provides great access to power and connectivity. Backed by multi-year experience and strong presence in key markets, we are able to conduct in-depth analysis and select the most suitable location based on clients' requirements by acquiring or leasing green-field sites or existing industrial buildings from third parties. Our team works closely with local government authorities to obtain necessary permits and approvals and with electric utilities to obtain sufficient power supply. We also actively cooperate with telecommunication carriers to ensure multi-carrier connectivity to our wholesale data centers.

- *Design:* Leveraging our technological know-how from our internal design teams and a comprehensive data center product portfolio, developing and accumulating through the designs and construction of retail data centers, we are dedicated to ensuring that each of our wholesale data centers meets the specific requirements of our clients and achieves industry leading energy efficiency and operating performance. Our technology strengths, such as advanced cooling technology and power management technology, are integrated due to close collaboration among our internal design team, research and development team and external design institutes.

- *Construction:* We believe our well-established relationships with high quality contractors and suppliers, combined with our specialized construction team consisting of experienced professionals, help us to ensure fast delivery and cost effectiveness in data center construction. As opposed to retail data centers, typically the wholesale data centers are built to suit and customized to fulfill our clients' different technical requirements. Furthermore, our clients require us to deliver wholesale data centers in large volumes within a prescribed construction period.

- *Operations:* We are one of the first carrier neutral data center service providers in China and commenced operations in 1999. Since then, we haven't encountered any disastrous accident over the last 20 years, demonstrating our strong operational expertise. We are able to provide service-level agreement for 99.9% uptime for power and 99.9% uptime for network connectivity for our self-built data centers. Our operational excellence to deliver wholesale data centers with high reliability, availability, security and manage-ability are sought by our wholesale clients. As a result, operations and management expertise becomes an increasingly important criteria when they select their data center partners.

Cloud Services

We started providing public cloud services in 2013 through our cooperation with Microsoft. Under our cooperation arrangement with Microsoft, we provide Microsoft's cloud services, including Azure, Office 365, Dynamics 365 and Power Platform, to customers in mainland China by entering into service agreements with such end customers.

We provide infrastructure-as-a-service, or IaaS, platform-as-a-service, or PaaS, and software-as-a-service, or SaaS, to our enterprise and individual end customers on the public cloud. Microsoft Azure provides our customers with a one-stop shop to purchase a portion of the pooled computing resources, control the applications uploaded to the virtual servers and/or access to the applications run by various operators on the cloud infrastructure, and pay on an on-demand basis. Through Office 365 services, we provide our customers with not only the complete Office applications, but also business-class email, file sharing and HD video conferencing, all working together and connected in the public cloud so that customers can have access to everything they need to run their business from anywhere.

The total customer billing amounts are divided between Microsoft and us and we retain a portion of the total customer billing amounts based on the agreed-upon metrics. All sales amounts from our services to customers are deposited into an escrow account which are jointly administered by Microsoft and us, and we settle the payments to Microsoft on a monthly basis. In addition, we are entitled to receive incentive payments from Microsoft upon the completion of certain sales or services conditions. Our current agreement with Microsoft has a term of ten years till 2027.

VPN Services

We offer VPN services, primarily through Dermot Holdings Limited and its subsidiaries, or Dermot Entities, which we acquired in August 2014. Dermot Entities offer customers best-in-class, enterprise-grade network services in numerous cities throughout Greater China and the wider Asia-Pacific region. Dermot Entities provide enterprise network solutions including Multiprotocol Label Switching (“**MPLS**”) and Software-Defined WAN (“**SD-WAN**”), internet access and network security solutions and are starting to add Cloud & SaaS solutions into the product portfolio. We provide fully managed network enabling connectivity with 183 POPs across Asia, of which 73 POPs are for VPN services. We are among the first official members of the China Cross-border Data Telecommunications Industry Alliance for being recognized as legally compliant by China's Communications Administration. Additionally, we have been appointed as one of the SD-WAN Services Standard Drafting Units of China Communications Standards Association (“**CCSA**”). We are among the first ICT service providers in Greater China to obtain several ISO international certifications including ISO/IEC 27001: 2013, ISO/IEC 20000-1: 2018, and ISO 9001: 2015 for information security, IT service management, and quality management, respectively. We also obtained the SD-WAN Ready certificate for overall solutions issued by China Academy of Information and Communications Technology in 2020.

Our Infrastructure

Our infrastructure, which consists of our data centers and data transmission network, is the foundation upon which we provide services to our customers. As of December 31, 2021, we operate 40 self-built data centers and 64 partnered data centers located in tier-1 and their surrounding cities, including all of China's major internet hubs, with 78,540 cabinets under management. Our extensive network, consisting of 183 POPs, is a ‘‘high-speed internet railway’’ that connects our data centers with each other and links them to China's telecommunication backbones.

Our Data Centers

We adopt a distributed deployment method when choosing locations for our partnered data centers based on the specific requests of our customers, demands in different cities and our strategy for POP establishment; therefore, the locations and number of our partnered data centers are subject to change from time to time. We operate two types of data centers: self-built and partnered. We define ‘‘self-built’’ data centers as those with our owned cabinets, and data center equipment housed in buildings we owned, leased from third parties, or we purchased from third parties. We define ‘‘partnered’’ data centers as the data center space and cabinets we leased from China Telecom, China Unicom and other third parties through agreements. As of December 31, 2021, we operate 40 self-built data centers housing 74,143 cabinets and 64 partnered data centers housing 4,397 cabinets.

The table below sets forth the number of data centers and cabinets under our management as of December 31, 2019, 2020 and 2021, respectively.

	As of December 31,		
	2019	2020	2021
Data Centers			
Self-built	26	32	40
Partnered	51	52	64
Total	77	84	104
Cabinets			
Self-built	32,047	49,876	74,143
Partnered	4,244	3,677	4,397
Total	36,291	53,553	78,540

Our data centers are located in over 30 cities as of the date of this annual report. Our nationwide network of data centers not only enables us to serve customers in extended geographic areas, but also establishes a national data transmission network that sets up connections among carriers and service providers in various locations.

The table below sets forth our portfolio of self-built cabinets housed by our data centers as of December 31, 2021.

	As of December 31, 2021	
	Number of Self-built Cabinets Housed	**Percentage of Contribution**
Greater Beijing Area	Approximately 37,200	50.1%
Yangtze River Delta	Approximately 21,300	28.8%
Greater Bay Area	Approximately 9,300	12.6%
Others	Approximately 6,300	8.5%
Total	Approximately 74,100	100.0%

We build and operate our data centers in compliance with high industry standards in order to provide our customers with secure and reliable environments that are necessary for optimal internet interconnectivity. Our data centers generally feature:

- *Resilient Power* – Redundant, high-capacity and stable power supplies, backed by uninterruptible power supply, or UPS, high-performance batteries and diesel generators;

- *Physical Security* – Round-the-clock monitoring by on-site personnel, which includes verification of all persons entering the building, security barriers, video camera surveillance and security breach alarms;

- *Controlled Access* – Access to the buildings, data floors and individual areas designated for particular customers via individually- programmed access cards and visual identification;

- *Fire Detection and Suppression* – Sensitive smoke detectors linked to building management systems provide early detection to help avoid fire, loss and business disruption. These are complemented by an environmentally-friendly gas-based or water mist fire suppression system to put out fires;

- *Air Conditioning* – To ensure optimal performance and avoid equipment failure, all data center floors are managed to make sure that customers' equipment is maintained at a controlled temperature and humidity; and

- *24/7 Support* – We staff our data centers with capable and experienced service teams and we believe we were the first data center service provider in China to offer 24/7 customer service.

These features minimize chances of interruption to the servers housed in our data centers and ensure the business continuity of our customers. In addition, we believe we were the first data center service provider in China to receive both the ISO 9001 quality system certification by the American Registrar Accreditation Board and a certification by the United Kingdom Accreditation Service.

Our Network

Our network transmits data and directs internet traffic, forming an internet highway system that is linked to the networks of major carriers, non-carriers and ISPs and enhances communications among our data centers, our customers and end users located throughout China and around the world. As of December 31, 2019, 2020 and 2021, our network connected 165, 165 and 183 POPs throughout China.

Our network also features numerous interfaces with four telecommunication carriers in China, which are China Telecom, China Unicom, China Mobile and China Education Network. Our network is not only connected to the headquarters of each carrier, but also with their local networks throughout China.

Due to our high-quality data center infrastructure, extensive data transmission network and proprietary smart routing technologies, we are able to deliver high-performance hosting and related services that can effectively meet our customers' business needs, improve interconnectivity among service providers and end users, and effectively address the issue of inadequate network interconnectivity in China.

Organizational Development

Our employees are our most important asset. We place great emphasis on employee development. We have formulated the Employee Training Management System and established a multi-level employee training system. We have built the VNET E-Learning platform to cultivate talents for each business line via digital means and achieve knowledge co-creation and sharing. We have engaged in all business lines in building the platform and continuously improved the online learning course system through resource co-creation. Currently, a total of 350 premium courses have been launched online. In addition to the internal training system, we also provide reimbursement for all employees to pursue academic degrees and professional certifications required for their positions. In 2021, we arranged 16 external training sessions and reimbursed RMB140,000 for employees' expenses on certification exams.

We also care about our employees' wellbeing. We aim to create a comfortable and safe workplace for our employees. In strict compliance with occupational health and safety laws and regulations, we are Occupational Health and Safety Management System (ISO45001) certified and make continuous efforts to improve our systems. Considering the needs of employees with childcare obligations, we strictly implement parental leave policies to allow for more flexible working hours for breastfeeding employees. In 2021, we reconstructed the nursing room to make it more comfortable, private, sanitary and convenient for those that breastfeed.

OPERATING AND FINANCIAL REVIEW AND PROSPECTS

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our consolidated financial statements and the related notes included elsewhere in this annual report on Form 20-F. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth in other parts of this annual report on Form 20-F.

A. Operating Results

Overview

We are a leading carrier-neutral and cloud-neutral data center services provider in China. We have one of the largest carrier-neutral data center networks in China with our 40 self-built data centers and 64 partnered data centers with an aggregate capacity of 78,540 cabinets under our management as of December 31, 2021.

We offer managed hosting services to host our customers' servers and networking equipment and provide interconnectivity to improve the performance, availability and security of their internet infrastructure. We also provide cloud services through partnerships to cover public, private and hybrid cloud scenarios. In addition, we provide customized enterprise VPN services and solutions, including SD-WAN, to enterprises across various industries. These value-added services strengthen our capability to provide quality services and meet our customers' additional demands.

We historically provided managed network services, consisting of CDN services, hosting area network services, route optimization and last-mile broadband services. In September 2017, we disposed of 66.67% of the equity interests in six wholly-owned subsidiaries engaged in the managed network services business, collectively referred as to the WiFire Entities. In September and December 2017, we disposed of all of our equity interests and shares in Sichuan Aipu Network Co., Ltd. and its affiliates, collectively referred as the Aipu Group, engaged in the last-mile broadband business. As a result of these transactions, we deconsolidated the financial results related to the managed network services business from our consolidated statements of operations starting from the fourth quarter of 2017.

Our total net revenues generated from providing hosting and related services increased from RMB3,789.0 million in 2019 to RMB4,829.0 million in 2020 and further to RMB6,189.8 million (US$971.3 million) in 2021, representing a CAGR of 27.8% from 2019 to 2021. The total number of cabinets under our management increased from 36,291 as of December 31, 2019, 53,553 as of December 31, 2020 and further to 78,540 as of December 31, 2021. Our average monthly recurring net revenues from hosting and related services increased from RMB289.1 million in 2019 to RMB374.0 in 2020 and further to RMB463.4 million (US$72.7 million) in 2021. We recorded a net loss of RMB181.2 million and RMB2,680.3 million in 2019 and 2020, respectively, while generated a net profit of RMB515.1 million (US$80.8 million) in 2021, which reflected share-based compensation expenses of RMB43.9 million, RMB136.8 million and RMB320.0 million (US$50.2 million) in 2019, 2020 and 2021, respectively. Our results of operations also reflect the effects of our acquisitions and dispositions during the respective periods.

Factors Affecting Our Results of Operations

Our business and results of operations are generally affected by the development of China's data center services market, which has grown rapidly in recent years. According to Frost & Sullivan, the total revenue of China's data center services market increased from RMB50.6 billion in 2016 to RMB86.7 billion in 2020, representing a CAGR of 14.4%, and is expected to grow at a CAGR of 12.3% from 2020 to 2025, reaching RMB154.9 billion by 2025. However, any adverse changes in the data center services market in China may harm our business and results of operations.

While our business is generally influenced by factors affecting the data center services market in China, we believe that our results of operations are more directly affected by company-specific factors, including the number of cabinets under management and cabinet utilization rate, monthly recurring revenues and churn rate, pricing, growth in complementary markets and optimization of our cost structure.

Number of Cabinets under Management and Cabinet Utilization Rate

Our revenues are directly affected by the number of cabinets under management and the utilization rates of these cabinet spaces. We had 36,291, 53,553 and 78,540 cabinets under management as of December 31, 2019, 2020 and 2021, respectively. Our annualized average monthly cabinet utilization rates were 66.0%, 61.2% and 60.1% in 2019, 2020 and 2021, respectively. We calculate the average monthly cabinet utilization rate in a given period by dividing the sum of the number of billable cabinets as of the end of each month during the period by the sum of the number of cabinet capacity as of the end of each month during the same period. Our average monthly cabinet utilization rate fluctuates due to the continuous changes in both the amount of our billable cabinets and average cabinet capacity. Our future results of operations and growth prospects will largely depend on our ability to increase the number of cabinets under management while maintaining optimal cabinet utilization rate.

With the rapid growth of China's internet industry, demand for cabinet spaces has increased significantly and we do not always have sufficient self-built data center capacity to meet such demand. It usually takes twelve to eighteen months to build a data center together with cabinets and equipment installed. To meet our customers' immediate demand, we partner with China Telecom, China Unicom or other parties and lease cabinets from them. Due to the time needed to build data centers and the long-term nature of these investments, if we overestimate the market demand for cabinets, it will lower our cabinet utilization rate and negatively affect our results of operations.

Monthly Recurring Revenues and Churn Rate

Our average monthly recurring revenues and churn rate directly affect our results of operations. Our hosting and related services are based on a recurring revenue model. We consider these services recurring as we generally bill our customers and recognize revenues on a fixed and recurring basis each month during the terms of our service contracts with them, generally ranging from one to three years. Our non-recurring revenues are primarily comprised of fees charged for installation services, additional bandwidth used by customers beyond the contracted amount and other value-added services. These services are considered to be non-recurring as they are billed and recognized over the period of the customer service agreement.

We use "monthly recurring revenues" to measure the revenues we recognize from our managed hosting services on a recurring basis each month. In 2019, 2020 and 2021, our recurring revenues were consistently around 90% of our net revenues. Our average monthly recurring revenues from hosting and related services were RMB289.1 million, RMB374.0 million and RMB463.4 million (US$72.7 million) in 2019, 2020 and 2021. Our average monthly recurring revenues per cabinet for managed retail services was RMB8,747, RMB8,984 and RMB9,190 (US$1,442) for the year ended December 31, 2019 and 2020 and 2021.

We use the churn rate to measure the reduction of monthly revenues that is attributable to the termination of customer contracts as a percentage of total monthly recurring revenues of the previous month. Our average monthly churn rate for our managed hosting services was 0.5% in 2019, 0.3% in 2020 and 0.2% in 2021.

Pricing

Our results of operations also depend on the price level of our services. Due to the quality of our services and our optimized interconnectivity among carriers and networks, we are generally able to command premium pricing for our services. Nonetheless, because we are generally regarded as a premium data center and network service provider, many customers only place their mission critical servers and equipment, but not other non-critical functions, in our data centers. As we try to acquire more business from new and existing customers, expand into new markets, or try to adapt to changing market conditions, we may need to lower our prices or provide other incentives to compete effectively.

Growth in New and Complementary Markets

Our results of operations also depend on the growth of our cloud service business and VPN service business that complement our core managed hosting service business.

Cloud services, largely through our partnerships with Microsoft and other cloud service providers, have continually contributed to our results of operations since 2013. While our cloud computing platforms are now supporting a significant number of customers, we believe the cloud computing market in China is still in its early stages. Key factors for growth in this market include signing up services from new customers, improving utilization rates of cloud computing resources with existing customers introducing well-developed applications to improve cloud computing adoption rates, and partnering with more cloud providers to offer a comprehensive cloud-neutral platform.

As one of the largest enterprise VPN service providers in the Asia Pacific region, we have experienced and expect continual growth in this market to meet customers' growing demand for enterprise-grade VPN services with secure, dedicated connections. Key growth drivers include adding new customers, increasing the number of connections with existing customers and realizing revenue synergies with our other business groups.

Our Cost Structure

Our ability to maintain and improve our gross margins depends on our ability to effectively manage our cost of revenues, which consist of telecommunications costs and other data center related costs. Telecommunications costs consist of (i) expenses associated with acquiring bandwidth and related resources from carriers for our data centers, and (ii) rentals, utilities and other costs in connection with the cabinets we lease from our partnered data centers. Other data center related costs include utilities and rental expenses for our self-built data centers, employee payroll, depreciation and amortization of our property and equipment, and other related costs. The changes in these costs usually reflect the changes in the number of cabinets under management and our headcount.

The mix of self-built data centers and partnered data centers also affects our cost structure. The gross margin for cabinets located in our partnered data centers is generally lower than that of cabinets located in our self-built data centers. This is because telecommunication carriers who lease cabinet spaces to us for our partnered data centers typically demand a profit on top of their costs in connection with the leasing of cabinet spaces to us. We plan to continue to lease data centers from such carriers or purchase data center facilities to meet the immediate market demand while building new or expanding existing our self-built data centers in Beijing, Shanghai, Shenzhen, Guangzhou, Yangtze Delta, and the Greater Bay Area. If we cannot effectively manage the market demand and increase the number of cabinets located in self-built data centers relative to partnered data centers, we may not be able to improve our gross margins.

Impact of the COVID-19 Pandemic on Our Business

The COVID-19 pandemic has not interrupted or affected the operation of our existing data centers or ability to provide our data center services to our customers. We had temporary suspensions of our sales and marketing activities, construction activities and business travel to ensure the safety and health of our employees in January and February of 2020. Since March 2020, these activities began returning to normal levels, and by the end of the second quarter of 2020 had largely returned to normal levels. If the COVID-19 pandemic resurges or results in governmental or other measures that affect logistics, travel and construction activity, any measures we may be required to adopt may impact our construction and development activities with respect to data centers under construction and under development, and our ability to increase our capacity according to schedule could be negatively affected. The ongoing COVID-19 pandemic could materially and adversely affect our business, financial condition and results of operations. We have experienced slower cash collection for administrative reasons as a result of the COVID-19 pandemic, unrelated to our customers' ability to pay, which has resulted in an increase in our accounts receivable. See the section titled "Operating and Financial Review and Prospects – B. Liquidity and Capital Resources – Operating Activities." While the COVID-19 pandemic has not materially or adversely affected our business, results of operations or financial condition, whether the pandemic will have any such material or adverse impact on us going forward will depend on future developments, which are highly uncertain and cannot be predicted. As of the date of this document, we are not aware of any material or adverse effect on our financial condition as a result of the COVID-19 pandemic.

Key Components of Results of Operations

Net Revenues

The following table sets forth our net revenues for the years presented:

	For the Years Ended December 31,			
	2019	**2020**	**2021**	
	RMB	*RMB*	*RMB*	*US$*
		(in thousands)		
Net revenues	3,788,967	4,829,019	6,189,801	971,315

We provide retail managed hosting services to house our customers' servers and networking equipment in our data centers, and wholesale managed hosting services to deliver customized data center sites to our customers based on their unique requirements. We also provide cloud services and VPN services as part of our hosting and related services business. Since the completion of the disposal of the managed network services in September 2017, we have generated all of our revenues from the hosting and related services business.

The contracts with our wholesale customers generally have terms ranging from eight to ten years. The contracts with our retail customers generally have terms ranging from one to three years and most of these contracts have an automatic renewal provision. Our customers are generally billed on a monthly basis according to the services used in the previous month.

Cost of Revenues

Our cost of revenues primarily consists of telecommunications cost, and other costs. The following table sets forth, for the periods indicated, our cost of revenues, in absolute amounts and as a percentage of our total net revenues:

	For the Years Ended December 31,						
	2019		2020		2021		
	RMB	*%*	*RMB*	*%*	*RMB*	*US$*	*%*
	(in thousands, except percentages)						
Cost of revenues:							
Telecommunications costs	1,570,825	41.5	2,092,887	43.3	2,477,366	388,753	40.0
Others	1,278,693	33.7	1,660,121	34.4	2,274,405	356,904	36.8
Total cost of revenues	2,849,518	75.2	3,753,008	77.7	4,751,771	745,657	76.8

Telecommunications costs refer to expenses incurred in acquiring telecommunication resources from carriers for our data centers, including bandwidth and cabinet leasing costs. Cabinet leasing costs cover rentals, utilities and other costs associated with the cabinets we lease from our partnered data centers. Our other costs of revenues include utilities costs for our self-built data centers, depreciation and amortization, employee payroll and other compensation costs and other miscellaneous items related to our service offerings.

We expect that our cost of revenues of hosting and related services will continue to increase as our business expands, both organically and as a result of acquisitions.

Operating Expenses

Our operating expenses consist of sales and marketing expenses, general and administrative expenses and research and development expenses. The following table sets forth our operating expenses, both as an absolute amount and as a percentage of total net revenues for the periods indicated.

	For the Years Ended December 31,						
	2019		2020		2021		
	RMB	*% Net of Revenues*	*RMB*	*% Net of Revenues*	*RMB*	*US$*	*% Net of Revenues*
	(in thousands, except percentages)						
Operating expenses:							
Sales and marketing expenses[1]	206,309	5.4	235,012	4.9	255,400	40,078	4.1
Research and development expenses[1]	88,792	2.3	112,891	2.3	188,489	29,578	3.1
General and administrative expenses[1]	415,277	11.0	535,111	11.1	842,354	132,184	13.6
Allowance for doubtful debt	1,557	0.0	2,393	0.1	18,399	2,887	0.3
Impairment of receivables from equity investees	52,142	1.4	–	–	–	–	–
Impairment of loan receivable to potential investee	–	–	–	–	2,807	440	0.0
Impairment of long-lived assets	–	–	81,619	1.7	109,267	17,146	1.8
Other operating income	(6,862)	(0.1)	(7,619)	(0.2)	–	–	–
Total Operating Expenses[1]	757,215	20.0	959,407	19.9	1,416,716	222,313	22.9

Note:

(1) Includes share-based compensation expense as follows:

	For the Years Ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
	(in thousands)			
Allocation of share-based compensation expenses:				
Sales and marketing expenses	354	38,247	2,545	399
Research and development expenses	1,177	634	10,805	1,696
General and administrative expenses	40,501	82,672	292,947	45,970
Total share-based compensation expenses	42,032	121,553	306,297	48,065

Sales and Marketing Expenses

Our sales and marketing expenses primarily consist of compensation and benefit expenses for our sales and marketing staff, including share-based compensation expenses, as well as advertisement and agency service fees. Our sales and marketing expenses also include office-related expenses and business development expenses associated with our sales and marketing activities. To a lesser extent, our sales and marketing expenses include depreciation of equipment used associated with our selling and marketing activities.

Research and Development Expenses

Our research and development expenses primarily include salaries, employee benefits, share-based compensation expenses and other expenses incurred in connection with our technological innovations, such as our proprietary smart routing technology and cloud computing infrastructure service technologies. We anticipate that our research and development expenses will continue to increase as we devote more resources to develop and improve technologies, improve operating efficiencies and enhance our service offerings.

General and Administrative Expenses

Our general and administrative expenses primarily consist of compensation and benefits paid to our management and administrative staff, including share-based compensation expenses, the cost of third-party professional services, and depreciation and amortization of property and equipment used in our administrative activities. Our general and administrative expenses, to a lesser extent, also include office rent, office-related expenses, and expenses associated with training and team building activities. We expect that our other general and administrative expense items, such as salaries paid to our management and administrative staff as well as professional services fees, will increase as we expand our business, both organically and as a result of acquisitions.

Share-Based Compensation Expenses

We recorded share-based compensation expenses in connection with share options and RSUs granted under our 2010 Plan, 2014 Plan and 2020 Plan. As of February 28, 2022, options to purchase 349,254 ordinary shares and 2,584,275 RSUs have been granted to our employees, directors and consultants. We recorded share-based compensation expenses in the amount of RMB42.0 million, RMB121.6 and RMB306.3 million (US$48.1 million) for the year ended December 31, 2019, 2020 and 2021, respectively, in connection with our share-based incentive grants.

Taxation

The Cayman Islands

The Cayman Islands currently does not levy taxes on individuals or corporations based upon profits, income, gains or appreciation and there is no taxation in the nature of inheritance tax or estate duty. There are no other taxes likely to be material to our company levied by the government of the Cayman Islands, except for stamp duties that may be applicable on instruments executed in, or after execution brought within the jurisdiction of, the Cayman Islands. The Cayman Islands is not a party to any double taxation treaties that are applicable to any payments made to or by our company. There are no exchange control regulations or currency restrictions in the Cayman Islands. Additionally, upon payments of dividends by our company to the shareholders, no Cayman Islands withholding tax will be imposed.

The British Virgin Islands

The Company and all dividends, interest, rents, royalties, compensation and other amounts paid by the Company to persons who are not resident in the BVI and any capital gains realized with respect to any shares, debt obligations, or other securities of the Company by persons who are not resident in the BVI are exempt from all provisions of the Income Tax Ordinance in the BVI.

No estate, inheritance, succession or gift tax, rate, duty, levy or other charge is payable by persons who are not resident in the BVI with respect to any shares, debt obligation or other securities of the Company.

All instruments relating to transfers of property to or by the Company and all instruments relating to transactions in respect of the shares, debt obligations or other securities of the Company and all instruments relating to other transactions relating to the business of the Company are exempt from payment of stamp duty in the BVI. This assumes that the Company does not hold an interest in real estate in the BVI.

There are currently no withholding taxes or exchange control regulations in the BVI applicable to the Company or its members.

Hong Kong

Subsidiaries in Hong Kong are subject to Hong Kong profits tax rate of 16.5% for the years ended December 31, 2019, 2020 and 2021. They may be exempted from income tax on their foreign-derived income and there are no withholding taxes in Hong Kong on remittance of dividends.

Taiwan

DYX Taiwan branch is incorporated in Taiwan and is subject to Taiwan profits tax rate of 20% for each of the years ended December 31, 2019, 2020 and 2021.

The PRC

The Company's PRC subsidiaries are incorporated in the PRC and subject to the statutory rate of 25% on the taxable income in accordance with the Enterprise Income Tax Law, or the EIT Law, which was effective on January 1, 2008 and amended on December 29, 2018, except for certain entities eligible for preferential tax rates.

Dividends, interests, rent or royalties payable by the Company's PRC subsidiaries to any non-PRC resident enterprise and proceeds from any such non-PRC resident enterprise investor's disposition of assets (after deducting the net value of such assets) are subject to a 10% withholding tax, unless the corresponding non-PRC resident enterprise's jurisdiction of incorporation has a tax treaty or arrangement with China that provides a reduced withholding tax rate or an exemption from withholding tax.

VNET Beijing was qualified as a High and New Technology Enterprise, or HNTE, since 2008 and is eligible for a 15% preferential tax rate. In October 2014, VNET Beijing obtained a new certificate and renewed the certificate in October 2017 and 2020, with a validity term of three years. In accordance with the PRC Income Tax Law, an enterprise awarded with the HNTE certificate may enjoy a reduced EIT rate of 15%. For the years ended December 31, 2019, 2020 and 2021, the tax rate for VNET Beijing was 15%, 15% and 15%, respectively.

In April 2011, Xi'an Sub, a subsidiary of VNET Beijing located in Shaanxi Province, was qualified for a preferential tax rate of 15% and started to apply this rate from then on. The preferential tax rate is awarded to companies that are located in West Regions of China which operate in certain encouraged industries. For the years ended December 31, 2019, 2020 and 2021, the tax rate assessed for Xi'an Sub was 15%, 15% and 15%, respectively.

In 2013, BJ iJoy was qualified as a software enterprise, which makes it eligible for exemption of the enterprise income tax for the years ended December 31, 2013 and 2014 and a half-reduced enterprise income tax for the years ended December 31, 2015, 2016 and 2017. For the years ended December 31, 2019, 2020 and 2021 and BJ iJoy was subject to the statutory rate of 25% for the taxable income.

In October 2015, SH Blue Cloud, a subsidiary located in Shanghai, was qualified for a HNTE and became eligible for a 15% preferential tax rate. The HNTE certificate has been renewed in November 2019, with a validity term of three years. For the years ended December 31, 2019, 2020 and 2021, SH Blue Cloud enjoyed a preferential tax rate of 15%.

In November 2016, SZ DYX, a subsidiary located in Guangdong Province, was qualified for a HNTE and became eligible for a 15% preferential tax rate effective for three consecutive years. The HNTE certificate has been renewed in November 2020, with a validity term of three years. For the years ended December 31, 2019, 2020 and 2021, SZ DYX enjoyed a preferential tax rate of 15%.

In December 2016, BJ TenxCloud, a subsidiary located in Beijing and the Company acquired in July 2021, was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years and the certificate was reapplied in December 2019 with a validity term of three years. Accordingly, for the years ended December 31, 2019, 2020 and 2021, BJ TenxCloud enjoyed a preferential tax rate of 15%.

In December 2019, SH Hesheng, a subsidiary located in Shanghai, in which the Company acquired 100% of the equity in November 2021, was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years. Accordingly, for the years ended December 31, 2019, 2020 and 2021, SH Hesheng enjoyed a preferential tax rate of 15%.

The EIT Law also provides that enterprises established under the laws of foreign countries or regions and whose "place of effective management" is located within the PRC are considered PRC tax resident enterprises and subject to PRC income tax at the rate of 25% on worldwide income. The definition of "place of effective management" refers to an establishment that exercises, in substance, overall management and control over the production and business, personnel, accounting, properties, etc. of an enterprise. As of December 31, 2021, the administrative practice associated with interpreting and applying the concept of "place of effective management" is unclear. If the Company is deemed as a PRC tax resident, it will be subject to PRC income tax at the rate of 25% on its worldwide income under the EIT Law, meanwhile the dividends it receives from another PRC tax resident company will be exempted from 25% PRC income tax. The Company will continue to monitor changes in the interpretation or guidance of this law.

PRC VAT. In November 2011, the Ministry of Finance and the State Administration of Taxation jointly issued two circulars setting out the details of the pilot value-added tax, or VAT, reform program, which changed the charge of sales tax from business tax to VAT for certain pilot industries. The pilot VAT reform program initially applied only to the pilot industries in Shanghai, and was expanded to eight additional regions, including, among others, Beijing and Guangdong province, in 2012. In August 2013, the program was further expanded nationwide. In May 2016, the program was expanded to cover additional industry sectors such as construction, real estate, finance and consumer services. In November 2017, PRC State Counsel issued State Counsel Order 691 to abolish business tax, and issued the amendment to Interim Regulations of PRC Value Added Taxes, or the VAT Regulation, pursuant to which enterprises and individuals that (i) sell goods or labor services of processing, repair or replacement of goods, (ii) sell services, intangible assets, or immovables, or (iii) import goods within the territory of the PRC are subject to VAT.

Effective from September 2012, all services provided by VNET China and certain services provided by VNET Technology and VNET Beijing were subject to a VAT of 6%.

On March 20, 2019, the Ministry of Finance, the State Administration of Taxation and the General Administration of Customs jointly issued the Notice of Strengthening Reform of VAT Policies, or the Announcement No. 39. Pursuant to the Announcement No. 39, the generally applicable VAT rates are simplified to 13%, 9%, 6%, and nil, which became effective on April 1, 2019. In addition, a general VAT taxpayer is allowed to offset its qualified input VAT paid on taxable purchases against the output VAT chargeable on the telecommunication services and modern services provided by it.

Recently Issued Accounting Pronouncements

A list of recently issued accounting pronouncements that are relevant to us is included in Note 2 to our consolidated financial statements for the year ended December 31, 2021 included elsewhere in this annual report.

Inflation

In the last three years, inflation in China has not materially impacted our results of operations. According to the National Bureau of Statistics of China, the annual average percent changes in the consumer price index in China for 2019, 2020 and 2021 were 2.9%, 2.5% and 0.9%, respectively. Although we have not been materially affected by inflation in the past, we cannot assure you that we will not be affected in the future by higher rates of inflation in China.

Results of Operations

The following table sets forth our consolidated results of operations for the periods indicated both in absolute amount and as a percentage of our total net revenues. This information should be read together with our consolidated financial statements and related notes included elsewhere in this annual report. The results of operations in any period are not necessarily indicative of the results you may expect for future periods.

	For the Years Ended December 31,						
	2019		2020		2021		
	RMB	*%*	*RMB*	*%*	*RMB*	*US$*	*%*
	(in thousands, except percentages)						
Consolidated Statements of Operations Data:							
Net revenues	3,788,967	100.0	4,829,019	100.0	6,189,801	971,315	100.0
Cost of revenues	(2,849,518)	(75.2)	(3,753,008)	(77.7)	(4,751,771)	(745,657)	(76.8)
Gross profit	939,449	24.8	1,076,011	22.3	1,438,030	225,658	23.2
Operating (expenses) income:							
Sales and marketing expenses	(206,309)	(5.4)	(235,012)	(4.9)	(255,400)	(40,078)	(4.1)
Research and development expenses	(88,792)	(2.3)	(112,891)	(2.3)	(188,489)	(29,578)	(3.1)
General and administrative expenses	(415,277)	(11.0)	(535,111)	(11.1)	(842,354)	(132,184)	(13.6)
Allowance for doubtful debt	(1,557)	(0.0)	(2,393)	(0.1)	(18,399)	(2,887)	(0.3)
Impairment of long-lived assets	–	–	(81,619)	(1.7)	(109,267)	(17,146)	(1.8)
Impairment of receivables from equity investees	(52,142)	(1.4)	–	–	–	–	–
Impairment of loan receivable to potential investee	–	–	–	–	(2,807)	(440)	(0.0)
Other operating income	6,862	0.1	7,619	0.2	–	–	–
Total operating expenses	(757,215)	(20.0)	(959,407)	(19.9)	(1,416,716)	(222,313)	(22.9)
Operating profit	182,234	4.8	116,604	2.4	21,314	3,345	0.3
Interest income	54,607	1.4	31,711	0.7	31,897	5,005	0.5
Interest expense	(345,955)	(9.1)	(380,609)	(7.9)	(334,950)	(52,561)	(5.4)
Impairment of long-term investment	–	–	(13,030)	(0.3)	(3,495)	(548)	(0.1)
Loss on debt extinguishment	(18,895)	(0.5)	–	–	–	–	–
Other income	36,380	1.0	16,539	0.3	33,923	5,323	0.5
Other expenses	(5,632)	(0.1)	(36,912)	(0.8)	(22,700)	(3,562)	(0.4)
Changes in the fair value of convertible promissory notes	–	–	(2,544,220)	(52.7)	829,149	130,112	13.4
Foreign exchange (loss) gain	(27,995)	(0.7)	228,125	4.7	110,036	17,267	1.8
(Loss) income before income taxes and (loss) gain from equity method investments	(125,256)	(3.3)	(2,581,792)	(53.6)	665,174	104,381	10.7
Income tax expense	(5,437)	(0.1)	(109,336)	(2.3)	(111,407)	(17,482)	(1.8)
(Loss) gain from equity method investments	(50,553)	(1.3)	10,869	0.2	(38,666)	(6,068)	(0.6)
Consolidated net (loss) income	(181,246)	(4.8)	(2,680,259)	(55.7)	515,101	80,831	8.3

	For the Years Ended December 31,						
	2019		2020		2021		
	RMB	*%*	*RMB*	*%*	*RMB*	*US$*	*%*
	(in thousands, except percentages)						
Comprehensive income attributable to non-controlling interest	(1,046)	(0.0)	(29,088)	(0.6)	(15,003)	(2,354)	(0.2)
Deemed dividend	–	–	(470,643)	(9.7)	–	–	–
Dividend distribution	–	–	–	–	(28,909)	(4,536)	(0.5)
Others	–	–	–	–	(826,458)	(129,689)	(13.4)
Net loss attributable to the Company's ordinary shareholders	(182,292)	(4.8)	(3,179,990)	(66.0)	(355,269)	(55,748)	(5.7)

Year Ended December 31, 2021 Compared to Year Ended December 31, 2020

Net Revenues

Our net revenues increased by 28.2% from RMB4,829.0 million in 2020 to RMB6,189.8 million (US$971.3 million) in 2021, primarily due to (i) the increases in the total number of billable cabinets and the amount of average monthly recurring revenue per cabinet under our management, which were attributable to growing customer demand, and (ii) the growth of revenue from cloud business. The number of cabinets under our management increased by 46.7% from 53,553 as of December 31, 2020 to 78,540 as of December 31, 2021.

Cost of Revenues

Our cost of revenues increased by 26.6% from RMB3,753.0 million in 2020 to RMB4,751.8 million (US$745.7 million) in 2021, primarily due to (i) increases in our telecommunication, utility and depreciation costs attributable to the delivery of additional cabinets and (ii) increased customer demand for our cloud services.

Gross Profit

As a result of the foregoing, our gross profit increased by 33.6% from RMB1,076.0 million in 2020 to RMB1,438.0 million (US$225.7 million) in 2021. Our gross margin increased from 22.3% in 2020 to 23.2% in 2021, primarily due to the increased utilization rate of cabinets delivered in prior years.

Operating Expenses

Our operating expenses increased by 47.7% from RMB959.4 million in 2020 to RMB1,416.7 million (US$222.3 million) in 2021. Our operating expenses as a percentage of net revenues increased from 19.9% in 2020 to 22.9% in 2021 primarily due to an increase in our share-based compensation expenses.

Sales and Marketing Expenses. Our sales and marketing expenses increased by 8.7% from RMB235.0 million in 2020 to RMB255.4 million (US$40.1 million) in 2021, primarily due to the continuous expansion of our business. As a percentage of net revenues, our sales and marketing expenses decreased from 4.9% in 2020 to 4.1% in 2021.

Research and Development Expenses. Our research and development expenses increased by 67.0% from RMB112.9 million in 2020 to RMB188.5 million (US$29.6 million) in 2021, primarily due to our increased investments to strengthen our research and development capabilities. As a percentage of net revenues, our research and development expenses were 2.3% and 3.1% in 2020 and 2021, respectively.

General and Administrative Expenses. Our general and administrative expenses increased by 57.4% from RMB535.1 million in 2020 to RMB842.4 million (US$132.2 million) in 2021, primarily due to our one-off share-based compensation expenses. As a percentage of net revenues, our general and administrative expenses increased from 11.1% in 2020 to 13.6% in 2021.

Allowance for doubtful debt. Our allowance for doubtful debt increased from RMB2.4 million in 2020 to RMB18.4 million (US$2.9 million) in 2021.

Impairment of loan receivable to potential investee. We recorded a loss of RMB2.8 million (US$0.4 million) in 2021.

Impairment of long-lived assets. Our impairment of long-lived assets increased by 33.9% from RMB81.6 million in 2020 to RMB109.3 million (US$17.1 million) in 2021.

Interest Income

Our interest income remained stable at RMB31.9 million (US$5.0 million) in 2021, as compared to RMB31.7 million in 2020.

Interest Expense

Our interest expense decreased by 12.0% from RMB380.6 million in 2020 to RMB335.0 million (US$52.6 million) in 2021, primarily due to the repayment of 2021 Notes (as defined below) matured in October 2021.

Other Income

Our other income increased substantially from RMB16.5 million in 2020 to RMB33.9 million (US$5.3 million) in 2021. Other income comprises miscellaneous non-operating income that we generate. Such increase was primarily due to the gains from disposal of subsidiaries.

Other Expenses

Our other expenses decreased by 38.5% from RMB36.9 million in 2020 to RMB22.7 million (US$3.6 million) in 2021, primarily due to the one-off expenses incurred in relation to the issuance of convertible promissory notes in 2020, while no such expenses were recorded in 2021.

Changes in the Fair Value of Convertible Promissory Notes

Changes in the fair value of convertible promissory notes were RMB829.1 billion (US$130.1 billion) in 2021, which represent unrealized gains on the fair value of our convertible promissory notes issued by us in February to April 2020 caused by changes in the market price of our ADSs.

Foreign Exchange Gain

We had a foreign exchange gain of RMB110.0 million (US$17.3 million) in 2021, which represents unrealized net gains caused by the depreciation of the U.S. dollar against the Renminbi.

Income Tax Expenses

We recorded income tax expenses in the amount of RMB111.4 million (US$17.5 million) in 2021, compared with income tax expenses of RMB109.3 million in 2020, with the effective tax rate 17.8%. This is primarily due to:

- Profit generated outside China reduces the income tax expenses by RMB120.7 million (US$18.9 million) in 2021;
- Changes in valuation allowance leads to an increase in the income tax expenses in the amount of RMB79.7 million (US$12.5 million) in 2021; and
- Current and deferred tax rate differences lead to a decrease in the income tax expenses in the amount of RMB26.1 million (US$4.1 million) in 2021.

Net Profit or Loss

As a result of the foregoing, we recorded a net profit of RMB515.1 million (US$80.8 million) in 2021, as compared to a net loss of RMB2,680.3 million in 2020.

Year Ended December 31, 2020 Compared to Year Ended December 31, 2019

Net Revenues

Our net revenues increased by 27.4% from RMB3,789.0 million in 2019 to RMB4,829.0 million in 2020, primarily due to (i) the increases in the total number of billable cabinets and the amount of average monthly recurring revenue per cabinet under our management, which were attributable to growing customer demand, and (ii) the increased demand for our cloud and VPN services. The number of cabinets under our management increased by 47.6% from 36,291 as of December 31, 2019 to 53,553 as of December 31, 2020.

Cost of Revenues

Our cost of revenues increased by 31.7% from RMB2,849.5 million in 2019 to RMB3,753.0 million in 2020, primarily due to (i) increases in our telecommunication, utility and depreciation costs attributable to the delivery of additional cabinets and (ii) increased customer demand for our cloud and VPN services.

Gross Profit

As a result of the foregoing, our gross profit increased by 14.5% from RMB939.4 million in 2019 to RMB1,076.0 million in 2020. Our gross margin decreased from 24.8% in 2019 to 22.3% in 2020, primarily due to the delivery of additional cabinets which usually have lower utilization and incur depreciation and maintenance costs during the ramp-up period.

Operating Expenses

Our operating expenses increased by 26.7% from RMB757.2 million in 2019 to RMB959.4 million in 2020. Our operating expenses as a percentage of net revenues remains stable at 19.9% in 2020 compared to that of 20.0% in 2019.

Sales and Marketing Expenses. Our sales and marketing expenses increased by 13.9% from RMB206.3 million in 2019 to RMB235.0 million in 2020, primarily due to the expansion of our business. As a percentage of net revenues, our sales and marketing expenses decreased from 5.4% in 2019 to 4.9% in 2020.

Research and Development Expenses. Our research and development expenses increased by 27.1% from RMB88.8 million in 2019 to RMB112.9 million in 2020, primarily due to our increased investments to strengthen our research and development capabilities. As a percentage of net revenues, our research and development expenses were both 2.3% in 2019 and 2020.

General and Administrative Expenses. Our general and administrative expenses increased by 28.9% from RMB415.3 million in 2019 to RMB535.1 million in 2020, in line with the overall growth of our business and attributable to the increase in staff costs as we have recruited new senior management. As a percentage of net revenues, our general and administrative expenses slightly increased from 11.0% in 2019 to 11.1% in 2020.

Allowance for doubtful debt. Our allowance for doubtful debt increased from RMB1.6 million in 2019 to RMB2.4 million in 2020.

Impairment of long-lived assets. We recorded a loss of RMB81.6 million in 2020.

Interest Income

Our interest income decreased by 41.9% from RMB54.6 million in 2019 to RMB31.7 million in 2020, primarily due to our increased use of funds in various business projects.

Interest Expense

Our interest expense increased by 10.0% from RMB346.0 million in 2019 to RMB380.6 million in 2020, primarily due to interest expense recognized for the convertible promissory notes with an aggregate principal amount of US$200 million issued by us in 2020, and an increase in our bank borrowings in 2020.

Other Income

Our other income decreased by 54.5% from RMB36.4 million in 2019 to RMB16.5 million in 2020. Other income comprises miscellaneous non- operating income that we generate.

Other Expenses

Our other expenses increased from RMB5.6 million in 2019 to RMB36.9 million in 2020, primarily due to expenses of RMB18.7 million incurred in connection with issuing the convertible promissory notes in 2020.

Changes in the Fair Value of Convertible Promissory Notes

Changes in the fair value of convertible promissory notes were RMB2.5 billion in 2020, which represent unrealized loss on the fair value of our convertible promissory notes issued by us in February to April 2020 caused by changes in the market price of our ADSs.

Loss on Debt Extinguishment

We did not record any loss or profit on debt extinguishment in 2020, compared to RMB18.9 million in 2019.

Foreign Exchange Gain

We had a foreign exchange gain of RMB228.1 million in 2020, which represents unrealized net gain caused by the depreciation of the U.S. dollar against the Renminbi.

Income Tax Expenses

We recorded income tax expenses in the amount of RMB109.3 million in 2020, compared with income tax expenses of RMB5.4 million in 2019, with the effective tax rate (4.3%). This is primarily due to:

- Loss incurred outside China reduces the income tax benefit by RMB712.0 million in 2020;
- Current and deferred tax rate differences lead to an income tax expense in the amount of RMB36.4 million in 2020; and
- Change in valuation allowance leads to a decrease in the income tax expense in the amount of RMB6.5 million in 2020.

Net Loss

As a result of the foregoing, we recorded a net loss of RMB2,680.3 million in 2020, as compared to a net loss of RMB181.2 million in 2019.

B. Liquidity and Capital Resources

Cash Flows and Working Capital

The accompanying consolidated financial statements have been prepared assuming that we will continue as a going concern, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. We have experienced recurring losses from operations. As of December 31, 2021, we had an accumulated deficit of US$1,191.1 million. For the year ended December 31, 2021, the net cash we generated from operating activities amounted to US$217.8 million. Our ability to continue as a going concern is dependent on our ability to generate cash flows from operations, and our ability to arrange adequate financing arrangements. These above factors raise substantial doubt about our ability to continue as a going concern.

As of December 31, 2020, we had RMB2,710.3 million in cash and cash equivalents, RMB406.1 million in restricted cash (current and non-current portion) and RMB285.9 million in short-term investments. As of December 31, 2021, we had RMB1,372.5 million (US$215.4 million) in cash and cash equivalents and RMB336.0 million (US$52.7 million) in restricted cash (current and non-current portion).

As of December 31, 2020, we had short-term bank borrowings and long-term borrowings (current portion) from various commercial banks with an aggregate outstanding balance of RMB214.3 million, and long-term borrowings (excluding current portion) from various commercial banks with an aggregate outstanding balance of RMB887.0 million. As of December 31, 2021, we had long-term borrowings (current portion) from various commercial banks with an aggregate outstanding balance of RMB384.2 million (US$60.3 million), and long-term borrowings (excluding current portion) from various commercial banks with an aggregate outstanding balance of RMB2,215.0 million (US$347.6 million). Our short-term bank borrowings bore average interest rates of 4.56%, 4.46% and 5.22% per annum, respectively, in 2019, 2020 and 2021. Our short-term bank borrowings have maturity terms of one year and expire at various times throughout the year. There are no material covenants or restrictions on us associated with our outstanding short-term borrowings. We have entered into long-term borrowing arrangements since 2013 with maturity terms of two to fifteen years. The long-term borrowings (including current and non-current portions) outstanding as of December 31, 2019, 2020 and 2021 bore weighted-average interest rates of 5.28%, 5.61% and 5.31% per annum, respectively.

We issued an aggregate of 150,000 Series A perpetual convertible preferred shares to Vector Holdco Pte. Ltd., BTO Vector Fund ESC (CYM) L.P. and BTO Vector Fund FD (CYM) L.P., collectively referred to as "Affiliates of Vector", pursuant to an investment agreement dated June 22, 2020 among us, Affiliates of Vector and Blackstone Tactical Opportunities Fund – FD (Cayman) – NQ L.P. Dividends on each Series A perpetual convertible preferred share will accrue at 4.5% per annum from the issuance date until the date immediately prior to the conversion date. At any time after the issuance date, Series A convertible preferred shares are convertible into Class A ordinary shares or ADSs at the holder's option, the number of which will be determined based on a conversion price which is initially US$2.8333 per Class A ordinary shares or US$17.00 per ADS, subject to certain adjustments therein. On March 1, 2021, Affiliates of Vector converted all of their 150,000 Series A perpetual convertible preferred shares into 54,507,816 Class A Ordinary Shares.

In August 2017, we issued USD-denominated notes due 2020 in an aggregate principal amount of US$200 million at a coupon rate of 7.000% per annum and in September 2017, we issued USD-denominated notes due 2020 in an aggregate principal amount of US$100 million at a coupon rate of 7.000% per annum, collectively referred to as the "2020 Notes." The notes issued in September 2017 were priced at a slight premium of 100.04, with an effective yield of 6.98%. The notes issued in September 2017 constituted a further issuance of, and were consolidated to form a single series with, the notes issued in August 2017. Interest on the 2020 Notes is payable semi-annually in arrears on, or nearest to, August 17 and February 17 in each year, beginning on February 17, 2018.

In April 2019, we issued USD-denominated notes due 2021 in an aggregate principal amount of US$300 million at an interest rate of 7.875% per annum, or the 2021 Notes, and used a portion of the proceeds to purchase, pursuant to a tender offer, US$150,839,000 in principal amount of the 2020 Notes, representing 50.3% of the outstanding principal amount of the 2020 Notes. On August 12, 2019, we repurchased US$18,000,000 in principal amount of 2020 Notes at the par value. As of September 30, 2020, the outstanding principal amount of the 2020 Notes was nil. Interest on the 2021 Notes is payable semi-annually in arrears on April 15 and October 15 in each year, beginning on October 15, 2019.

Both the 2020 Notes and 2021 Notes have (i) a restrictive covenant that restricts our ability in consolidation, merger and sale of assets to a certain extent; (ii) a negative pledge covenant that restricts our ability to create security upon our undertaking, assets or revenues to secure bonds, notes, debentures or other securities that are quoted, listed or dealt in or traded on securities market; (iii) a dividend payment restriction covenant; and (iv) a covenant relating to the ratio of our Adjusted EBITDA to our Consolidated Interest Expense (interest expense paid net of interest income received). Such covenants may limit our ability to undertake additional debt financing, but not equity financing.

From February to June 2020, we entered into convertible promissory note purchase agreements with a group of investors led by Goldman Sachs Asia Strategic Pte. Ltd. in an aggregate principal amount of US$200,000,000 through a private placement to the investors, collectively referred to as the "2025 Convertible Notes".

We issued convertible promissory notes to Goldman Sachs Asia Strategic Pte. Ltd., StoneBridge 2020, L.P. and StoneBridge 2020 Offshore Holdings II, L.P. in an aggregate principal amount of US$75,000,000 pursuant to a convertible note purchase agreement dated February 19, 2020 between us and Goldman Sachs Asia Strategic Pte. Ltd. As of the date of this annual report, US$36,000,000 have been converted into Class A ordinary shares and US$39,000,000 remains outstanding.

We issued convertible promissory notes to Hina Group Fund II, L.P. and Hina Group Fund VI, L.P. in an aggregate principal amount of US$17,000,000 pursuant to a convertible note purchase agreement dated March 16, 2020 among us, Hina Group Fund II, L.P. and Hina Group Fund VI, L.P. As of the date of this annual report, US$17,000,000 have been converted into Class A ordinary shares.

We issued convertible promissory notes to UBS SDIC Fund Management Co., Ltd., in an aggregate principal amount of US$58,000,000 pursuant to a convertible note purchase agreement dated April 27, 2020 and a convertible note purchase agreement dated June 5, 2020, between us and UBS SDIC Fund Management Co., Ltd. As of the date of this annual report, US$54,000,000.93 have been converted into Class A ordinary shares and US$3,999,999.07 remains outstanding.

We issued a convertible promissory note to Asialeads Capital (Cayman) Limited in an aggregate principal amount of US$50,000,000 pursuant to a convertible note purchase agreement dated February 24, 2020 between us and Asialeads Capital (Cayman) Limited. As of the date of this annual report, US$25,000,000 have been converted into Class A ordinary shares and US$25,000,000 remains outstanding.

The 2025 Convertible Notes will mature in five years, bearing interest at the rate of 2% per annum from the issuance date which shall be payable semiannually in arrears in cash. At any time after the issuance, each note is convertible into our Class A Ordinary Shares at the holder's option at a conversion price of US$2 per share, or US$12 per ADS, subject to customary anti-dilution adjustments. Unless previously redeemed or converted, we shall redeem the note on the maturity date at 115% of the then outstanding principal amount plus all accrued but unpaid interest. In addition, if any portion of the outstanding principal amount of the notes has not been converted into our shares by the third anniversary of the note issuance date, the holders have the right to require us to redeem, in whole or in part, the outstanding principal amount of the note at 109% of the principal amount plus all accrued but unpaid interest. In August 2020, Asialeads Capital (Cayman) Limited partially converted the principal amount of its convertible note of US$25,000,000 into 12,499,998 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. In December 2020, Hina Group Fund VI, L.P. partially converted the principal amount of its convertible note of US$1,705,002.63 into 856,326 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. In December, UBS SDIC Fund Management Co., Ltd. partially converted the principal amount of its convertible note of US$20,666,667.01 into 10,353,816 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS.

We had unused credit lines in an aggregate amount of RMB1,217.8 million (US$191.1 million) as of December 31, 2021 under credit agreements with thirteen banks. As of the same date, we used RMB2,311.8 million (US$362.8 million) of the credit lines under the credit agreements with thirteen banks, pursuant to which we were granted credit lines in an aggregate amount of RMB3,660.2 million (US$574.4 million). There are no material covenants that restrict our ability to undertake additional financing associated with the used credit lines. No terms and conditions of the unused credit lines are available yet because utilization of such unused portion requires approval by the banks and separate loan agreements setting forth detailed terms and conditions will only be entered into with the banks upon utilization. In January 2021, we issued USD-denominated convertible senior notes due 2026 in an aggregate principal amount of US$600 million at a zero-coupon rate, or the 2026 Convertible Notes. In January 2022, we issued USD-denominated convertible notes due 2027 in an aggregate principal amount of US$250 million at an interest rate of 2% per annum. We believe the working capital as of December 31, 2021 is sufficient for our present requirements.

As of December 31, 2021, we had total outstanding debts (including borrowings), of RMB2,599.2 million (US$407.9 million), all of which were onshore debt obligations. We believe we have sufficient financial resources to meet both of our onshore and offshore debt obligations when due. The growth of our business relies on the construction of new data centers. We also intend to acquire or invest in companies whose businesses are complementary to ours. We intend to use the proceeds of our outstanding debt mainly to construct new data centers and fund our acquisitions. As of December 31, 2021, we had purchase commitments made for acquisitions of machinery, equipment, construction in progress, bandwidth and cabinet capacity of RMB2,285.2 million (US$358.6 million) coming due within twelve months, and we intend to use a portion of the proceeds to fund these purchase commitments. Except as disclosed in this annual report, we have no outstanding bank loans or financial guarantees or similar commitments to guarantee the payment obligations of third parties. We believe that our current cash, cash equivalents and time deposits, our cash flow from operations and proceeds from our financing activities will be sufficient to meet our anticipated cash needs, including our cash needs for working capital and capital expenditures, for the next 12 months. If we have additional liquidity needs in the future, we may obtain additional financing, including equity offering and debt financing in capital markets, to meet such needs.

As of December 31, 2021, the total amount of cash and cash equivalents, restricted cash and short-term investments was RMB1,708.5 million (US$268.1 million), of which RMB1,014.8 million (US$159.2 million), RMB387.3 million (US$60.8 million) and RMB306.4 million (US$48.1 million) was held by our consolidated affiliated entities, PRC subsidiaries and offshore subsidiaries, respectively. Cash transfers from our PRC subsidiaries to our subsidiaries outside of China are subject to PRC government control of currency conversion. Restrictions on the availability of foreign currency may affect the ability of our PRC subsidiaries and consolidated affiliated entities to remit sufficient foreign currency to pay dividends or other payments to us, or otherwise satisfy their foreign currency denominated obligations. Governmental control of currency conversion may limit our ability to receive and utilize our revenues effectively. The major cost that would be incurred to distribute dividends is the withholding tax imposed on the dividends distributed by our PRC operating subsidiaries at the rate of 10% or a lower rate under an applicable tax treaty, if any.

The following table sets forth a summary of our cash flows for the periods indicated:

	For the Years Ended December 31,			
	2019	2020	2021	
	RMB	*RMB*	*RMB*	*US$*
		(in thousands)		
Net cash generated from operating activities	802,922	714,243	1,387,922	217,796
Net cash used in investing activities	(1,611,983)	(3,889,174)	(3,772,613)	(592,007)
Net cash generated from financing activities	461,557	4,163,255	967,577	151,833
Effect on foreign exchange rate changes on cash and cash equivalents and restricted cash	43,660	(229,064)	9,150	1,438
Net (decrease) increase in cash and cash equivalents and restricted cash	(303,844)	759,260	(1,407,964)	(220,940)
Cash and cash equivalents and restricted cash at beginning of the year	2,661,021	2,357,177	3,116,437	489,037
Cash and cash equivalents and restricted cash at end of the year	2,357,177	3,116,437	1,708,473	268,097
Cash and cash equivalents, restricted cash and short-term investments at end of the year	2,721,033	3,402,309	1,708,473	268,097

Operating Activities

Net cash generated from operating activities was RMB1,387.9 million (US$217.8 million) in 2021, primarily resulted from a net income of RMB515.1 million (US$80.8 million), positively adjusted for certain items such as (i) depreciation and amortization of RMB1,267.6 million (US$198.9 million), (ii) share-based compensation expenses of RMB320.0 million (US$50.2 million), (iii) the increase in accrued expenses and other payables of RMB316.0 million (US$49.6 million) and (iv) the increase in accounts and notes payables of RMB195.7 million (US$30.7 million), partially offset by certain item such as the increase in accounts and notes receivable of RMB533.3 million (US$83.7 million).

Net cash generated from operating activities was RMB714.2 million in 2020, primarily resulted from a net loss of RMB2,680.3 million, positively adjusted for certain items such as (i) depreciation and amortization of RMB989.0 million, (ii) the increase in advances from customers of RMB27.1 million, and (iii) loss from equity method investments of RMB10.9 million, partially offset by certain item such as the increase in prepaid expenses and other current assets of RMB117.1 million.

Net cash generated from operating activities was RMB802.9 million in 2019, primarily resulted from a net loss of RMB181.2 million, positively adjusted for certain items such as (i) depreciation and amortization of RMB772.2 million, (ii) the increase in advances from customers of RMB398.7 million, and (iii) loss from equity method investments of RMB50.6 million, partially offset by certain item such as the increase in prepaid expenses and other current assets of RMB328.2 million.

Investing Activities

Net cash used in investing activities was RMB3,772.6 million (US$592.0 million) in 2021, as compared to net cash used in investing activities of RMB3,889.2 million in 2020. Net cash used in investing activities in 2021 is primarily related to our purchase of property and equipment in the amounts of RMB2,691.9 million (US$422.4 million), our prepayments and deposits for acquiring data center in the amount of RMB679.9 million (US$106.7 million), offset by proceeds received from maturity for short-term investments in the amount of RMB347.5 million (US$54.5 million).

Net cash used in investing activities was RMB3,889.2 million in 2020, as compared to net cash used in investing activities of RMB1,612.0 million in 2019. Net cash used in investing activities in 2020 is primarily related to our purchase of property and equipment in the amounts of RMB2,473.3 million, our payment for short-term investments in the amount of RMB328.2 million, offset by proceeds received from maturity for short-term investments in the amount of RMB397.6 million, proceeds from disposal of long-term investments in the amount of RMB1.9 million.

Net cash used in investing activities was RMB1,612.0 million in 2019, as compared to net cash used in investing activities of RMB304.8 million in 2018. Net cash used in investing activities in 2019 is primarily related to our purchase of property and equipment in the amounts of RMB1,248.8 million, our payments for long-term investments in the amount of RMB9.3 million, our payment for short-term investments in the amount of RMB436.7 million, offset by proceeds received from maturity for short-term investments in the amount of RMB312.2 million, proceeds from disposal of long-term investments in the amount of RMB19.0 million.

Financing Activities

Net cash generated from financing activities was RMB967.6 million (US$151.8 million) in 2021, as compared to net cash generated from financing activities amounting to RMB4,163.3 million in 2020. Net cash generated from financing activities in 2021 is primarily related to the net proceeds from issuance of 2026 Convertible Notes of RMB3,790.4 million (US$594.8 million) and proceeds from long-term bank borrowings of RMB1,628.4 million (US$255.5 million), partially offset by payment for share repurchase and cancellation of RMB1,701.8 million (US$267.1 million) and the repayment of 2021 Notes of RMB1,945.6 million (US$305.3 million).

Net cash generated from financing activities was RMB4,163.3 million in 2020, as compared to net cash used in financing activities amounting to RMB461.6 million in 2019. Net cash generated from financing activities in 2020 is primarily related to the proceeds from short-term bank borrowings of RMB34.0 million, partially offset by payment for purchase of property and equipment through finance leases of RMB376.2 million, the repayment of long-term bank borrowings of RMB33.0 million, proceeds from issuance of convertible promissory notes of RMB1,409.4 million, partially offset by payment of issuance and conversion cost of convertible promissory notes of RMB21.6 million, proceeds from Series A perpetual convertible preferred shares of RMB1,058.3 million and proceeds from issuance of ordinary shares of RMB2,680.4 million.

Net cash generated from financing activities was RMB461.6 million in 2019, as compared to net cash used in financing activities amounting to RMB19.9 million in 2018. Net cash generated from financing activities in 2019 is primarily related to the proceeds from issuance of 2021 Notes of RMB2,012.1 million and the proceeds from short-term bank borrowings of RMB234.5 million, partially offset by payment for purchase of property and equipment through finance leases of RMB333.6 million, the repayment of long-term bank borrowings of RMB85.1 million and the repurchase of 2020 Notes of RMB1,148.1 million.

Material Cash Requirements

Our material cash requirements as of December 31, 2021 and any subsequent interim period primarily include our capital expenditures, short-term borrowings, long-term borrowings, convertible promissory notes, purchase commitments, operating lease obligations and finance lease minimum lease payment.

Our capital expenditures were primarily for building self-built data centers, purchasing bandwidth and cabinet capacity and purchasing network equipment, servers and other equipment. Our capital expenditures have been primarily funded by cash generated from our operations and net cash provided by financing activities. We had capital expenditures relating to the addition of property and equipment of RMB1,248.8 million, RMB2,473.3 million and RMB2,691.9 million (US$422.4 million) in 2019, 2020 and 2021, respectively, representing 33.0%, 51.2% and 43.5% of our total net revenues for the same periods, respectively. We estimate that our data center capital expenditures in 2022 will be within the range of RMB4 billion to RMB5 billion, which will primarily be used to build, or pursue acquisitions of, data centers, purchase network equipment, servers and other equipment to expand our business. We expect our data center capacity to increase by an aggregate amount of approximately 14,400 to 17,400 cabinets during the year of 2022, through both organic growth and strategic acquisitions. We may incur additional capital expenditure for real property purchase, data center construction and network capacity expansion if our actual development is beyond our current plan.

As of December 31, 2021, our unused short-term and long-term borrowing facilities amounted to RMB1,217.8 million (US$191.1 million). We have pledged land use rights with the net book value of RMB135.8 million (US$21.3 million), property with the net book value of RMB254.0 million (US$39.9 million), leasehold improvements with the net book value of RMB161.0 million (US$25.3 million), computer and network equipment with the net book value of RMB159.9 (US$25.1 million) and office equipment with the net book value of RMB0.7 million (US$0.1 million) for our borrowings.

Long-term borrowings (including the current portions) outstanding as of December 31, 2021 bear a weighted-average interest rate of 5.31% per annum, and are denominated in Renminbi. These loans were obtained from financial institutions located in the PRC.

Our convertible promissory notes consist primarily of (i) the 2025 Convertible Notes issued during the year ended December 31, 2020, with an aggregate principal amount of US$200.0 million at an interest rate of 2% per annum, which will mature in five years since the issuance; and (ii) the 2026 Convertible Notes issued in January 2021, with an aggregate principal amount of US$600.0 million at a zero-coupon rate, which will mature on February 1, 2026.

We had purchase commitments of approximately RMB1,619.3 million (US$254.1 million) related to acquisition of machinery, equipment and construction in progress as of December 31, 2021. In addition, we had outstanding purchase commitments in relation to bandwidth and cabinet capacity of RMB881.9 million (US$138.4 million) as of the same date.

Our operating lease obligations are primarily related to the lease of office and data center space. Our operating cash payments for operating leases was RMB193.2 million, RMB477.2 million and RMB593.6 million (US$93.2 million) for the years ended December 31, 2019, 2020 and 2021, respectively.

Our finance lease minimum lease payment is primarily related to finance leases for electronic equipment, optic fibers and property. Our financing cash payments for finance leases amounted to RMB333.6 million, RMB376.2 million and RMB579.7 million (US$91.0 million) for the years ended December 31, 2019, 2020 and 2021, respectively.

We plan to fund our existing and future material cash requirements with cash from the proceeds from our operations, bank borrowings and other appropriate financing instruments, if available.

We have not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. We do not have retained or contingent interests in assets transferred. We have not entered into contractual arrangements that support the credit, liquidity or market risk for transferred assets. We do not have obligations that arise or could arise from variable interests held in an unconsolidated entity, or obligations related to derivative instruments that are both indexed to and classified in our own equity, or not reflected in the statement of financial position.

Other than as discussed above, we did not have any significant capital and other commitments, long-term obligations or guarantees as of December 31, 2021.

Holding Company Structure

VNET Group, Inc. is a holding company with no material operations of its own. We conduct our operations primarily through our PRC subsidiaries and consolidated affiliated entities in China. As a result, although other means are available for us to obtain financing at the holding company level, VNET Group, Inc.'s ability to pay dividends and to finance any debt it may incur depends upon dividends paid by our subsidiaries. If our subsidiaries or any newly formed subsidiaries incur debt on its own behalf in the future, the instruments governing their debt may restrict its ability to pay dividends to VNET Group, Inc. In addition, our PRC subsidiaries and consolidated affiliated entities are permitted to pay dividends to us only out of their retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. Under PRC law, our PRC subsidiaries and consolidated affiliated entities are required to set aside a portion of their after-tax profits each year to fund a statutory reserve and to further set aside a portion of its after-tax profits to fund the employee welfare fund at the discretion of the board or the enterprise itself. Although the statutory reserves can be used, among other ways, to increase the registered capital and eliminate future losses in excess of retained earnings of the respective companies, the reserve funds are not distributable as cash dividends except in the event of liquidation of these subsidiaries and consolidated affiliated entities.

C. Research and Development, Patents and Licenses, etc.

Research and Development and Intellectual Property

Our strong research and development capabilities support and enhance our service offerings. We have an experienced research and development team and devote significant resources to our research and development efforts, focusing on improving customer experience, increasing operational efficiency and bringing innovative solutions to the market quickly.

We have made continual investments and trainings for research and development to drive our growth in both mature and emerging businesses. We incurred RMB88.8 million, RMB112.9 million and RMB188.5 million (US$29.6 million) in research and development expenses for the years ended December 31, 2019, 2020 and 2021, respectively. As of December 31, 2021, our experienced research and development team consisted of 170 engineers, many of whom have more than 10 years of relevant industry experience.

Our research and development efforts have yielded 97 patents, 98 patent applications and 263 software copyright registrations as of December 31, 2021, all in China and focused on the areas including (i) energy saving technology, (ii) data center design and facility maintenance and operations, (iii) network operation and maintenance management, (iv) cloud-related technologies, and (v) edge computing and blockchain.

We rely on a combination of copyright, patent, trademark, trade secret and other intellectual property laws, nondisclosure agreements and other protective measures to protect our intellectual property rights. We generally control access to and use of our proprietary software and other confidential information through the use of internal and external controls, including physical and electronic security, contractual protections, and intellectual property law. We have implemented a strict security and information technology management system, including the prohibition of copying and transferring of codes. We educate our staff on the need to, and require them to, comply with such security procedures. We also promote protection through contractual prohibitions, such as requiring our employees to enter into confidentiality and non-compete agreements.

D. Trend Information

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for the year ended December 31, 2021 that are reasonably likely to have a material adverse effect on our net revenues, income, profitability, liquidity or capital resources, or that caused the disclosed financial information to be not necessarily indicative of future results of operations or financial conditions.

E. Critical Accounting Estimates

We prepare our financial statements in conformity with U.S. GAAP, which requires us to make judgments, estimates and assumptions. We continually evaluate these estimates and assumptions based on the most recently available information, our own historical experiences and various other assumptions that we believe to be reasonable under the circumstances. In 2021, we also made such judgments, estimates and assumptions taking into consideration of the impact of the COVID-19 pandemic on our business. Since the use of estimates is an integral component of the financial reporting process, actual results could differ from our expectations as a result of changes in our estimates. Some of our accounting policies require a higher degree of judgment than others in their application and require us to make significant accounting estimates.

Valuation Allowance for Deferred Tax Assets

We reviewed the carrying amount of deferred tax assets on an entity-by-entity basis and the carrying amount of deferred tax assets is reduced by a valuation allowance to the extent that it is more-likely-than-not that the benefits of the deferred tax assets will not be realized in future years. The valuation allowance is determined based on the weight of positive and negative evidence including future reversals of existing taxable temporary differences, the adequacy of future taxable income exclusive of reversing temporary differences and verifiable tax planning. Significant judgment is required in determining the estimated future taxable income based on the assumptions of forecasted revenue growth that take into consideration of our historical financial results, our plan of expanding operating capacity as well as current industry trends.

If it is determined that we are able to realize deferred tax assets in excess of the net carrying value or to the extent we are unable to realize a deferred tax asset, we would adjust the valuation allowance in the period in which such a determination is made, with a corresponding increase or decrease to earnings.

Fair Value of 2025 Convertible Notes

During the year ended December 31, 2020, we issued the 2025 Convertible Notes with an aggregate principal amount of US$200 million to a group of investors. The 2025 Convertible Notes will mature in five years and, bear interest at the rate of 2% per annum from the issuance date which will be payable semiannually in arrears in cash. We elected the fair value option of the 2025 Convertible Notes when they were initially recognized as financial liability as the fair value better represents the value of the underlying liabilities. The 2025 Convertible Notes are measured at fair value in accordance with ASC 825, *Financial Instruments* on the issuance date and subsequently remeasured at the end of each reporting period with an adjustment for fair value recorded to the current period income or expense, however, any fair value changes related to instrument-specific credit risk are recorded to other comprehensive income or loss.

The fair value of the 2025 Convertible Notes is measured using binomial tree pricing model that involves several parameters including our stock price, stock price volatility determined from our historical stock prices, the remaining maturity term and the discount rate.

The assumptions underlying the aforementioned valuations represent our board's and management's best estimates, which involve inherent uncertainties and the application of significant judgment. The fair value of the 2025 Convertible Notes could be different if factors or expected outcomes change and we use significantly different assumptions or estimates.

F. Off-Balance Sheet Arrangements

We have not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. We have not entered into any derivative contracts that are indexed to our shares and classified as shareholder's equity, or that are not reflected in our consolidated financial statements. Furthermore, we do not have any retained or contingent interest in assets transferred to an unconsolidated entity that serves as credit, liquidity or market risk support to such entity. Moreover, we do not have any variable interest in any unconsolidated entity that provides financing, liquidity, market risk or credit support to us or engages in leasing, hedging or research and development services with us.

G. Safe Harbor

This annual report on Form 20-F contains forward-looking statements. These statements are made under the "safe harbor" provisions of Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements can be identified by terminology such as "will," "expects," "anticipates," "future," "intends," "plans," "believes," "estimates," "may," "intend," "is currently reviewing," "it is possible," "subject to" and similar statements. Some sections in this annual report on Form 20-F, as well as our strategic and operational plans, contain forward -looking statements. We may also make written or oral forward-looking statements in our reports filed with or furnished to the SEC, in our annual report to shareholders, in press releases and other written materials and in oral statements made by our officers, directors or employees to third parties. Statements that are not historical facts, including statements about our beliefs and expectations, are forward-looking statements and are subject to change, and such change may be material and may have a material adverse effect on our financial condition and results of operations for one or more prior periods. Forward – looking statements involve inherent risks and uncertainties. A number of important factors could cause actual results to differ materially from those contained, either expressly or impliedly, in any of the forward-looking statements in this annual report on Form 20-F. Potential risks and uncertainties include, but are not limited to, a further slowdown in the growth of China's economy, government measures that may adversely and materially affect our business, failure of the wealth management services industry in China to develop or mature as quickly as expected, diminution of the value of our brand or image due to our failure to satisfy customer needs and/or other reasons, our inability to successfully execute the strategy of expanding into new geographical markets in China, our failure to manage growth, and other risks outlined in our filings with the SEC. All information provided in this annual report on Form 20-F and in the exhibits is as of the date of this annual report on Form 20-F, and we do not undertake any obligation to update any such information, except as required under applicable law.

Employment Agreements

We have entered into employment agreements with each of our executive officers. Under these agreements, each of our senior executive officers is employed for a specified time period. We may terminate employment for cause, at any time, without advance notice or remuneration, for certain acts of the executive officer, such as conviction or plea of guilty to a felony or any crime involving moral turpitude, negligent or dishonest acts to our detriment, or misconduct or a failure to perform agreed duties. In such case, the executive officer will not be entitled to receive payment of any severance benefits or other amounts by reason of the termination, and the executive officer's right to all other benefits will terminate, except as required by any applicable law. We may also terminate an executive officer's employment without cause upon one-month advance written notice. In such case of termination by us, we are required to provide compensation to the executive officer, including severance pay, as expressly required by the applicable law of the jurisdiction where the executive officer is based. The executive officer may terminate the employment at any time with a one-month advance written notice, if there is any significant change in the executive officer's duties and responsibilities inconsistent in any material and adverse respect with his or her title and position or a material reduction in the executive officer's annual salary before the next annual salary review, or if otherwise approved by the board of directors.

Each executive officer has agreed to hold, both during and after the termination or expiry of his or her employment agreement, in strict confidence, and not to use, except as required in the performance of his or her duties in connection with the employment, any of our confidential information or trade secrets, any confidential information or trade secrets of our clients or prospective clients, or the confidential or proprietary information of any third party received by us and for which we have confidential obligations. The executive officers have also agreed to disclose in confidence to us all inventions, designs and trade secrets which they conceive, develop or reduce to practice and to assign all right, title and interest in them to us, and assist us in obtaining patents, copyrights and other legal rights for these inventions, designs and trade secrets.

In addition, each executive officer has agreed to be bound by non-competition and non-solicitation restrictions during the term of his or her employment and for one year following the last date of employment. Specifically, each executive officer has agreed not to (i) approach our clients, customers or contacts or other persons or entities introduced to the executive officer for the purpose of doing business with such persons or entities that will harm our business relationships with these persons or entities; (ii) assume employment with or provide services to any of our competitors, or engage, whether as principal, partner, licensor or otherwise, any of our competitors; or (iii) seek directly or indirectly, to solicit the services of any of our employees who is employed by us on or after the date of the executive officer's termination, or in the year preceding such termination.

Compensation

In 2021, the aggregate cash compensation we paid to our executive officers was approximately RMB8.6 million (US$1.4 million), which total amount included RMB0.3 million (US$0.04 million) for pension, retirement, medical insurance or other similar benefits for our executive officers. We did not provide any cash compensation to our non-executive directors in 2021. Other than the amounts stated above, no pension, retirement or similar benefits has been set aside or accrued for our executive officers or directors. None of our non-executive directors has a service contract with us that provides for benefits upon termination of employment.

In addition to the cash compensation referenced above, we also provide share-based compensation to our directors and officers. The total share- based compensation we provided to our directors and officers amounted to RMB10.1 million (US$1.6 million) in 2021. For option grants to our directors and officers, see "– Share Incentive Plans."

Share Incentive Plans

On July 16, 2010, we adopted our 2010 Plan to attract and retain the best available personnel, provide additional incentives to employees, directors and consultants and to promote the success of our business. We subsequently amended our 2010 Plan on January 14, 2011 and July 6, 2012. On May 29, 2014, we adopted our 2014 Plan on our annual general meeting, which was subsequently amended on April 1, 2015 and December 22, 2017 by unanimous written approval of our board of directors. On May 29, 2020, we adopted the 2020 Share Incentive Plan (the "**2020 Plan**"). Upon the adoption of the 2020 Plan, we will cease to grant any new awards under the 2010 Plan and the 2014 Plan (collectively the "**Existing Plans**") while the Existing Plans and outstanding awards granted thereunder shall remain effective and can be amended by the Company from time to time pursuant to the applicable terms thereunder. If any outstanding awards under the Existing Plans are subsequently forfeited, then the shares subject to such awards shall be available for the grant pursuant to the 2020 Plan. The 2020 Plan permit the grant of option, restricted share or restricted share units award. The maximum aggregate number of ordinary shares that may be issued pursuant to all awards under the 2020 Plan is 46,560,708 Class A ordinary shares. To the extent any award granted pursuant to our 2010 Plan or 2014 Plan terminates, expires, lapses or forfeited after the effective date for any reason, shares subject to such awards shall also become available to the grant of an award pursuant to the 2020 Plan. As of February 28, 2022, options to purchase 349,254 ordinary shares and 2,584,275 restricted share units, or RSUs, have been granted to our employees, directors and consultants without giving effect to the options that were exercised or terminated and RSUs that were vested.

Name	Options Granted	Restricted Share Units	Exercise Price (US$/ Share)	Date of Grant	Date of Expiration
Sheng Chen	*	–	0.15	July 16, 2010	July 16, 2020
	–	*	–	August 30, 2012	–
	–	*	–	November 23, 2013	–
	–	*	–	March 7, 2015	–
	–	*	–	November 21, 2015	–
	–	*	–	November 26, 2016	–
	–	*	–	August 18, 2019	–
Yoshihisa Ueno	–	*	–	October 1, 2012	–
	–	*	–	April 25, 2014	–
	–	*	–	December 2, 2017	–
	–	*	–	March 7, 2018	–
	–	*	–	March 3, 2020	–
Kenneth Chung-Hou Tai	–	*	–	October 16, 2012	–
	–	*	–	November 21, 2015	–
	–	*	–	August 14, 2016	–
	–	*	–	May 12, 2017	–
	–	*	–	March 7, 2018	–
	–	*	–	May 15, 2019	–
	–	*	–	March 3, 2020	–
Sean Shao	–	*	–	November 21, 2015	–
	–	*	–	May 15, 2019	–
	–	*	–	March 3, 2020	–
Erhfei Liu	–	*	–	November 21, 2015	–
	–	*	–	May 15, 2019	–
	–	*	–	March 3, 2020	–
Yao Li	–	*	–	August 15, 2018	–
	–	*	–	May 24, 2021	–
Samuel Yuan-Ching Shen	–	*	–	August 18, 2020	–
Shiqi Wang	–	*	–	April 16, 2018	–
	–	*	–	January 2, 2020	–
Tim Chen	–	*	–	August 18, 2020	–
Other individuals as a group	28,953,524	9,308,167	0.15 to 0.85	–	–

* *Shares underlying vested options are less than 1% of our total outstanding shares.*

Our 2010 Plan, 2014 Plan and 2020 Plan have similar terms, the following paragraphs describe the principal terms of these plans.

Plan Administration. Our board and the compensation committee of the board will administer our plans. A committee of one or more members of the board designated by our board or the compensation committee is also authorized to grant or amend awards to participants other than senior executives. The committee will determine the provisions and terms and conditions of each award grant. It shall also have discretionary power to interpret the terms of our plans.

Award Agreement. Awards granted under our plans are evidenced by an award agreement that sets forth terms, conditions and limitations for each award, which may include the term of an award, the provisions applicable in the event the participant's employment or service terminates, and our authority to unilaterally or bilaterally amend, modify, suspend, cancel or rescind an award.

Eligibility. We may grant awards to our employees, consultants and directors. However, no shares may be optioned, granted or awarded if such action would cause an incentive share option to fail to qualify as an incentive share option under Section 422 of the Internal Revenue Code of 1986 of the United States.

Acceleration of Awards upon Change in Control. The participant's awards shall become fully exercisable and all forfeiture restrictions on such awards shall lapse, unless converted, assumed or replaced by a successor.

Exercise Price. The exercise price of an option shall be determined by the plan administrator and set forth in the award agreement and may be a fixed or variable price related to the fair market value of the shares, to the extent not prohibited by applicable laws. Subject to certain limits set forth in the plan, the exercise price may be amended or adjusted in the absolute discretion of the plan administrator, the determination of which shall be final, binding and conclusive. To the extent not prohibited by applicable laws or any exchange rule, a downward adjustment of the exercise prices of options shall be effective without the approval of the shareholders or the approval of the affected participants.

Vesting Schedule. In general, our plan administrator determines, or the evidence of the award specifies, the vesting schedule.

Amendment and Termination of the Plan. With the approval of our board, our plan administrator may, at any time and from time to time, amend, modify or terminate the plan, provided, however, that no such amendment shall be made without the approval of our shareholders to the extent such approval is required by applicable laws, or in the event that such amendment increases the number of shares available under our plan, permits our plan administrator to extend the term of our plan or the exercise period for an option beyond ten years from the date of grant or results in a material increase in benefits or a change in eligibility requirements, unless we decides to follow home country practice.

Employees

We had 2,295, 2,599 and 3,221 employees as of December 31, 2019, 2020 and 2021, respectively. The following table sets forth the number of our employees by function as of December 31, 2021:

	As of December 31, 2021	
Functional Area	**Number of Employees**	**% of Total**
Operations	1,676	52%
Sales, marketing and customer support	424	13%
Research and development	493	15%
General and administrative	628	20%
Total	3,221	100%

Among our total employees as of December 31, 2021, 1,629 were located in Beijing, and 1,592 in other cities in China.

Our recruiting efforts include on-campus recruiting, online recruiting and the use of professional recruiters. We partner with leading national research institutions and employ other measures designed to bring us into contact with suitable candidates for employment.

As required by regulations in China, we participate in various government statutory employee benefit plans, including social insurance funds, namely a pension contribution plan, a medical insurance plan, an unemployment insurance plan, a work-related injury insurance plan and a maternity insurance plan, and a housing provident fund. We are required under PRC law to contribute to employee benefit plans at specified percentages of the salaries, bonuses and certain allowances of our employees up to a maximum amount specified by the local government from time to time.

We enter into standard labor contracts with our employees. We also enter into standard confidentiality and non-compete agreements with our senior management. The non-compete restricted period typically expires two years after the termination of employment, and we agree to compensate the employee with a certain percentage of his or her pre-departure salary during the restricted period.

We believe that we maintain a good working relationship with our employees, and we have not experienced any major labor disputes.

Legal Proceedings

From time to time, we are subject to legal proceedings, investigations and claims incidental to the conduct of our business. For risks and uncertainties relating to the pending case against us. We may be subject to legal proceedings or arbitration claims in the ordinary course of our business, and the court rulings or arbitration awards may not be favorable to us. We are currently not involved in any legal or administrative proceedings that may have a material adverse impact on our business, financial position or profitability.

Litigation

In September 2014, our Company and certain of our officers and directors were named as defendants in two putative securities class actions filed in U.S. federal district courts in Texas: Sun v. 21Vianet Group, Inc. et al., Civil Action No. 14 CV 926 (E.D. Tex.) and Singh v. 21Vianet Group, Inc. et al., Civil Action No. 14 CV 894 (E.D. Tex.). The Sun action originally was filed in the U.S. District Court for the Southern District of Texas, and was transferred to the U.S. District Court for the Eastern District of Texas, or the Court. The complaints in both actions alleged that certain of our Company's financial statements and other public disclosures contained misstatements or omissions and asserted claims under the U.S. securities laws. On September 15, 2015, the Court entered an order consolidating the cases and on September 21, 2015, the Court entered an order appointing a lead plaintiff and lead counsel for the consolidated case. On September 13, 2016, the lead plaintiff filed an amended complaint against our Company and certain of our personnel and sought to represent a class of persons who allegedly suffered damages as a result of their trading activities related to our Company's ADSs from August 20, 2013 to August 16, 2016. After our motion to dismiss the case was denied, on April 9, 2018, the lead plaintiff filed an unopposed motion for preliminary approval of class action settlement, requesting that the Court (i) preliminarily approve a settlement agreement, pursuant to which the parties agreed to settle the case for US$9,000,000, (ii) preliminarily certify the proposed settlement class, (iii) approve the parties' proposed notice to the settlement class, and (iv) set the date for a hearing by the Court to consider the final approval of the settlement and entry of a proposed final judgment approving class action settlement, the plan of allocation of settlement proceeds, and lead counsel's application for an award of attorneys' fees and expenses. The Court granted that motion and, on October 31, 2018, held a settlement approval hearing. On November 9, 2018, the Court approved the settlement and issued final judgment, ending the case.

Disputes with Shanghai VNET Information System Co., Ltd.

Shanghai VNET Information System Co., Ltd. is a company bearing "VNET" in its name but is not affiliated with us. In January 2008, VNET Beijing and VNET China brought two lawsuits against Shanghai VNET Information System Co., Ltd. in a Beijing court for intellectual property rights infringement and unfair competition. VNET Beijing and VNET China prevailed in each case. The court ordered Shanghai VNET Information System Co., Ltd. to stop infringing our trademark and stop engaging unfair competition activities. VNET Beijing and VNET China was also awarded RMB150,000 in damages for each case. In October 2010, VNET China filed another complaint against Shanghai VNET Information System Co., Ltd. for domain name infringement and unfair competition. In July 2011, Shanghai VNET Information System Co., Ltd. settled the case with us and transferred the domain name www.VNET.com.cn to us for free. However, Shanghai VNET Information System Co., Ltd. may continue to include "VNET" as part of its official company name when the name is spelt out in full, while using "VNET" or our logo in a short form or other context is prohibited.

Our executive chairman, Mr. Sheng Chen, holds a minority equity interest in Shanghai VNET Information System Co., Ltd. due to historical reasons. As a result of the restriction on equity transfer pursuant to its articles of association, it is not practical for Mr. Chen to transfer his equity interest in Shanghai VNET Information System Co., Ltd. to us or any other parties. Mr. Chen, however, has executed an irrevocable power of attorney, pursuant to which Mr. Chen has appointed VNET Beijing as his attorney-in-fact to attend shareholders' meeting of Shanghai VNET Information System Co., Ltd. and to exercise all the shareholder's voting rights. Such power of attorney remains valid and irrevocable so long as Mr. Chen remains the shareholder of Shanghai VNET Information System Co., Ltd.

Interest Rate Risk

Our exposure to interest rate risk primarily relates to interest expenses incurred in respect of borrowings, finance lease liabilities as well as interest income generated by excess cash, which is mostly held in interest-bearing bank deposits. As of December 31, 2021, we had (i) long-term borrowings (current portions) with an aggregate outstanding balance of RMB384.2 million (US$60.3 million), and (ii) long-term borrowings (excluding current portions) with an aggregate outstanding balance of RMB2,215.0 million (US$347.6 million).

The short-term bank borrowings bore a weighted average interest rate of 5.22% per annum. The long-term borrowings bore weighted-average interest rate of 5.31% per annum. A hypothetical one percentage point (100 basis-point) decrease in interest rates would have resulted in a decrease of approximately RMB26.0 million (US$4.1 million) in interest expense for the year ended December 31, 2021. We have not used derivative financial instruments in our investment portfolio. Interest earning instruments and interest-bearing obligations carry a degree of interest rate risk. We have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in market interest rates. However, our future interest income and interest expenses may fluctuate due to changes in market interest rates.

Foreign Exchange Risk

We earn most of our revenues and incur most of our expenses in Renminbi, and most of our sales and purchase contracts are denominated in Renminbi. We have not used any derivative financial instruments to hedge our exposure to foreign exchange risk. The Renminbi depreciated by 6.5% against the U.S. dollar in 2020 and then depreciated 2.3% in 2021. The Company intends to hold U.S. dollar-denominated financial assets and will convert to RMB according to the trend of exchange rate changes. As of December 31, 2021, we had total U.S. dollar-denominated cash and cash equivalents, restricted cash and short-term investments in the amount of US$66.9 million. A hypothetical 10% increase in the exchange rate of the U.S. dollar against the RMB would have resulted in an increase of RMB42.6 million (US$6.7 million) in the value of our U.S. dollar-denominated financial assets at December 31, 2021.

The conversion of Renminbi into foreign currencies, including U.S. dollars, is based on rates set by the People's Bank of China. Since June 2010, the RMB has fluctuated against the U.S. dollar, at times significantly and unpredictably, and in recent years the RMB has depreciated significantly against the U.S. dollar. It is difficult to predict whether the depreciation will continue and how market forces or PRC or U.S. government policy may impact the exchange rate between the RMB and the U.S. dollar in the future. As our costs and expenses are mostly denominated in RMB, the appreciation of the RMB against the U.S. dollar would increase our costs in U.S. dollar terms. In addition, as our operating subsidiaries and VIEs in China receive revenues in RMB, any significant depreciation of the RMB against the U.S. dollar may have a material and adverse effect on our revenues in U.S. dollar terms and financial condition, and the value of, and any dividends payable on, our ordinary shares. For example, to the extent that we need to convert U.S. dollars into Renminbi for capital expenditures and working capital and other business purposes, appreciation of the Renminbi against the U.S. dollar would have an adverse effect on the RMB amount we would receive from the conversion. Conversely, if we decide to convert Renminbi into U.S. dollars for the purpose of making payments for dividends on our ordinary shares or ADSs, strategic acquisitions or investments or other business purposes, appreciation of the U.S. dollar against the Renminbi would have a negative effect on the U.S. dollar amount available to us.

Significant Investments Held, Material Acquisitions or Disposals of Subsidiaries and Future Plans Regarding Capital Asset Acquisitions or Material Investments

Save for any investments in the subsidiaries of VNET, VNET had no significant investments held or material acquisitions and disposals of subsidiaries, associates and joint ventures during the year ended December 31, 2021. As at December 31, 2021, VNET had no clearly defined plans relating to significant capital asset acquisitions or material investments, nor future plans of significant disposals of subsidiaries, associates and joint ventures.

Gearing Ratio

As at December 31, 2021, the gearing ratio (total liabilities divided by total assets) of VNET was approximately 67% (December 31, 2020: 64%).

C. MANAGEMENT DISCUSSION AND ANALYSIS OF THE RESULTS OF THE TARGET GROUP FOR THE YEAR ENDED 31 DECEMBER 2022

Unless otherwise indicated and except where the context otherwise requires, references in this annual report on Form 20-F to:

- "ADSs" refers to our American depositary shares, each representing six Class A ordinary shares, par value US$0.00001 per share;

- "VNET," "the Company," "we," "us," "our company," and "our" refer to VNET Group, Inc., a Cayman Islands exempted company and its subsidiaries and, in the context of describing our operations and consolidated financial information, also include its consolidated affiliated entities;

- "China" or the "PRC" refers to the People's Republic of China, excluding, for the purpose of this annual report only, Hong Kong, Macau and Taiwan;

- "Greater Bay Area" refers to Guangdong-Hong Kong-Macau Greater Bay Area, consisting of Guangzhou, Shenzhen, Zhuhai, Foshan, Dongguan, Zhongshan, Jiangmen, Huizhou, and Zhaoqing, as well as Hong Kong and Macau;

- "ordinary shares" or "shares" refer to our ordinary shares, which include all Class A ordinary shares, par value US$0.00001 per share, Class B ordinary shares, par value US$0.00001 per share, Class C ordinary shares, par value US$0.00001 per share, and Class D ordinary shares, par value US$0.00001 per share collectively;

- "variable interest entities," or "VIEs," refer to Beijing Yiyun Network Technology Co., Ltd. (previously known as Beijing aBitCool Network Technology Co., Ltd.), or VNET Technology, Beijing iJoy Information Technology Co., Ltd., or BJ iJoy, WiFire Network Technology (Beijing) Co., Ltd. (previously known as aBitcool Small Micro Network Technology (BJ) Co., Ltd.), or WiFire Network and Shanghai Zhiyan Yunwei Technology Co., Ltd., or SH Zhiyan, four domestic PRC companies in which we do not have equity interests but whose financial results have been consolidated into our consolidated financial statements in accordance with U.S. GAAP, and our being the primary beneficiary of the four companies for accounting purposes;

- "consolidated affiliated entities" refer to the variable interest entities and their direct and indirect subsidiaries; and

- "RMB" and "Renminbi" refer to the legal currency of China. Unless otherwise noted, all translations from RMB to U.S. dollars and from U.S. dollars to RMB in this annual report were made at a rate of RMB6.8972 to US$1.00, the exchange rate on December 30, 2022 as set forth in the H.10 statistical release published by the Federal Reserve Board.

Business Overview

We are a leading carrier-neutral and cloud-neutral data center service provider in China. We have one of the largest carrier-neutral data center networks in China with our 45 self-built data centers and 98 partnered data centers with an aggregate capacity of 87,322 cabinets under our management as of December 31, 2022. Our data centers are concentrated in tier-1 cities in China and their surrounding regions, which have favorable supply-demand dynamics, owing to dense internet traffic, scarce resources and high demand for data center facilities. Most of our data centers and our POPs are connected across China.

We offer managed hosting services to host our customers' servers and networking equipment and provide interconnectivity to improve the performance, availability and security of their internet infrastructure. We have adopted a "dual-core" strategy to address both retail and wholesale data center market opportunities. Our managed retail services provide different levels of services that are scalable to meet our customers' needs, from a single cabinet up to megawatt-scale deployments. Our managed wholesale services provide customers with new data center sites constructed and developed by us based on their specified standards. We believe that the scale of our data center footprint and networking assets as well as our carrier- and cloud-neutrality, position us well to capture the vast opportunities in the rapidly expanding market of internet and cloud computing infrastructure services in China.

In addition, we are a first mover among China's carrier-neutral data center service providers in offering cloud services through partnerships to cover public, private and hybrid cloud scenarios. We provide customized enterprise VPN services and solutions, including software-defined wide area network, or SD-WAN, to enterprises across various industries. These value-added services strengthen our capability to provide quality services and meet our customers' additional demands.

According to Frost & Sullivan, the continuing drivers for the data center demands consist of (i) growing IT outsourcing capacity by enterprises; (ii) implementation of next-generation 5G network and disruptive technologies; (iii) growing data center service demand from China's cloud service providers and enterprise digital transformation; (iv) supportive government policies, despite the recent regulatory headwinds; (v) customer segments drive data center service demand; and (vi) the overall growing trend of generating and processing data and robust growth in data traffic. From 2017 to 2022, China's carrier- neural data center service market has been growing by a CAGR of 32.0% and is expected to grow by a CAGR of 20.2% from 2023 to 2027. China's cloud service market has been growing by a CAGR of 31.4% from 2017 to 2022 and is expected to grow by a CAGR of 23.8% from 2023 to 2027. As a leading carrier-neutral and cloud-neutral data center service provider in China, we had a 10.0% market share in the carrier-neutral data center service market in terms of data center service revenues in 2022.

We are a pioneer in the carrier-neutral data center industry in China and commenced our operations in 1999. According to Frost & Sullivan, we are the first carrier-neutral data center service providers in China with infrastructure interconnected with all major network providers, which connect and share data traffic to help scale the rapid development of the early internet industry in China. Based on our partnership with Microsoft to introduce Azure and Microsoft 365 (formerly Office 365) in China in 2013, we are also the first carrier-neutral data center service provider to offer global cloud services in China and our services have helped accelerate the digital transformation of our enterprise customers.

We are a carrier-neutral internet infrastructure service provider. Our infrastructure is interconnected with the networks operated by all China's telecommunications carriers, major non-carriers and local internet service providers. The interconnectivity enables each of our data centers to function as a network access point for our customer's data traffic. In addition, we believe that our proprietary smart routing technology allows us to automatically select an optimized route to direct our customers' data traffic to ensure fast and reliable data transmission. We believe this advanced interconnectivity within and beyond our network distinguishes ourselves from our competitors and provides an effective solution to address our customers' needs that arise from inadequate public internet infrastructure and network interconnectivity in China. As a result, businesses are increasingly relying upon internet infrastructure services providers and in particular, carrier-neutral internet infrastructure services providers, to enhance and optimize key elements of their IT and network infrastructure.

With a nationwide data center network and comprehensive service offerings, we have attracted a diversified and loyal customer base. As of December 31, 2022, we had over 1,400 customers for our managed hosting services and over 7,000 enterprise customers in total. We also enjoy long- standing relationships with our customers and have high customer retention, as evidenced by our low average monthly hosting churn rate for managed hosting services, which was 0.3%, 0.2% and 0.2% in 2020, 2021 and 2022, respectively.

Our Service Offerings

Through our quality data center network, we offer comprehensive hosting and related services, including:

- *Managed Hosting Services* consisting of managed retail services and managed wholesale services. Our managed retail services include (i) colocation services that dedicate data center space to house our customers' servers and networking equipment and provide tailored server administration services, (ii) interconnectivity services that allow customers to connect their servers with each other, internet backbones in China and other networks through our Border Gateway Protocol, or BGP, network, or our single-line, dual-line or multiple-line networks, and (iii) value-added services, including hybrid IT services, bare metal services, firewall services, server load balancing, data backup and recovery, data center management, server management, and backup server services. To address the wholesale IDC market opportunities, we established a "dual-core" strategy in 2019 to expand our services to managed wholesale services to China's internet giants and large-scale cloud computing service providers. We construct and deliver data centers based on these customers' required specifications and standards;

- *Cloud Services* that allow customers to run their applications over the internet using our IT infrastructure rather than having the infrastructure on their own premises; and

- *VPN Services* that extend customers' private networks by setting up secure and dedicated connections through the public internet.

Our data centers host the servers of our customers and meet their needs to deploy computing, network, storage and IT infrastructure. Our services are scalable, allowing our customers to purchase space and power and upgrade connectivity and services as their requirements evolve. In addition, our customers benefit from our data centers' wide range of physical security features, including sensitive smoke detection systems, fire suppression systems, secured access, around-the-clock video camera surveillance and security breach alarms. Our data centers are fully-redundant and feature resilient power supplies, energy efficient design, connection with multiple network providers and 24/7 on-site support provided by our skilled engineers. As a result, we are able to provide service-level agreement for 99.9% uptime for power for our self-built data centers. As a carrier-neutral data center service provider, we provide high interconnectivity to our customers with our access to multiple carriers and service providers and the availability of multiple-provider bandwidth. By securing multiple suppliers for connectivity and using redundant hardware, we are able to guarantee 99.9% internet connectivity uptime for our self-built data centers.

Managed Hosting Services

We have been providing managed retail services since the inception of our operations in 1999 and started to provide managed wholesale services in 2019 to implement our "dual-core" strategy that we developed in 2019.

Managed Retail Services. Our managed retail services include colocation services, interconnectivity services, and value-added services.

- *Colocation Services* allow customers to lease partial or entire cabinets for their servers. Our customers have full control over their server(s) housed in our data centers. Depending on customer needs, we provide different levels of tailored server administration services, including operating system support and assistance with updates, server monitoring, server backup and restoration, server security evaluation, firewall services, and disaster recovery. Our customers' servers are housed in our data centers providing redundant power supplies and heating, ventilating and air conditioning systems. Our colocation services relieve customers from the daily pressures of IT infrastructure maintenance so that they can focus on their core businesses. Customers have the option to either place their servers and equipment in standard cabinets dedicated for their exclusive use, or in cabinets shared with other customers. They can customize their cabinet space for their servers, network connections and other equipment. Customers can elect to buy the hardware that they place within their cabinets from their chosen suppliers. In addition, customers can also lease power-enabled blank space, where they can place their own cabinets in our data centers or use our services to build their customized cabinet space.

- *Interconnectivity Services* are provided by us in the following ways:

  - Border Gateway Protocol ("**BGP**") Network Services. We provide network services that use BGP routing protocol and policies, which allow the internet to become a decentralized system and thereby reduces traffic congestion and data transmission time;

  - Single-line Network Services. Some of our customers choose to connect their servers only to one telecommunication carrier in China. Based on their selections, we provide them with network connection to the major telecommunication carriers, including China Telecom, China Unicom and China Mobile; and

  - Multiple-line Network Services. As a carrier-neutral service provider, our data centers are connected to all carrier and non-carrier networks in China. Customers then may choose to connect their servers to two or multiple networks, which provides more cost-effective internet access and ensures better business continuity. Our interconnectivity services connect our customers with each other, connect our data centers with telecommunication carriers' backbone network and other networks. We provide cross-connection services to our customers. Upon the request of the customers, we utilize single or multi-mode fibers to create links between the customers directly and exclusively.

- *Value-Added Services* are provided by us in the following ways:

  - Hybrid IT Services. Our hybrid IT services provide customers with a complete package of infrastructure service offerings, conveniently bundled to expedite the customer's process to launch their applications and products to the extent possible. In conjunction with our infrastructure-as-a-service, or IaaS, and platform-as-a-service, or PaaS, hybrid IT services combine colocation, servers, connectivity, storage and customer services to save IT infrastructure deployment time, and provide a complete, reliable, and secured environment for customer's IT demands. As more customers move their IT resources to the cloud, our cloud-neutral platform will enable our hybrid IT services to provide elastic cloud services as well as their inter-linked connections;

  - Private Cloud, Hybrid Cloud and Cloud Native Services. We provide private cloud, hybrid cloud and multi-cloud managed services to address enterprises' needs in aspects of data sovereignty, cost of ownership, and customization through our proprietary technologies and technical integration with selected partners, such as VMWare, Redhat and ZStack. Through BJ TenxCloud, one of our subsidiaries, we also provide digitalization solutions to customers based on our in-house developed cloud native platform. Customers can fully exploit elasticity and flexibility of our cloud solutions and modernize their applications and infrastructure, to achieve more efficient software development and production; and

  - Other Value-Added Services. To complement our hosting services and enhance our customers' experiences, we also provide other value- added services, including bare metal services, firewall services, server load balancing, data backup and recovery, data center management, server management, and standby server services. In addition, we also provide customers with traffic charts and analysis, gateway monitoring for servers, domain name system setup, defense mechanism against distributed denial of service (DDOS) attacks, basic setting of switches and routers, and virus protections.

- *Managed Wholesale Services.* Our managed wholesale services started in 2019 and provide internet giants and large-scale cloud computing service providers with data center sites constructed and developed by us. Based on the specific requirements of our customers, we source properties for data center sites by acquiring or leasing green-field sites or existing industrial buildings from third parties, and then design and, through cooperation with developers, contractors, and suppliers, build the data center facilities with advanced design and high technical specifications. We believe our core competency and capabilities, acquired from decades of industry experience in the retail segment, are also applicable and critical when we expand our business into the wholesale segment and develop wholesale data centers. As of December 31, 2022, the total capacity commitment from our wholesale customers was 316 megawatts.

- *Planning:* We engage with our clients from the site selection and planning stage and choose the sites for wholesale data centers at the strategic locations which fits into our clients' IT infrastructure deployment and provides great access to power and connectivity. Backed by multi-year experience and strong presence in key markets, we are able to conduct in-depth analysis and select the most suitable location based on clients' requirements by acquiring or leasing green-field sites or existing industrial buildings from third parties. Our team works closely with local government authorities to obtain necessary permits and approvals and with electric utilities to obtain sufficient power supply. We also actively cooperate with telecommunication carriers to ensure multi-carrier connectivity to our wholesale data centers.

- *Design:* Leveraging our technological know-how from our internal design teams and a comprehensive data center product portfolio, developing and accumulating through the designs and construction of retail data centers, we are dedicated to ensuring that each of our wholesale data centers meets the specific requirements of our clients and achieves industry leading energy efficiency and operating performance. Our technology strengths, such as advanced cooling technology and power management technology, are integrated due to close collaboration among our internal design team, research and development team and external design institutes.

- *Construction:* We believe our well-established relationships with high quality contractors and suppliers, combined with our specialized construction team consisting of experienced professionals, help us to ensure fast delivery and cost effectiveness in data center construction. As opposed to retail data centers, typically the wholesale data centers are built to suit and customized to fulfill our clients' different technical requirements. Furthermore, our clients require us to deliver wholesale data centers in large volumes within a prescribed construction period.

- *Operations:* We are one of the first carrier neutral data center service providers in China and commenced operations in 1999. Since then, we haven't encountered any disastrous accident over the last 20 years, demonstrating our strong operational expertise. We are able to provide service-level agreement for 99.9% uptime for power and 99.9% uptime for network connectivity for our self-built data centers. Our operational excellence to deliver wholesale data centers with high reliability, availability, security and manageability are sought by our wholesale clients. As a result, operations and management expertise becomes an increasingly important criteria when they select their data center partners.

Cloud Services

We started providing public cloud services in 2013 through our cooperation with Microsoft. Under our cooperation arrangement with Microsoft, we provide Microsoft's cloud services, including Azure, Microsoft 365 (formerly Office 365), Dynamics 365 and Power Platform, to customers in mainland China by entering into service agreements with such end customers.

We provide IaaS, PaaS, and software-as-a-service, or SaaS, to our enterprise and individual end customers on the public cloud. Microsoft Azure provides our customers with a one-stop shop to purchase a portion of the pooled computing resources, control the applications uploaded to the virtual servers and/or access to the applications run by various operators on the cloud infrastructure, and pay on an on-demand basis. Through Microsoft 365 services, we provide our customers with not only the complete Microsoft 365 applications, but also business-class email, file sharing and HD video conferencing, all working together and connected in the public cloud so that customers can have access to everything they need to run their business from anywhere.

The total customer billing amounts are divided between Microsoft and us and we retain a portion of the total customer billing amounts based on the agreed-upon metrics. All sales amounts from our services to customers are deposited into an escrow account which are jointly administered by Microsoft and us, and we settle the payments to Microsoft on a monthly basis. In addition, we are entitled to receive incentive payments from Microsoft upon the completion of certain sales or services conditions. Our current agreement with Microsoft has a term of ten years till 2027.

VPN Services

We offer VPN services, primarily through Dermot Holdings Limited and its subsidiaries, or Dermot Entities, which we acquired in August 2014 and hold the brand of DYXnet. We offer customers best-in-class, enterprise-grade network services in numerous cities throughout Greater China and the wider Asia-Pacific region. We provide enterprise network solutions including Multiprotocol Label Switching ("**MPLS**") and Software-Defined WAN ("**SD-WAN**"), internet access and network security solutions, and fully managed network enabling connectivity with 216 POPs across Asia, of which 95 POPs are for VPN services. We have further expanded our product portfolio to include Cloud & SaaS solutions, and the fast deployment on connecting public cloud around the Globe with high-speed network connections. In 2022, we launched the Secure Access Service Edge ("**SASE**") solution based on our SD-WAN services.

Additionally, we have been appointed as one of the SD-WAN Services Standard Drafting Units of China Communications Standards Association ("**CCSA**"). We obtained the "SD-WAN Ready" certificate for overall solutions issued by the China Academy of Information and Communications Technology ("**CAICT**") in 2020, and further certified with "SD-WAN Ready 2.0" in 2022. We are among the first official members of the China Cross-border Data Telecommunications Industry Alliance for being recognized as legally compliant by China's Communications Administration. We are also among the first batch of ICT service providers in Greater China to obtain several ISO international certifications including ISO/IEC 27001: 2013, ISO/IEC 20000-1: 2018, and ISO 9001: 2015 for information security, IT service management, and quality management, respectively.

Our Infrastructure

Our infrastructure, which consists of our data centers and data transmission network, is the foundation upon which we provide services to our customers. As of December 31, 2022, we operate 45 self-built data centers and 98 partnered data centers located in tier-1 and their surrounding cities, including all of China's major internet hubs, with 87,322 cabinets under management. Our extensive network, consisting of 216 POPs, is a "high-speed internet railway" that connects our data centers with each other and links them to China's telecommunication backbones.

Our Data Centers

We adopt a distributed deployment method when choosing locations for our partnered data centers based on the specific requests of our customers, demands in different cities and our strategy for POP establishment; therefore, the locations and number of our partnered data centers are subject to change from time to time. We operate two types of data centers: self-built and partnered. We define "self-built" data centers as those with our owned cabinets, and data center equipment housed in buildings we owned, leased from third parties, or we purchased from third parties. We define "partnered" data centers as the data center space and cabinets we leased from China Telecom, China Unicom, China Mobile and other third parties through agreements. As of December 31, 2022, we operate 45 self-built data centers housing 82,581 cabinets and 98 partnered data centers housing 4,741 cabinets.

The table below sets forth the number of data centers and cabinets under our management as of December 31, 2020, 2021 and 2022, respectively.

	As of December 31,		
	2020	**2021**	**2022**
Data Centers			
Self-built	32	40	45
Partnered	52	64	98
Total	84	104	143
Cabinets			
Self-built	49,876	74,143	82,581
Partnered	3,677	4,397	4,741
Total	53,553	78,540	87,322

Our data centers are located in over 30 cities as of the date of this annual report. Our nationwide network of data centers not only enables us to serve customers in extended geographic areas, but also establishes a national data transmission network that sets up connections among carriers and service providers in various locations.

The table below sets forth our portfolio of self-built cabinets housed by our data centers as of December 31, 2022.

	As of December 31, 2022	
	Number of Self-built Cabinets Housed	**Percentage of Contribution**
Greater Beijing Area	Approximately 39,000	47.3%
Yangtze River Delta	Approximately 23,500	28.5%
Greater Bay Area	Approximately 9,300	11.2%
Others	Approximately 10,700	13.0%
Total	Approximately 82,500	100.0%

We build and operate our data centers in compliance with high industry standards in order to provide our customers with secure and reliable environments that are necessary for optimal internet interconnectivity. Our data centers generally feature:

- *Resilient Power* – Redundant, high-capacity and stable power supplies, backed by uninterruptible power supply, or UPS, high-performance batteries and diesel generators;

- *Physical Security* – Round-the-clock monitoring by on-site personnel, which includes verification of all persons entering the building, security barriers, video camera surveillance and security breach alarms;

- *Controlled Access* – Access to the buildings, data floors and individual areas designated for particular customers via individually-programmed access cards and visual identification;

- *Fire Detection and Suppression* – Sensitive smoke detectors linked to building management systems provide early detection to help avoid fire, loss and business disruption. These are complemented by an environmentally-friendly gas-based or water mist fire suppression system to put out fires;

- *Air Conditioning* – To ensure optimal performance and avoid equipment failure, all data center floors are managed to make sure that customers' equipment is maintained at a controlled temperature and humidity; and

- *24/7 Support* – We staff our data centers with capable and experienced service teams and we believe we were the first data center service provider in China to offer 24/7 customer service.

These features minimize chances of interruption to the servers housed in our data centers and ensure the business continuity of our customers. In addition, we believe we were the first data center service provider in China to receive both the ISO 9001 quality system certification by the American Registrar Accreditation Board and a certification by the United Kingdom Accreditation Service.

Our Network

Our network transmits data and directs internet traffic, forming an internet highway system that is linked to the networks of major carriers, non-carriers and ISPs and enhances communications among our data centers, our customers and end users located throughout China and around the world. As of December 31, 2020, 2021 and 2022, our network connected 165, 183 and 216 POPs throughout China.

Our network also features numerous interfaces with four telecommunication carriers in China, which are China Telecom, China Unicom, China Mobile and China Education Network. Our network is not only connected to the headquarters of each carrier, but also with their local networks throughout China.

Due to our high-quality data center infrastructure, extensive data transmission network and proprietary smart routing technologies, we are able to deliver high-performance hosting and related services that can effectively meet our customers' business needs, improve interconnectivity among service providers and end users, and effectively address the issue of inadequate network interconnectivity in China.

Training and Development

We attach great importance to the training of talents, formulate the Employee Training Management System and establish a systematic and multi-level employee training system to carry out targeted training for employees at different development stages. We realize digital talent training through the VNET E-Learning platform. As of December 31, 2022, 576 courses had been launched on the platform.

Through competitive compensation as well as a fair and effective performance evaluation mechanism, we continue to attract and motivate outstanding talents. We have established a comprehensive job level structure and a reasonable promotion mechanism to provide all employees with equal development opportunities.

OPERATING AND FINANCIAL REVIEW AND PROSPECTS

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our consolidated financial statements and the related notes included elsewhere in this annual report on Form 20-F. This discussion may contain forward-looking statements based upon current expectations that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under, in other parts of this annual report on Form 20-F.

A. Operating Results

Overview

We are a leading carrier-neutral and cloud-neutral data center services provider in China. We have one of the largest carrier-neutral data center networks in China with our 45 self-built data centers and 98 partnered data centers with an aggregate capacity of 87,322 cabinets under our management as of December 31, 2022.

We offer managed hosting services to host our customers' servers and networking equipment and provide interconnectivity to improve the performance, availability and security of their internet infrastructure. We also provide cloud services through partnerships to cover public, private and hybrid cloud scenarios. In addition, we provide customized enterprise VPN services and solutions, including SD-WAN, to enterprises across various industries. These value-added services strengthen our capability to provide quality services and meet our customers' additional demands.

We historically provided managed network services, consisting of CDN services, hosting area network services, route optimization and last-mile broadband services. In September 2017, we disposed of 66.67% of the equity interests in six wholly-owned subsidiaries engaged in the managed network services business, collectively referred as to the WiFire Entities. In September and December 2017, we disposed of all of our equity interests and shares in Sichuan Aipu Network Co., Ltd. and its affiliates, collectively referred as the Aipu Group, engaged in the last-mile broadband business. As a result of these transactions, we deconsolidated the financial results related to the managed network services business from our consolidated statements of operations starting from the fourth quarter of 2017.

Our total net revenues generated from providing hosting and related services increased from RMB4,829.0 million in 2020 to RMB6,189.8 million in 2021 and further to RMB7,065.2 million (US$1,024.4 million) in 2022, representing a CAGR of 21.0% from 2020 to 2022. The total number of cabinets under our management increased from 53,553 as of December 31, 2020, 78,540 as of December 31, 2021 and further to 87,322 as of December 31, 2022. Our average monthly recurring net revenues from hosting and related services increased from RMB374.0 million in 2020 to RMB463.4 in 2021 and further to RMB565.1 million (US$81.9 million) in 2022. We recorded a net loss of RMB2,680.3 million in 2020, generated a net profit of RMB515.1 million in 2021 and recorded a net loss of RMB762.0 million (US$110.5 million) in 2022, which reflected share-based compensation expenses of RMB136.8 million, RMB320.0 million and RMB118.2 million (US$17.1 million) in 2020, 2021 and 2022, respectively. Our results of operations also reflect the effects of our acquisitions and dispositions during the respective periods.

Factors Affecting Our Results of Operations

Our business and results of operations are generally affected by the development of China's data center services market, which has grown rapidly in recent years. According to Frost & Sullivan, the total revenue of China's data center services market increased from RMB53.1 billion in 2017 to RMB150.1 billion in 2022, representing a CAGR of 23.1%, and is expected to grow at a CAGR of 14.4% from 2023 to 2027, reaching RMB304.5 billion by 2027. However, any adverse changes in the data center services market in China may harm our business and results of operations.

While our business is generally influenced by factors affecting the data center services market in China, we believe that our results of operations are more directly affected by company-specific factors, including the number of cabinets under management and cabinet utilization rate, monthly recurring revenues and churn rate, pricing, growth in complementary markets and optimization of our cost structure.

Number of Cabinets under Management and Cabinet Utilization Rate

Our revenues are directly affected by the number of cabinets under management and the utilization rates of these cabinet spaces. We had 53,553, 78,540 and 87,322 cabinets under management as of December 31, 2020, 2021 and 2022, respectively. Our utilization rates of cabinets were 58.9%, 53.1% and 55.0% as of December 31, 2020, 2021 and 2022, respectively. We calculate the cabinet utilization rate in a given period by dividing the number of billable cabinets as of the end the period by the number of cabinet capacity as of the end of the same period. Our period-end cabinet utilization rate fluctuates due to the continuous changes in both the amount of our billable cabinets and cabinet capacity. Our future results of operations and growth prospects will largely depend on our ability to increase the number of cabinets under management while maintaining optimal cabinet utilization rate.

With the rapid growth of China's internet industry, demand for cabinet spaces has increased significantly and we do not always have sufficient self-built data center capacity to meet such demand. It usually takes nine to eighteen months to build a data center together with cabinets and equipment installed. To meet our customers' immediate demand, we partner with China Telecom, China Unicom, China Mobile or other parties and lease cabinets from them. Due to the time needed to build data centers and the long-term nature of these investments, if we overestimate the market demand for cabinets, it will lower our cabinet utilization rate and negatively affect our results of operations.

Monthly Recurring Revenues and Churn Rate

Our average monthly recurring revenues and churn rate directly affect our results of operations. Our hosting and related services are based on a recurring revenue model. We consider these services recurring as we generally bill our customers and recognize revenues on a fixed and recurring basis each month during the terms of our service contracts with them, generally ranging from one to three years. Our non-recurring revenues are primarily comprised of fees charged for installation services, additional bandwidth used by customers beyond the contracted amount and other value-added services. These services are considered to be non-recurring as they are billed and recognized over the period of the customer service agreement.

We use "monthly recurring revenues" to measure the revenues we recognize from our managed hosting services on a recurring basis each month. In 2020, 2021 and 2022, our recurring revenues were consistently around 90% of our net revenues. Our average monthly recurring revenues from hosting and related services were RMB374.0 million, RMB463.4 million and RMB565.1 million (US$81.9 million) in 2020, 2021 and 2022. Our average monthly recurring revenues per cabinet for managed retail services was RMB8,984, RMB9,190 and RMB9,270 (US$1,344) for the year ended December 31, 2020, 2021 and 2022.

We use the churn rate to measure the reduction of monthly revenues that is attributable to the termination of customer contracts as a percentage of total monthly recurring revenues of the previous month. Our average monthly churn rate for our managed hosting services was 0.3% in 2020, 0.2% in 2021 and 0.2% in 2022.

Pricing

Our results of operations also depend on the price level of our services. Due to the quality of our services and our optimized interconnectivity among carriers and networks, we are generally able to command premium pricing for our services. Nonetheless, because we are generally regarded as a premium data center and network service provider, many customers only place their mission critical servers and equipment, but not other non-critical functions, in our data centers. As we try to acquire more business from new and existing customers, expand into new markets, or try to adapt to changing market conditions, we may need to lower our prices or provide other incentives to compete effectively.

Growth in New and Complementary Markets

Our results of operations also depend on the growth of our cloud service business and VPN service business that complement our core managed hosting service business.

Cloud services, largely through our partnerships with Microsoft and other cloud service providers, have continually contributed to our results of operations since 2013. While our cloud computing platforms are now supporting a significant number of customers, we believe the cloud computing market in China is still in its early stages. Key factors for growth in this market include signing up services from new customers, improving utilization rates of cloud computing resources with existing customers introducing well-developed applications to improve cloud computing adoption rates, and partnering with more cloud providers to offer a comprehensive cloud-neutral platform.

As one of the largest enterprise VPN service providers in the Asia Pacific region, we have experienced and expect continual growth in this market to meet customers' growing demand for enterprise-grade VPN services with secure, dedicated connections. Key growth drivers include adding new customers, increasing the number of connections with existing customers and realizing revenue synergies with our other business groups.

Our Cost Structure

Our ability to maintain and improve our gross margins depends on our ability to effectively manage our cost of revenues, which consist of telecommunications costs and other data center related costs. Telecommunications costs consist of (i) expenses associated with acquiring bandwidth and related resources from carriers for our data centers, and (ii) rentals, utilities and other costs in connection with the cabinets we lease from our partnered data centers. Other data center related costs include utilities and rental expenses for our self-built data centers, employee payroll, depreciation and amortization of our property and equipment, and other related costs. The changes in these costs usually reflect the changes in the number of cabinets under management and our headcount.

The mix of self-built data centers and partnered data centers also affects our cost structure. The gross margin for cabinets located in our partnered data centers is generally lower than that of cabinets located in our self-built data centers. This is because telecommunication carriers who lease cabinet spaces to us for our partnered data centers typically demand a profit on top of their costs in connection with the leasing of cabinet spaces to us. We plan to continue to lease data centers from such carriers or purchase data center facilities to meet the immediate market demand while building new or expanding our existing self-built data centers in Beijing, Shanghai, Shenzhen, Guangzhou, Yangtze Delta, and the Greater Bay Area. If we cannot effectively manage the market demand and increase the number of cabinets located in self-built data centers relative to partnered data centers, we may not be able to improve our gross margins.

Impact of the COVID-19 Pandemic on Our Business

The COVID-19 pandemic has not interrupted or affected the operation of our existing data centers or ability to provide our data center services to our customers. We had temporary suspensions of our sales and marketing activities, construction activities and business travel to ensure the safety and health of our employees in January and February of 2020. Since March 2020, these activities began returning to normal levels, and by the end of the second quarter of 2020 had largely returned to normal levels. After the initial outbreak of COVID-19, from time to time, especially since late 2021 and throughout 2022, there were resurgences of COVID-19 in many areas of China, particularly due to the Delta and Omicron variants. During the COVID-19 pandemic, we had to implement remote working arrangements and suspend our offline customer acquisition activities and business travels, which temporarily impacted our operations. We have experienced slower cash collection for administrative reasons as a result of the COVID-19 pandemic, unrelated to our customers' ability to pay, which has resulted in an increase in our accounts receivable. See the section titled "Operating and Financial Review and Prospects – B. Liquidity and Capital Resources – Cash Flows and Working Capital – Operating Activities." In late 2022, China modified its zero-COVID policy, and most of the travel restrictions and quarantine requirements were lifted in December 2022. There remains uncertainty as to the future impact of the virus, especially in light of this change in policy. See "The COVID-19 pandemic could materially and adversely affect our business, financial condition and results of operations." While the COVID-19 pandemic has not materially or adversely affected our business, results of operations or financial condition, whether the pandemic will have any such material or adverse impact on us going forward will depend on future developments, which are highly uncertain and cannot be predicted. As of the date of this document, we are not aware of any material or adverse effect on our financial condition as a result of the COVID-19 pandemic.

Key Components of Results of Operations

Net Revenues

The following table sets forth our net revenues for the years presented:

	For the Years Ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
		(in thousands)		
Net revenues	4,829,019	6,189,801	7,065,232	1,024,362

We generate all of our revenues from the hosting and related services business. We provide retail managed hosting services to house our customers' servers and networking equipment in our data centers, and wholesale managed hosting services to deliver customized data center sites to our customers based on their unique requirements. We also provide cloud services and VPN services as part of our hosting and related services business.

The contracts with our wholesale customers generally have terms ranging from eight to ten years. The contracts with our retail customers generally have terms ranging from one to three years and most of these contracts have an automatic renewal provision. Our customers are generally billed on a monthly basis according to the services used in the previous month.

Cost of Revenues

Our cost of revenues primarily consists of telecommunications cost, and other costs. The following table sets forth, for the periods indicated, our cost of revenues, in absolute amounts and as a percentage of our total net revenues:

	For the Years Ended December 31,						
	2020		2021		2022		
	RMB	*%*	*RMB*	*%*	*RMB*	*US$*	*%*
			(in thousands, except percentages)				
Cost of revenues:							
Telecommunications costs	2,092,887	43.3	2,477,366	40.0	2,813,513	407,921	39.8
Others	1,660,121	34.4	2,274,405	36.8	2,893,463	419,513	41.0
Total cost of revenues	3,753,008	77.7	4,751,771	76.8	5,706,976	827,434	80.8

Telecommunications costs refer to expenses incurred in acquiring telecommunication resources from carriers for our data centers, including bandwidth and cabinet leasing costs. Cabinet leasing costs cover rentals, utilities and other costs associated with the cabinets we lease from our partnered data centers. Our other costs of revenues include utilities costs for our self-built data centers, depreciation and amortization, employee payroll and other compensation costs and other miscellaneous items related to our service offerings.

We expect that our cost of revenues of hosting and related services will continue to increase as our business expands, both organically and as a result of acquisitions.

Operating Expenses

Our operating expenses consist of sales and marketing expenses, general and administrative expenses and research and development expenses. The following table sets forth our operating expenses, both as an absolute amount and as a percentage of total net revenues for the periods indicated.

	For the Years Ended December 31,						
	2020		2021		2022		
	RMB	*% of Net Revenues*	*RMB*	*% of Net Revenues*	*RMB*	*US$*	*% of Net Revenues*
	(in thousands, except percentages)						
Operating expenses:							
Sales and marketing expenses[(1)]	235,012	4.9	255,400	4.1	311,917	45,224	4.4
Research and development expenses[(1)]	112,891	2.3	188,489	3.1	306,842	44,488	4.3
General and administrative expenses[(1)]	535,111	11.1	842,354	13.6	642,945	93,218	9.1
Allowance for doubtful debt	2,393	0.1	18,399	0.3	35,409	5,134	0.5
Impairment of loan receivable to potential investee	–	–	2,807	0.0	–	–	–
Impairment of long-lived assets	81,619	1.7	109,267	1.8	–	–	–
Other operating income	(7,619)	(0.2)	–	–	(60,013)	(8,701)	(0.8)
Total Operating Expenses[(1)]	959,407	19.9	1,416,716	22.9	1,237,100	179,363	17.5

Note:

(1) Includes share-based compensation expense as follows:

	For the Years Ended December 31,			
	2020	2021	2022	
	RMB	*RMB*	*RMB*	*US$*
		(in thousands)		
Allocation of share-based compensation expenses:				
Sales and marketing expenses	38,247	2,545	17,794	2,580
Research and development expenses	634	10,805	14,305	2,074
General and administrative expenses	82,672	292,947	85,508	12,397
Total share-based compensation expenses	121,553	306,297	117,607	17,051

Sales and Marketing Expenses

Our sales and marketing expenses primarily consist of compensation and benefit expenses for our sales and marketing staff, including share-based compensation expenses, as well as advertisement and agency service fees. Our sales and marketing expenses also include office-related expenses and business development expenses associated with our sales and marketing activities. To a lesser extent, our sales and marketing expenses include depreciation of equipment used associated with our selling and marketing activities.

Research and Development Expenses

Our research and development expenses primarily include salaries, employee benefits, share-based compensation expenses and other expenses incurred in connection with our technological innovations, such as our proprietary smart routing technology and cloud computing infrastructure service technologies. We anticipate that our research and development expenses will continue to increase as we devote more resources to develop and improve technologies, improve operating efficiencies and enhance our service offerings.

General and Administrative Expenses

Our general and administrative expenses primarily consist of compensation and benefits paid to our management and administrative staff, including share-based compensation expenses, the cost of third-party professional services, and depreciation and amortization of property and equipment used in our administrative activities. Our general and administrative expenses, to a lesser extent, also include office rent, office-related expenses, and expenses associated with training and team building activities. We expect that our other general and administrative expense items, such as salaries paid to our management and administrative staff as well as professional services fees, will increase as we expand our business, both organically and as a result of acquisitions.

Share-Based Compensation Expenses

We recorded share-based compensation expenses in connection with share options and RSUs granted under our 2010 Plan, 2014 Plan and 2020 Plan. As of February 28, 2023, options to purchase 421,452 ordinary shares and 1,206,489 RSUs that have been granted to our employees, directors and consultants were outstanding and not vested yet. We recorded share-based compensation expenses in the amount of RMB121.6 million, RMB306.3 million and RMB117.6 million (US$17.1 million) for the years ended December 31, 2020, 2021 and 2022, respectively, in connection with our share-based incentive grants.

Taxation

The Cayman Islands

The Cayman Islands currently does not levy taxes on individuals or corporations based upon profits, income, gains or appreciation and there is no taxation in the nature of inheritance tax or estate duty. There are no other taxes likely to be material to our company levied by the government of the Cayman Islands, except for stamp duties that may be applicable on instruments executed in, or after execution brought within the jurisdiction of, the Cayman Islands. The Cayman Islands is not a party to any double taxation treaties that are applicable to any payments made to or by our company. There are no exchange control regulations or currency restrictions in the Cayman Islands. Additionally, upon payments of dividends by our company to the shareholders, no Cayman Islands withholding tax will be imposed.

The British Virgin Islands

The Company and all dividends, interest, rents, royalties, compensation and other amounts paid by the Company to persons who are not resident in the BVI and any capital gains realized with respect to any shares, debt obligations, or other securities of the Company by persons who are not resident in the BVI are exempt from all provisions of the Income Tax Ordinance in the BVI.

No estate, inheritance, succession or gift tax, rate, duty, levy or other charge is payable by persons who are not resident in the BVI with respect to any shares, debt obligation or other securities of the Company.

All instruments relating to transfers of property to or by the Company and all instruments relating to transactions in respect of the shares, debt obligations or other securities of the Company and all instruments relating to other transactions relating to the business of the Company are exempt from payment of stamp duty in the BVI. This assumes that the Company does not hold an interest in real estate in the BVI.

There are currently no withholding taxes or exchange control regulations in the BVI applicable to the Company or its members.

Hong Kong

Subsidiaries in Hong Kong are subject to Hong Kong profits tax rate of 16.5% for the years ended December 31, 2020, 2021 and 2022. A two-tiered profits tax rates regime was introduced in 2018 under which the first HK$2.0 million of assessable profits earned by an eligible company will be taxed at 8.25% and the remaining profits will continue to be taxed at 16.5%. There is an anti-fragmentation measure where each group will have to nominate only one company in the group to benefit from the progressive rates. Additionally, upon payments of dividends by the Company to its shareholders, no HK withholding tax will be imposed.

Taiwan

DYX Taiwan branch is incorporated in Taiwan and is subject to Taiwan profits tax rate of 20% for each of the years ended December 31, 2020, 2021 and 2022.

The PRC

The Company's PRC subsidiaries are incorporated in the PRC and subject to the statutory rate of 25% on the taxable income in accordance with the Enterprise Income Tax Law, or the EIT Law, which was effective on January 1, 2008 and amended on December 29, 2018, except for certain entities eligible for preferential tax rates.

Dividends, interests, rent or royalties payable by the Company's PRC subsidiaries to any non-PRC resident enterprise and proceeds from any such non-PRC resident enterprise investor's disposition of assets (after deducting the net value of such assets) are subject to a 10% withholding tax, unless the corresponding non-PRC resident enterprise's jurisdiction of incorporation has a tax treaty or arrangement with China that provides a reduced withholding tax rate or an exemption from withholding tax.

VNET Beijing was qualified as a High and New Technology Enterprise, or HNTE, since 2008 and is eligible for a 15% preferential tax rate. In October 2014, VNET Beijing obtained a new certificate and renewed the certificate in October 2017 and 2020, with a validity term of three years. In accordance with the PRC Income Tax Law, an enterprise awarded with the HNTE certificate may enjoy a reduced EIT rate of 15%. For the years ended December 31, 2020, 2021 and 2022, the tax rate for VNET Beijing was 15%, 15% and 15%, respectively.

In April 2011, Xi'an Sub, a subsidiary of VNET Beijing located in Shaanxi Province, was qualified for a preferential tax rate of 15% and started to apply this rate from then on. The preferential tax rate is awarded to companies that are located in West Regions of China which operate in certain encouraged industries. For the years ended December 31, 2020, 2021 and 2022, the tax rate assessed for Xi'an Sub was 15%, 15% and 15%, respectively.

In October 2015, SH Blue Cloud, a subsidiary located in Shanghai, was qualified for a HNTE and became eligible for a 15% preferential tax rate. The HNTE certificate has been renewed in November 2018 and November 2021 with a validity term of three years. For the years ended December 31, 2020, 2021 and 2022, SH Blue Cloud enjoyed a preferential tax rate of 15%.

In November 2016, SZ DYX, a subsidiary located in Guangdong Province, was qualified for a HNTE and became eligible for a 15% preferential tax rate effective for three consecutive years. The HNTE certificate has been renewed in November 2019 and December 2022 with a validity term of three years. For the years ended December 31, 2020, 2021 and 2022, SZ DYX enjoyed a preferential tax rate of 15%.

In December 2016, BJ TenxCloud, a subsidiary located in Beijing and the Company acquired in July 2021, was qualified for a HNTE and became eligible for 15% preferential tax rate effective for three consecutive years and the certificate was reapplied in December 2019 and December 2022 with a validity term of three years. Accordingly, for the years ended December 31, 2020, 2021 and 2022, BJ TenxCloud enjoyed a preferential tax rate of 15%.

The EIT Law also provides that enterprises established under the laws of foreign countries or regions and whose "place of effective management" is located within the PRC are considered PRC tax resident enterprises and subject to PRC income tax at the rate of 25% on worldwide income. The definition of "place of effective management" refers to an establishment that exercises, in substance, overall management and control over the production and business, personnel, accounting, properties, etc. of an enterprise. As of December 31, 2022, the administrative practice associated with interpreting and applying the concept of "place of effective management" is unclear. If the Company is deemed as a PRC tax resident, it will be subject to PRC income tax at the rate of 25% on its worldwide income under the EIT Law, meanwhile the dividends it receives from another PRC tax resident company will be exempted from 25% PRC income tax. The Company will continue to monitor changes in the interpretation or guidance of this law.

PRC VAT. In November 2011, the Ministry of Finance and the State Administration of Taxation jointly issued two circulars setting out the details of the pilot value-added tax, or VAT, reform program, which changed the charge of sales tax from business tax to VAT for certain pilot industries. The pilot VAT reform program initially applied only to the pilot industries in Shanghai, and was expanded to eight additional regions, including, among others, Beijing and Guangdong province, in 2012. In August 2013, the program was further expanded nationwide. In May 2016, the program was expanded to cover additional industry sectors such as construction, real estate, finance and consumer services. In November 2017, PRC State Counsel issued State Counsel Order 691 to abolish business tax, and issued the amendment to Interim Regulations of PRC Value Added Taxes, or the VAT Regulation, pursuant to which enterprises and individuals that (i) sell goods or labor services of processing, repair or replacement of goods, (ii) sell services, intangible assets, or immovables, or (iii) import goods within the territory of the PRC are subject to VAT.

Effective from September 2012, all services provided by VNET China and certain services provided by VNET Technology and VNET Beijing were subject to a VAT of 6%.

On March 20, 2019, the Ministry of Finance, the State Administration of Taxation and the General Administration of Customs jointly issued the Notice of Strengthening Reform of VAT Policies, or the Announcement No. 39. Pursuant to the Announcement No. 39, the generally applicable VAT rates are simplified to 13%, 9%, 6%, and nil, which became effective on April 1, 2019. In addition, a general VAT taxpayer is allowed to offset its qualified input VAT paid on taxable purchases against the output VAT chargeable on the telecommunication services and modern services provided by it.

Recently Issued Accounting Pronouncements

A list of recently issued accounting pronouncements that are relevant to us is included in Note 2 to our consolidated financial statements for the year ended December 31, 2022 included elsewhere in this annual report.

Inflation

In the last three years, inflation in China has not materially impacted our results of operations. According to the National Bureau of Statistics of China, the annual average percent changes in the consumer price index in China for 2020, 2021 and 2022 were 2.5%, 0.9% and 2.0%, respectively. Although we have not been materially affected by inflation in the past, we cannot assure you that we will not be affected in the future by higher rates of inflation in China.

Results of Operations

The following table sets forth our consolidated results of operations for the periods indicated both in absolute amount and as a percentage of our total net revenues. This information should be read together with our consolidated financial statements and related notes included elsewhere in this annual report. The results of operations in any period are not necessarily indicative of the results you may expect for future periods.

	For the Years Ended December 31,						
	2020		2021		2022		
	RMB	*%*	*RMB*	*%*	*RMB*	*US$*	*%*
Consolidated Statements of Operations Data:							
Net revenues	4,829,019	100.0	6,189,801	100.0	7,065,232	1,024,362	100.0
Cost of revenues	(3,753,008)	(77.7)	(4,751,771)	(76.8)	(5,706,976)	(827,434)	(80.8)
Gross profit	1,076,011	22.3	1,438,030	23.2	1,358,256	196,928	19.2
Operating (expenses) income:							
Sales and marketing expenses	(235,012)	(4.9)	(255,400)	(4.1)	(311,917)	(45,224)	(4.4)
Research and development expenses	(112,891)	(2.3)	(188,489)	(3.1)	(306,842)	(44,488)	(4.3)
General and administrative expenses	(535,111)	(11.1)	(842,354)	(13.6)	(642,945)	(93,218)	(9.1)
Allowance for doubtful debt	(2,393)	(0.1)	(18,399)	(0.3)	(35,409)	(5,134)	(0.5)
Impairment of long-lived assets	(81,619)	(1.7)	(109,267)	(1.8)	–	–	–
Impairment of loan receivable to potential investee	–	–	(2,807)	(0.0)	–	–	–
Other operating income	7,619	0.2	–	–	60,013	8,701	0.8
Total operating expenses	(959,407)	(19.9)	(1,416,716)	(22.9)	(1,237,100)	(179,363)	(17.5)
Operating profit	116,604	2.4	21,314	0.3	121,156	17,565	1.7
Interest income	31,711	0.7	31,897	0.5	31,574	4,578	0.4
Interest expense	(380,609)	(7.9)	(334,950)	(5.4)	(273,305)	(39,626)	(3.9)
Impairment of long-term investment	(13,030)	(0.3)	(3,495)	(0.1)	–	–	–
Other income	16,539	0.3	33,923	0.5	17,328	2,512	0.2
Other expenses	(36,912)	(0.8)	(22,700)	(0.4)	(26,599)	(3,856)	(0.4)
Changes in the fair value of convertible promissory notes	(2,544,220)	(52.7)	829,149	13.4	22,626	3,280	0.3
Foreign exchange gain (loss), net	228,125	4.7	110,036	1.8	(523,235)	(75,862)	(7.4)
(Loss) income before income taxes and gain (loss) from equity method investments	(2,581,792)	(53.6)	665,174	10.7	(630,455)	(91,409)	(9.1)
Income tax expense	(109,336)	(2.3)	(111,407)	(1.8)	(133,464)	(19,350)	(1.9)
Gain (loss) from equity method investments	10,869	0.2	(38,666)	(0.6)	1,925	279	0.0
Consolidated net (loss) income	(2,680,259)	(55.7)	515,101	8.3	(761,994)	(110,480)	(11.0)
Comprehensive income attributable to non-controlling interest	(29,088)	(0.6)	(15,003)	(0.2)	(13,958)	(2,024)	(0.2)
Deemed dividend	(470,643)	(9.7)	–	–	–	–	–
Dividend distribution	–	–	(28,909)	(0.5)	–	–	–
Others	–	–	(826,458)	(13.4)	–	–	–
Net loss attributable to the Company's ordinary shareholders	(3,179,990)	(66.0)	(355,269)	(5.7)	(775,952)	(112,504)	(11.2)

Year Ended December 31, 2022 Compared to Year Ended December 31, 2021

Net Revenues

Our net revenues increased by 14.1% from RMB6,189.8 million in 2021 to RMB7,065.2 million (US$1,024.4 million) in 2022, primarily due to (i) the increases in the total number of billable cabinets and the amount of average monthly recurring revenue per cabinet under our management, which were attributable to growing customer demand, and (ii) the increased demand for our cloud and VPN services. The number of cabinets under our management increased by 11.2% from 78,540 as of December 31, 2021 to 87,322 as of December 31, 2022.

Cost of Revenues

Our cost of revenues increased by 20.1% from RMB4,751.8 million in 2021 to RMB5,707.0 million (US$827.4 million) in 2022, primarily due to (i) increases in our telecommunication, utility and depreciation costs attributable to the delivery of additional cabinets and (ii) increased customer demand for our cloud and VPN services.

Gross Profit

As a result of the foregoing, our gross profit decreased by 5.5% from RMB1,438.0 million in 2021 to RMB1,358.3 million (US$196.9 million) in 2022. Our gross margin decreased from 23.2% in 2021 to 19.2% in 2022, primarily due to the delivery of additional data centers with lower utilization and incur depreciation costs during the ramp-up period and an increase in our power costs as a result of the increased electricity price in China.

Operating Expenses

Our operating expenses decreased by 12.7% from RMB1,416.7 million in 2021 to RMB1,237.1 million (US$179.4 million) in 2022. Our operating expenses as a percentage of net revenues decreased from 22.9% in 2021 to 17.5% in 2022.

Sales and Marketing Expenses. Our sales and marketing expenses increased by 22.1% from RMB255.4 million in 2021 to RMB311.9 million (US$45.2 million) in 2022, primarily due to the expansion of our business. As a percentage of net revenues, our sales and marketing expenses increased from 4.1% in 2021 to 4.4% in 2022.

Research and Development Expenses. Our research and development expenses increased by 62.8% from RMB188.5 million in 2021 to RMB306.8 million (US$44.5 million) in 2022, primarily due to our increased investments to strengthen our research and development capabilities. As a percentage of net revenues, our research and development expenses were 3.1% and 4.3% in 2021 and 2022.

General and Administrative Expenses. Our general and administrative expenses decreased by 23.7% from RMB842.4 million in 2021 to RMB642.9 million (US$93.2 million) in 2022, primarily due to a decrease in our share-based compensation expenses. As a percentage of net revenues, our general and administrative expenses decreased from 13.6% in 2021 to 9.1% in 2022.

Allowance for doubtful debt. Our allowance for doubtful debt increased from RMB18.4 million in 2021 to RMB35.4 million (US$5.1 million) in 2022.

Interest Income

Our interest income remained stable at RMB31.6 million (US$4.6 million) in 2022, compared to RMB31.9 million in 2021.

Interest Expense

Our interest expense decreased by 18.4% from RMB335.0 million in 2021 to RMB273.3 million (US$39.6 million) in 2022, primarily due to repayment of the 2021 Notes (as defined below) that matured in October 2021. No interest expense was incurred for the 2021 Notes in 2022.

Other Income

Our other income decreased by 48.9% from RMB33.9 million in 2021 to RMB17.3 million (US$2.5 million) in 2022. Other income comprises miscellaneous non-operating income that we generate.

Other Expenses

Our other expenses increased from RMB22.7 million in 2021 to RMB26.6 million (US$3.9 million) in 2022, primarily due to the combined effects of an increase in allowance for other receivables and a decrease in loss of disposal of certain of our equipment.

Changes in the Fair Value of Convertible Promissory Notes

Changes in the fair value of convertible promissory notes were RMB22.6 million (US$3.3 million) in 2022, which represent unrealized gains on the fair value of the 2025 Convertible Notes (as defined below) caused by changes in the market price of our ADSs.

Foreign Exchange Loss

We had a foreign exchange loss of RMB523.2 million (US$75.9 million) in 2022, which represents unrealized net loss caused by the appreciation of the U.S. dollar against the Renminbi.

Income Tax Expenses

We recorded income tax expenses in the amount of RMB133.5 million (US$19.4 million) in 2022, compared with income tax expenses of RMB111.4 million in 2021, with the effective tax rate (21.2%). This is primarily due to:

- Change in valuation allowance leads to an increase in the income tax expense in the amount of RMB135.7 million (US$19.7 million) in 2022;
- Loss incurred outside China increases the income tax benefit by RMB75.1 million (US$10.9 million) in 2022; and
- Non-deductible expenses lead to an increase in the income tax expense in the amount of RMB72.2 million (US$10.5 million) in 2022.

Net Profit or Loss

As a result of the foregoing, we recorded a net loss of RMB762.0 million (US$110.5 million) in 2022, as compared to a net profit of RMB515.1 million in 2021.

Year Ended December 31, 2021 Compared to Year Ended December 31, 2020

Net Revenues

Our net revenues increased by 28.2% from RMB4,829.0 million in 2020 to RMB6,189.8 million in 2021, primarily due to (i) the increases in the total number of billable cabinets and the amount of average monthly recurring revenue per cabinet under our management, which were attributable to growing customer demand, and (ii) the growth of revenue from cloud business. The number of cabinets under our management increased by 46.7% from 53,553 as of December 31, 2020 to 78,540 as of December 31, 2021.

Cost of Revenues

Our cost of revenues increased by 26.6% from RMB3,753.0 million in 2020 to RMB4,751.8 million in 2021, primarily due to (i) increases in our telecommunication, utility and depreciation costs attributable to the delivery of additional cabinets and (ii) increased customer demand for our cloud services.

Gross Profit

As a result of the foregoing, our gross profit increased by 33.6% from RMB1,076.0 million in 2020 to RMB1,438.0 million in 2021. Our gross margin increased from 22.3% in 2020 to 23.2% in 2021, primarily due to the increased utilization rate of cabinets delivered in prior years.

Operating Expenses

Our operating expenses increased by 47.7% from RMB959.4 million in 2020 to RMB1,416.7 million in 2021. Our operating expenses as a percentage of net revenues increased from 19.9% in 2020 to 22.9% in 2021 primarily due to an increase in our share-based compensation expenses.

Sales and Marketing Expenses. Our sales and marketing expenses increased by 8.7% from RMB235.0 million in 2020 to RMB255.4 million in 2021, primarily due to the continuous expansion of our business. As a percentage of net revenues, our sales and marketing expenses decreased from 4.9% in 2020 to 4.1% in 2021.

Research and Development Expenses. Our research and development expenses increased by 67.0% from RMB112.9 million in 2020 to RMB188.5 million in 2021, primarily due to our increased investments to strengthen our research and development capabilities. As a percentage of net revenues, our research and development expenses were 2.3% and 3.1% in 2020 and 2021, respectively.

General and Administrative Expenses. Our general and administrative expenses increased by 57.4% from RMB535.1 million in 2020 to RMB842.4 million in 2021, primarily due to our one-off share-based compensation expenses. As a percentage of net revenues, our general and administrative expenses increased from 11.1% in 2020 to 13.6% in 2021.

Allowance for doubtful debt. Our allowance for doubtful debt increased from RMB2.4 million in 2020 to RMB18.4 million in 2021.

Impairment of loan receivable to potential investee. We recorded a loss of RMB2.8 million in 2021.

Impairment of long-lived assets. Our impairment of long-lived assets increased by 33.9% from RMB81.6 million in 2020 to RMB109.3 million in 2021.

Interest Income

Our interest income remained stable at RMB31.9 million in 2021, as compared to RMB31.7 million in 2020.

Interest Expense

Our interest expense decreased by 12.0% from RMB380.6 million in 2020 to RMB335.0 million in 2021, primarily due to the repayment of 2021 Notes (as defined below) matured in October 2021.

Other Income

Our other income increased substantially from RMB16.5 million in 2020 to RMB33.9 million in 2021. Other income comprises miscellaneous non-operating income that we generate. Such increase was primarily due to the gains from disposal of subsidiaries.

Other Expenses

Our other expenses decreased by 38.5% from RMB36.9 million in 2020 to RMB22.7 million in 2021. Other expenses comprise miscellaneous non-operating expenses that we incur.

Changes in the Fair Value of Convertible Promissory Notes

Changes in the fair value of convertible promissory notes were RMB829.1 billion in 2021, which represent unrealized gains on the fair value of our convertible promissory notes issued by us in February to April 2020 caused by changes in the market price of our ADSs.

Foreign Exchange Gain

We had a foreign exchange gain of RMB110.0 million in 2021, which represents unrealized net gains caused by the depreciation of the U.S. dollar against the Renminbi.

Income Tax Expenses

We recorded income tax expenses in the amount of RMB111.4 million in 2021, compared with income tax expenses of RMB109.3 million in 2020, with the effective tax rate 17.8%. This is primarily due to:

- Profit generated outside China reduces the income tax expenses by RMB120.7 million in 2021;
- Changes in valuation allowance leads to an increase in the income tax expenses in the amount of RMB79.7 million in 2021; and
- Current and deferred tax rate differences lead to a decrease in the income tax expenses in the amount of RMB26.1 million in 2021.

Net Profit or Loss

As a result of the foregoing, we recorded a net profit of RMB515.1 million in 2021, as compared to a net loss of RMB2,680.3 million in 2020.

B. Liquidity and Capital Resources

Cash Flows and Working Capital

The accompanying consolidated financial statements have been prepared assuming that we will continue as a going concern, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. We have experienced recurring losses from operations. As of December 31, 2022, we had an accumulated deficit of US$1,213.5 million. For the year ended December 31, 2022, the net cash we generated from operating activities amounted to US$353.8 million. Our ability to continue as a going concern is dependent on our ability to generate cash flows from operations, and our ability to arrange adequate financing arrangements. These above factors raise doubt about our ability to continue as a going concern.

As of December 31, 2021, we had RMB1,372.5 million in cash and cash equivalents and RMB336.0 million in restricted cash (current and non-current portion). As of December 31, 2022, we had RMB2,661.3 million (US$385.9 million) in cash and cash equivalents and RMB328.2 million (US$47.5 million) in restricted cash (current and non-current portion).

As of December 31, 2021, we had long-term borrowings (current portion) from various commercial banks with an aggregate outstanding balance of RMB384.2 million, and long-term borrowings (excluding current portion) from various commercial banks with an aggregate outstanding balance of RMB2,215.0 million. As of December 31, 2022, we had long-term borrowings (current portion) from various commercial banks with an aggregate outstanding balance of RMB484.0 million (US$70.2 million), and long-term borrowings (excluding current portion) from various commercial banks with an aggregate outstanding balance of RMB3,049.9 million (US$442.2 million). We have entered into long-term borrowing arrangements since 2013 with maturity terms of three to fifteen years. The long-term borrowings (including current and non-current portions) outstanding as of December 31, 2020, 2021 and 2022 bore weighted-average interest rates of 5.61%, 5.31% and 5.11% per annum, respectively.

We had unused credit lines in an aggregate amount of RMB3,164.4 million (US$458.8 million) as of December 31, 2022 under credit agreements with 14 banks. As of the same date, we used RMB3,401.6 million (US$493.2 million) of the credit lines under the credit agreements with 11 banks, pursuant to which we were granted credit lines in an aggregate amount of RMB6,566.0 million (US$952.0 million). There are no material covenants that restrict our ability to undertake additional financing associated with the used credit lines. No terms and conditions of the unused credit lines are available yet because utilization of such unused portion requires approval by the banks and separate loan agreements setting forth detailed terms and conditions will only be entered into with the banks upon utilization. We believe the working capital as of December 31, 2022 is sufficient for our present requirements.

As of December 31, 2022, we had total outstanding debts (consisting of borrowings) of RMB3,533.9 million (US$512.4 million), all of which were onshore debt obligations. We believe we have sufficient financial resources to meet both of our onshore and offshore debt obligations when due. The growth of our business relies on the construction of new data centers. We also intend to acquire or invest in companies whose businesses are complementary to ours. We intend to use the proceeds of our outstanding debt mainly to construct new data centers and fund our acquisitions. As of December 31, 2022, we had purchase commitments made for acquisitions of machinery, equipment, construction in progress, bandwidth and cabinet capacity of RMB2,691.1 million (US$390.2 million) becoming due within twelve months, and we intend to use a portion of the proceeds to fund these purchase commitments. Except as disclosed in this annual report, we have no outstanding bank loans or financial guarantees or similar commitments to guarantee the payment obligations of third parties. We believe that our current cash, cash equivalents and time deposits, our cash flow from operations and proceeds from our financing activities will be sufficient to meet our anticipated cash needs, including our cash needs for working capital and capital expenditures, for the next 12 months. If we have additional liquidity needs in the future, we may conduct additional financing, including equity offering and debt financing in private or public capital markets and control of operating expenses and capital expenditure where necessary, to meet such needs.

As of December 31, 2022, the total amount of cash and cash equivalents, restricted cash and short-term investments was RMB2,989.5 million (US$433.4 million), of which RMB1,745.7 million (US$253.1 million), RMB758.3 million (US$109.9 million) and RMB485.5 million (US$70.4 million) was held by our consolidated affiliated entities, PRC subsidiaries and offshore subsidiaries, respectively. Cash transfers from our PRC subsidiaries to our subsidiaries outside of China are subject to PRC government control of currency conversion. Restrictions on the availability of foreign currency may affect the ability of our PRC subsidiaries and consolidated affiliated entities to remit sufficient foreign currency to pay dividends or other payments to us, or otherwise satisfy their foreign currency denominated obligations. See "Governmental control of currency conversion may limit our ability to receive and utilize our revenues effectively." The major cost that would be incurred to distribute dividends is the withholding tax imposed on the dividends distributed by our PRC operating subsidiaries at the rate of 10% or a lower rate under an applicable tax treaty, if any.

Preferred Shares and Notes

Series A Perpetual Convertible Preferred Shares

We issued an aggregate of 150,000 Series A perpetual convertible preferred shares to Vector Holdco Pte. Ltd., BTO Vector Fund ESC (CYM) L.P. and BTO Vector Fund FD (CYM) L.P., collectively referred to as "Affiliates of Vector", pursuant to an investment agreement dated June 22, 2020 among us, Affiliates of Vector and Blackstone Tactical Opportunities Fund – FD (Cayman) – NQ L.P. Dividends on each Series A perpetual convertible preferred share will accrue at 4.5% per annum from the issuance date until the date immediately prior to the conversion date. At any time after the issuance date, Series A convertible preferred shares are convertible into Class A ordinary shares or ADSs at the holder's option, the number of which will be determined based on a conversion price which is initially US$2.8333 per Class A ordinary shares or US$17.00 per ADS, subject to certain adjustments therein. On March 1, 2021, Affiliates of Vector converted all of their 150,000 Series A perpetual convertible preferred shares into 54,507,816 Class A Ordinary Shares.

2020 Notes and 2021 Notes

In August 2017, we issued USD-denominated notes due 2020 in an aggregate principal amount of US$200.0 million at a coupon rate of 7.000% per annum and in September 2017, we issued USD-denominated notes due 2020 in an aggregate principal amount of US$100.0 million at a coupon rate of 7.000% per annum, collectively referred to as the "2020 Notes." The notes issued in September 2017 were priced at a slight premium of 100.04, with an effective yield of 6.98%. The notes issued in September 2017 constituted a further issuance of, and were consolidated to form a single series with, the notes issued in August 2017. Interest on the 2020 Notes is payable semi-annually in arrears on, or nearest to, August 17 and February 17 in each year, beginning on February 17, 2018.

In April 2019, we issued USD-denominated notes due 2021 in an aggregate principal amount of US$300.0 million at an interest rate of 7.875% per annum, or the 2021 Notes, and used a portion of the proceeds to purchase, pursuant to a tender offer, US$150,839,000 in principal amount of the 2020 Notes, representing 50.3% of the outstanding principal amount of the 2020 Notes. On August 12, 2019, we repurchased US$18,000,000 in principal amount of 2020 Notes at the par value. As of September 30, 2020, the outstanding principal amount of the 2020 Notes was nil. Interest on the 2021 Notes is payable semi- annually in arrears on April 15 and October 15 in each year, beginning on October 15, 2019.

Both the 2020 Notes and 2021 Notes have (i) a restrictive covenant that restricts our ability in consolidation, merger and sale of assets to a certain extent; (ii) a negative pledge covenant that restricts our ability to create security upon our undertaking, assets or revenues to secure bonds, notes, debentures or other securities that are quoted, listed or dealt in or traded on securities market; (iii) a dividend payment restriction covenant; and (iv) a covenant relating to the ratio of our Adjusted EBITDA to our Consolidated Interest Expense (interest expense paid net of interest income received). Such covenants may limit our ability to undertake additional debt financing, but not equity financing.

2025 Convertible Notes

From February to June 2020, we entered into convertible promissory note purchase agreements with a group of investors led by Goldman Sachs Asia Strategic Pte. Ltd. in an aggregate principal amount of US$200,000,000 through a private placement to the investors, collectively referred to as the "2025 Convertible Notes."

The 2025 Convertible Notes will mature in five years, bearing interest at the rate of 2% per annum from the issuance date which shall be payable semiannually in arrears in cash. At any time after the issuance, each note is convertible into our Class A Ordinary Shares at the holder's option at a conversion price of US$2 per share, or US$12 per ADS, subject to customary anti-dilution adjustments. Unless previously redeemed or converted, we shall redeem the note on the maturity date at 115% of the then outstanding principal amount plus all accrued but unpaid interest. In addition, if any portion of the outstanding principal amount of the notes has not been converted into our shares by the third anniversary of the note issuance date, the holders have the right to require us to redeem, in whole or in part, the outstanding principal amount of the note at 109% of the principal amount plus all accrued but unpaid interest.

We issued convertible promissory notes to Goldman Sachs Asia Strategic Pte. Ltd., StoneBridge 2020, L.P. and StoneBridge 2020 Offshore Holdings II, L.P. in an aggregate principal amount of US$75,000,000 pursuant to a convertible note purchase agreement dated February 19, 2020 between us and Goldman Sachs Asia Strategic Pte. Ltd. In January 2021, Goldman Sachs Asia Strategic Pte. Ltd. converted the principal amount of its convertible note of US$36,000,000 into 18,000,000 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. As of the date of this annual report, US$36,000,000 have been converted into Class A ordinary shares and US$39,000,000 remains outstanding.

We issued convertible promissory notes to Hina Group Fund II, L.P. and Hina Group Fund VI, L.P. in an aggregate principal amount of US$17,000,000 pursuant to a convertible note purchase agreement dated March 16, 2020 among us, Hina Group Fund II, L.P. and Hina Group Fund VI, L.P. In December 2020, Hina Group Fund VI, L.P. partially converted the principal amount of its convertible note of US$1,705,002.63 into 856,326 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. From March to April 2021, Hina Group Fund II, L.P. and Hina Group Fund VI, L.P. converted an aggregate principal amount of their convertible note of US$15,294,997.37 into 7,654,854 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. As of the date of this annual report, US$17,000,000 have been converted into Class A ordinary shares.

We issued convertible promissory notes to UBS SDIC Fund Management Co., Ltd., in an aggregate principal amount of US$58,000,000 pursuant to a convertible note purchase agreement dated April 27, 2020 and a convertible note purchase agreement dated June 5, 2020, between us and UBS SDIC Fund Management Co., Ltd. In December 2020, UBS SDIC Fund Management Co., Ltd. partially converted the principal amount of its convertible note of US$20,666,667.01 into 10,353,816 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. In January 2021, UBS SDIC Fund Management Co., Ltd. partially converted the principal amount of its convertible note of US$16,666,662.52 into 8,364,762 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. In February 2021, UBS SDIC Fund Management Co., Ltd. partially converted the principal amount of its convertible note of US$16,666,671.40 into 8,381,394 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. As of the date of this annual report, US$54,000,000.93 have been converted into Class A ordinary shares and US$3,999,999.07 remains outstanding.

We issued a convertible promissory note to Asialeads Capital (Cayman) Limited in an aggregate principal amount of US$50,000,000 pursuant to a convertible note purchase agreement dated February 24, 2020 between us and Asialeads Capital (Cayman) Limited. In August 2020, Asialeads Capital (Cayman) Limited partially converted the principal amount of its convertible note of US$25,000,000 into 12,499,998 Class A Ordinary Shares at the conversion price of US$2 per share, or US$12 per ADS. As of the date of this annual report, US$25,000,000 have been converted into Class A ordinary shares and US$25,000,000 remains outstanding.

In March and April 2023, the Company received notices from certain holders of the 2025 Convertible Notes, requiring us to redeem the 2025 Convertible Notes at 109% of the principal amount of US$64.0 million plus all accrued but unpaid interest. Pursuant to the terms under the 2025 Convertible Notes, the Company must pay the redemption price to such certain holders within three months after the redemption notices were delivered.

2026 Convertible Notes

In January 2021, we issued USD-denominated convertible senior notes due 2026 in an aggregate principal amount of US$600.0 million at a zero-coupon rate, or the 2026 Convertible Notes. The 2026 Convertible Notes will mature on February 1, 2026, unless earlier repurchased, redeemed or converted in accordance with their terms prior to such date. The 2026 Convertible Notes are general and unsecured obligations of the Company. The 2026 Convertible Notes may be convertible into cash, the Company's ADSs, or a combination of cash and ADSs, at the Company's election. The conversion rate of the 2026 Convertible Notes is initially 18.3574 ADSs per US$1,000 principal amount of the 2026 Convertible Notes, subject to the adjustment upon the occurrence of certain events under the terms of the 2026 Convertible Notes. The Company may not redeem the 2026 Convertible Notes prior to February 6, 2024, unless certain changes in tax law or related events occur. The Company may redeem the 2026 Convertible Notes at its option on or after February 6, 2024 and on or prior to the 40th scheduled trading day immediately before the maturity date, subject to certain requirements, at a redemption price equal to 100% of the principal amount of the Notes to be redeemed, plus accrued and unpaid special interest, if any, to, but not including, the optional redemption date. Moreover, holders of the 2026 Convertible Notes have the right to require the Company to repurchase for cash all of their 2026 Convertible Notes, or any portion of the principal thereof, on February 1, 2024 or in the event of certain fundamental changes, subject to certain conditions, at a repurchase price or a fundamental change repurchase price, as the case may be, equal to 100% of the principal amount of the 2026 Convertible Notes to be repurchased, plus accrued and unpaid special interest, if any, to, but not including, the repurchase date or the fundamental change repurchase date, as the case may be.

2027 Convertible Notes

In January 2022, we issued USD-denominated convertible notes due 2027 in an aggregate principal amount of US$250.0 million at an interest rate of 2% per annum, or the 2027 Convertible Notes, pursuant to an investment agreement with the funds managed by Blackstone Tactical Opportunities (NYSE: BX), or Blackstone, the world's largest alternative investment firm. The 2027 Convertible Notes will be convertible, at any time on and after the original issuance date, at the option of holders, into Class A ordinary shares of the Company at a conversion price of US$1.8333 per Class A ordinary share, or into ADSs at a conversion price of US$11.00 per ADS. The conversion prices are subject to adjustment under the terms of the 2027 Convertible Notes. The Company may effect a mandatory conversion at its election, if its ADSs achieve a price threshold of 200% of the conversion price for a specified period. Such 2027 Convertible Notes will bear an interest rate of 2.0% per annum and rank senior to any of the Company's other indebtedness that is expressly subordinated in right of payment to the 2027 Convertible Notes. Unless the 2027 Convertible Notes have been duly redeemed or converted into Class A ordinary shares of the Company in full prior to the maturity date of the 2027 Convertible Notes, certain number of Series A-1 perpetual convertible preferred shares of the Company with a par value US$0.00001 per share will be issued as repayment of the 2027 Convertible Notes to upon maturity, pursuant to the calculation method set forth in the 2027 Convertible Notes. Moreover, subject to certain conditions, holders of the 2027 Convertible Notes have the right to require the Company to redeem, all of their 2027 Convertible Notes, or any portion of the principal thereof, during the redemption period set forth in the 2027 Convertible Notes.

Selected Condensed Consolidated Cash Flows Data

The following table sets forth a summary of our cash flows for the periods indicated:

	For the Years Ended December 31,			
	2020	**2021**	**2022**	
	RMB	*RMB*	*RMB*	*US$*
		(in thousands)		
Net cash generated from operating activities	714,243	1,387,922	2,440,214	353,797
Net cash used in investing activities	(3,889,174)	(3,772,613)	(3,559,252)	(516,043)
Net cash generated from financing activities	4,163,255	967,577	2,298,080	333,191
Effect on foreign exchange rate changes on cash and cash equivalents and restricted cash	(229,064)	9,150	101,979	14,785
Net increase/(decrease) in cash and cash equivalents and restricted cash	759,260	(1,407,964)	1,281,021	185,730
Cash and cash equivalents and restricted cash at beginning of the year	2,357,177	3,116,437	1,708,473	247,705
Cash and cash equivalents and restricted cash at end of the year	3,116,437	1,708,473	2,989,494	433,435
Cash and cash equivalents, restricted cash and short-term investments at end of the year	3,402,309	1,708,473	2,989,494	433,435

Operating Activities

Net cash generated from operating activities was RMB2,440.2 million (US$353.8 million) in 2022, primarily resulted from a net loss of RMB762.0 million (US$110.5 million), positively adjusted for certain items such as (i) depreciation and amortization of RMB1,595.9 million (US$231.4 million), (ii) foreign exchange loss of RMB523.2 million (US$75.9 million), (iii) share-based compensation expense of RMB118.2 million (US$17.1 million), (iv) the decrease in prepaid expenses and other current assets of RMB622.0 million (US$90.2 million), (v) the increase in accrued expenses and other payables of RMB226.9 million (US$32.9 million) and (vi) the increase in accounts and notes payables of RMB220.1 million (US$31.9 million), partially offset by certain item such as the increase in accounts and notes receivable of RMB381.2 million (US$55.3 million).

Net cash generated from operating activities was RMB1,387.9 million in 2021, primarily resulted from a net income of RMB515.1 million, positively adjusted for certain items such as (i) depreciation and amortization of RMB1,267.6 million, (ii) share-based compensation expenses of RMB320.0 million, (iii) the increase in accrued expenses and other payables of RMB316.0 million and (iv) the increase in accounts and notes payables of RMB195.7 million, partially offset by certain item such as the increase in accounts and notes receivable of RMB533.3 million.

Net cash generated from operating activities was RMB714.2 million in 2020, primarily resulted from a net loss of RMB2,680.3 million, positively adjusted for certain items such as (i) depreciation and amortization of RMB989.0 million, (ii) the increase in advances from customers of RMB27.1 million, and (iii) loss from equity method investments of RMB10.9 million, partially offset by certain item such as the increase in prepaid expenses and other current assets of RMB117.1 million.

Investing Activities

Net cash used in investing activities was RMB3,559.3 million (US$516.0 million) in 2022, as compared to net cash used in investing activities of RMB3,772.6 million in 2021. Net cash used in investing activities in 2022 is primarily related to our purchase of property and equipment in the amounts of RMB2,995.6 million (US$434.3 million), our payments for long-term investments in the amount of RMB213.0 million (US$30.9 million) and our payment for loan to a third party in the amount of RMB217.6 million (US$31.5 million).

Net cash used in investing activities was RMB3,772.6 million in 2021, as compared to net cash used in investing activities of RMB3,889.2 million in 2020. Net cash used in investing activities in 2021 is primarily related to our purchase of property and equipment in the amounts of RMB2,691.9 million, our prepayments and deposits for acquiring data center in the amount of RMB679.9 million, offset by proceeds received from maturity for short-term investments in the amount of RMB347.5 million.

Net cash used in investing activities was RMB3,889.2 million in 2020, as compared to net cash used in investing activities of RMB1,612.0 million in 2019. Net cash used in investing activities in 2020 is primarily related to our purchase of property and equipment in the amounts of RMB2,473.3 million, our payment for short-term investments in the amount of RMB328.2 million, offset by proceeds received from maturity for short-term investments in the amount of RMB397.6 million, proceeds from disposal of long-term investments in the amount of RMB1.9 million.

Financing Activities

Net cash generated from financing activities was RMB2,298.1 million (US$333.2 million) in 2022, as compared to net cash generated from financing activities amounting to RMB967.6 million in 2021. Net cash generated from financing activities in 2022 is primarily related to the net proceeds from the issuance of 2027 Convertible Notes of RMB1,592.6 million (US$230.9 million) and the proceeds from long-term bank borrowings of RMB1,099.9 million (US$159.5 million), partially offset by our repayment of long-term bank borrowings of RMB238.3 million (US$34.6 million) and our payment for purchase of property and equipment through finance leases of RMB231.0 million (US$33.5 million).

Net cash generated from financing activities was RMB967.6 million in 2021, as compared to net cash generated from financing activities amounting to RMB4,163.3 million in 2020. Net cash generated from financing activities in 2021 is primarily related to the net proceeds from issuance of 2026 Convertible Notes of RMB3,790.4 million and proceeds from long-term bank borrowings of RMB1,628.4 million, partially offset by payment for share repurchase and cancellation of RMB1,701.8 million and the repayment of 2021 Notes of RMB1,945.6 million.

Net cash generated from financing activities was RMB4,163.3 million in 2020, as compared to net cash used in financing activities amounting to RMB461.6 million in 2019. Net cash generated from financing activities in 2020 is primarily related to the proceeds from short-term bank borrowings of RMB34.0 million, partially offset by payment for purchase of property and equipment through finance leases of RMB376.2 million, the repayment of long-term bank borrowings of RMB33.0 million, proceeds from issuance of convertible promissory notes of RMB1,409.4 million, partially offset by payment of issuance and conversion cost of convertible promissory notes of RMB21.6 million, proceeds from Series A perpetual convertible preferred shares of RMB1,058.3 million and proceeds from issuance of ordinary shares of RMB2,680.4 million.

Material Cash Requirements

Our material cash requirements as of December 31, 2022 and any subsequent interim period primarily include our capital expenditures, long-term borrowings, convertible promissory notes, purchase commitments, operating lease obligations and finance lease minimum lease payment.

Our capital expenditures were primarily for building self-built data centers, purchasing bandwidth and cabinet capacity and purchasing network equipment, servers and other equipment. Our capital expenditures have been primarily funded by cash generated from our operations and net cash provided by financing activities. We had capital expenditures relating to the addition of property and equipment of RMB2,473.3 million, RMB2,691.9 million and RMB2,995.6 million (US$434.3 million) in 2020, 2021 and 2022, respectively, representing 51.2%, 43.5% and 42.4% of our total net revenues for the same periods, respectively. We expect our data center capacity to increase by an aggregate amount of approximately 8,000 to 9,000 cabinets during the year of 2023, through both organic growth and strategic acquisitions. We may incur additional capital expenditure for real property purchase, data center construction and network capacity expansion if our actual development is beyond our current plan.

As of December 31, 2022, our unused short-term and long-term borrowing facilities amounted to RMB3,164.4 million (US$458.8 million). We have pledged land use rights with the net book value of RMB115.9 million (US$16.8 million), property with the net book value of RMB118.1 million (US$17.1 million), leasehold improvements with the net book value of RMB92.6 million (US$13.4 million), computer and network equipment with the net book value of RMB137.9 million (US$20.0 million) and office equipment with the net book value of RMB0.9 million (US$0.1 million) for our borrowings.

Long-term borrowings (including the current portions) outstanding as of December 31, 2022 bear a weighted-average interest rate of 5.11% per annum, and are denominated in Renminbi. These loans were obtained from financial institutions located in the PRC.

Our convertible promissory notes consist primarily of (i) the 2025 Convertible Notes issued during the year ended December 31, 2020, with an aggregate principal amount of US$200.0 million at an interest rate of 2% per annum, which will mature in five years since the issuance; (ii) the 2026 Convertible Notes issued in January 2021, with an aggregate principal amount of US$600.0 million at a zero-coupon rate, which will mature on February 1, 2026; and (iii) the 2027 Convertible Notes issued in January 2022, with an aggregate principal amount of US$250.0 million at an interest rate of 2% per annum, which will mature in February 2027.

We had purchase commitments of approximately RMB1,717.9 million (US$249.1 million) related to acquisition of machinery, equipment and construction in progress as of December 31, 2022. In addition, we had outstanding purchase commitments in relation to bandwidth and cabinet capacity of RMB2,032.7 million (US$294.7 million) as of the same date.

Our operating lease obligations are primarily related to the lease of office and data center space. Our operating cash payments for operating leases was RMB477.2 million, RMB593.6 million and RMB635.6 million (US$92.2 million) for the years ended December 31, 2020, 2021 and 2022, respectively.

Our finance lease minimum lease payment is primarily related to finance leases for electronic equipment, optic fibers and property. Our financing cash payments for finance leases amounted to RMB376.2 million, RMB579.7 million and RMB231.0 million (US$33.5 million) for the years ended December 31, 2020, 2021 and 2022, respectively.

We plan to fund our existing and future material cash requirements with cash from the proceeds from our operations, bank borrowings and other appropriate financing instruments, if available.

We have not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. We do not have retained or contingent interests in assets transferred. We have not entered into contractual arrangements that support the credit, liquidity or market risk for transferred assets. We do not have obligations that arise or could arise from variable interests held in an unconsolidated entity, or obligations related to derivative instruments that are both indexed to and classified in our own equity, or not reflected in the statement of financial position.

Other than as discussed above, we did not have any significant capital and other commitments, long-term obligations or guarantees as of December 31, 2022.

Holding Company Structure

VNET Group, Inc. is a holding company with no material operations of its own. We conduct our operations primarily through our PRC subsidiaries and consolidated affiliated entities in China. As a result, although other means are available for us to obtain financing at the holding company level, VNET Group, Inc.'s ability to pay dividends and to finance any debt it may incur depends upon dividends paid by our subsidiaries. If our subsidiaries or any newly formed subsidiaries incur debt on its own behalf in the future, the instruments governing their debt may restrict its ability to pay dividends to VNET Group, Inc. In addition, our PRC subsidiaries and consolidated affiliated entities are permitted to pay dividends to us only out of their retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. Under PRC law, our PRC subsidiaries and consolidated affiliated entities are required to set aside a portion of their after-tax profits each year to fund a statutory reserve and to further set aside a portion of its after-tax profits to fund the employee welfare fund at the discretion of the board or the enterprise itself. Although the statutory reserves can be used, among other ways, to increase the registered capital and eliminate future losses in excess of retained earnings of the respective companies, the reserve funds are not distributable as cash dividends except in the event of liquidation of these subsidiaries and consolidated affiliated entities.

C. Research and Development, Patents and Licenses, etc.

Research and Development and Intellectual Property

Our strong research and development capabilities support and enhance our service offerings. We have an experienced research and development team and devote significant resources to our research and development efforts, focusing on improving customer experience, increasing operational efficiency and bringing innovative solutions to the market quickly.

We have made continual investments and trainings for research and development to drive our growth in both mature and emerging businesses. We incurred RMB112.9 million, RMB188.5 million and RMB306.8 million (US$44.5 million) in research and development expenses for the years ended December 31, 2020, 2021 and 2022, respectively. As of December 31, 2022, our experienced research and development team consisted of 175 engineers, many of whom have more than 10 years of relevant industry experience.

Our research and development efforts have yielded 134 patents, 87 patent applications and 296 software copyright registrations as of December 31, 2022, all in China and focused on the areas including (i) energy saving technology, (ii) data center design and facility maintenance and operations, (iii) network operation and maintenance management, (iv) cloud-related technologies, and (v) edge computing and blockchain.

We rely on a combination of copyright, patent, trademark, trade secret and other intellectual property laws, nondisclosure agreements and other protective measures to protect our intellectual property rights. We generally control access to and use of our proprietary software and other confidential information through the use of internal and external controls, including physical and electronic security, contractual protections, and intellectual property law. We have implemented a strict security and information technology management system, including the prohibition of copying and transferring of codes. We educate our staff on the need to, and require them to, comply with such security procedures. We also promote protection through contractual prohibitions, such as requiring our employees to enter into confidentiality and non-compete agreements.

D. Trend Information

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for the year ended December 31, 2022 that are reasonably likely to have a material adverse effect on our net revenues, income, profitability, liquidity or capital resources, or that caused the disclosed financial information to be not necessarily indicative of future results of operations or financial conditions.

E. Critical Accounting Estimates

We prepare our financial statements in conformity with U.S. GAAP, which requires us to make judgments, estimates and assumptions. We continually evaluate these estimates and assumptions based on the most recently available information, our own historical experiences and various other assumptions that we believe to be reasonable under the circumstances. In 2022, we also made such judgments, estimates and assumptions taking into consideration of the impact of the COVID-19 pandemic on our business. Since the use of estimates is an integral component of the financial reporting process, actual results could differ from our expectations as a result of changes in our estimates. Some of our accounting policies require a higher degree of judgment than others in their application and require us to make significant accounting estimates.

Goodwill

Goodwill represents the excess of the purchase price over the amounts assigned to the fair value of the assets acquired and the liabilities assumed of an acquired business. Goodwill is tested annually for impairment on a qualitative or quantitative basis for the reporting unit as of December 31, or more frequently when events or circumstances indicate an impairment may exist at the reporting unit level. When performing the annual impairment test, the Company has the option of first performing a qualitative assessment to determine the existence of events and circumstances that would lead to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. In the qualitative assessment, the Company considers primary factors such as industry and market considerations, the overall financial performance of the reporting unit, and other specific information related to the operations. If such a conclusion is reached, the Company would then be required to perform a quantitative impairment assessment of goodwill. However, if the assessment leads to a determination that it is more likely than not that the fair value of a reporting unit is greater than its carrying amount, then no further assessments are required. A quantitative assessment for the determination of impairment is made by comparing the carrying amount of the reporting unit with its fair value, which is generally calculated using the discounted cash flow method.

For the year ended December 31, 2022, we elected to bypass the qualitative assessment and proceed directly to performing the quantitative goodwill impairment testing. The fair value of a reporting unit was determined using an income approach with future cash flow estimates supported by estimated revenue growth rates, as well as the selection of an appropriate discount rate based on weighted-average cost of capital which includes company-specific risk premium. These estimates are highly subjective, and our ability to achieve the forecasted cash flow is affected by factors such as changes in our operating performance, unexpected changes in future economic and market conditions, as well as regulatory requirements. We did not record any impairment loss for the year ended December 31, 2022 as the fair value of the reporting unit is in excess of its carrying value.

F. Off-Balance Sheet Arrangements

We have not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. We have not entered into any derivative contracts that are indexed to our shares and classified as shareholder's equity, or that are not reflected in our consolidated financial statements. Furthermore, we do not have any retained or contingent interest in assets transferred to an unconsolidated entity that serves as credit, liquidity or market risk support to such entity. Moreover, we do not have any variable interest in any unconsolidated entity that provides financing, liquidity, market risk or credit support to us or engages in leasing, hedging or research and development services with us.

G. Safe Harbor

This annual report on Form 20-F contains forward-looking statements. These statements are made under the "safe harbor" provisions of Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements can be identified by terminology such as "will," "expects," "anticipates," "future," "intends," "plans," "believes," "estimates," "may," "intend," "is currently reviewing," "it is possible," "subject to" and similar statements. Some sections in this annual report on Form 20-F, as well as our strategic and operational plans, contain forward -looking statements. We may also make written or oral forward-looking statements in our reports filed with or furnished to the SEC, in our annual report to shareholders, in press releases and other written materials and in oral statements made by our officers, directors or employees to third parties. Statements that are not historical facts, including statements about our beliefs and expectations, are forward-looking statements and are subject to change, and such change may be material and may have a material adverse effect on our financial condition and results of operations for one or more prior periods. Forward -looking statements involve inherent risks and uncertainties. A number of important factors could cause actual results to differ materially from those contained, either expressly or impliedly, in any of the forward-looking statements in this annual report on Form 20-F. Potential risks and uncertainties include, but are not limited to, a further slowdown in the growth of China's economy, government measures that may adversely and materially affect our business, failure of the wealth management services industry in China to develop or mature as quickly as expected, diminution of the value of our brand or image due to our failure to satisfy customer needs and/or other reasons, our inability to successfully execute the strategy of expanding into new geographical markets in China, our failure to manage growth, and other risks outlined in our filings with the SEC. All information provided in this annual report on Form 20-F and in the exhibits is as of the date of this annual report on Form 20-F, and we do not undertake any obligation to update any such information, except as required under applicable law.

Employment Agreements

We have entered into employment agreements with each of our executive officers. Under these agreements, each of our senior executive officers is employed for a specified time period. We may terminate employment for cause, at any time, without advance notice or remuneration, for certain acts of the executive officer, such as conviction or plea of guilty to a felony or any crime involving moral turpitude, negligent or dishonest acts to our detriment, or misconduct or a failure to perform agreed duties. In such case, the executive officer will not be entitled to receive payment of any severance benefits or other amounts by reason of the termination, and the executive officer's right to all other benefits will terminate, except as required by any applicable law. We may also terminate an executive officer's employment without cause upon one-month advance written notice. In such case of termination by us, we are required to provide compensation to the executive officer, including severance pay, as expressly required by the applicable law of the jurisdiction where the executive officer is based. The executive officer may terminate the employment at any time with a one-month advance written notice, if there is any significant change in the executive officer's duties and responsibilities inconsistent in any material and adverse respect with his or her title and position or a material reduction in the executive officer's annual salary before the next annual salary review, or if otherwise approved by the board of directors.

Each executive officer has agreed to hold, both during and after the termination or expiry of his or her employment agreement, in strict confidence, and not to use, except as required in the performance of his or her duties in connection with the employment, any of our confidential information or trade secrets, any confidential information or trade secrets of our clients or prospective clients, or the confidential or proprietary information of any third party received by us and for which we have confidential obligations. The executive officers have also agreed to disclose in confidence to us all inventions, designs and trade secrets which they conceive, develop or reduce to practice and to assign all right, title and interest in them to us, and assist us in obtaining patents, copyrights and other legal rights for these inventions, designs and trade secrets.

In addition, each executive officer has agreed to be bound by non-competition and non-solicitation restrictions during the term of his or her employment and for one year following the last date of employment. Specifically, each executive officer has agreed not to (i) approach our clients, customers or contacts or other persons or entities introduced to the executive officer for the purpose of doing business with such persons or entities that will harm our business relationships with these persons or entities; (ii) assume employment with or provide services to any of our competitors, or engage, whether as principal, partner, licensor or otherwise, any of our competitors; or (iii) seek directly or indirectly, to solicit the services of any of our employees who is employed by us on or after the date of the executive officer's termination, or in the year preceding such termination.

Compensation

In 2022, the aggregate cash compensation we paid to our executive officers was approximately RMB10.9 million (US$1.6 million), which total amount included RMB0.4 million (US$0.1 million) for pension, retirement, medical insurance or other similar benefits for our executive officers. We did not provide any cash compensation to our non-executive directors in 2022. Other than the amounts stated above, no pension, retirement or similar benefits has been set aside or accrued for our executive officers or directors. None of our non-executive directors has a service contract with us that provides for benefits upon termination of employment.

In addition to the cash compensation referenced above, we also provide share-based compensation to our directors and officers. The total share-based compensation we provided to our directors and officers amounted to RMB9.5 million (US$1.4 million) in 2022. For option grants to our directors and officers, see "– Share Incentive Plans."

Share Incentive Plans

On July 16, 2010, we adopted our 2010 Plan to attract and retain the best available personnel, provide additional incentives to employees, directors and consultants and to promote the success of our business. We subsequently amended our 2010 Plan on January 14, 2011 and July 6, 2012. On May 29, 2014, we adopted our 2014 Plan on our annual general meeting, which was subsequently amended on April 1, 2015 and December 22, 2017 by unanimous written approval of our board of directors. On May 29, 2020, we adopted the 2020 Share Incentive Plan (the "**2020 Plan**"). Upon the adoption of the 2020 Plan, we will cease to grant any new awards under the 2010 Plan and the 2014 Plan (collectively the "**Existing Plans**") while the Existing Plans and outstanding awards granted thereunder shall remain effective and can be amended by the Company from time to time pursuant to the applicable terms thereunder. If any outstanding awards under the Existing Plans are subsequently forfeited, then the shares subject to such awards shall be available for the grant pursuant to the 2020 Plan. The 2020 Plan permit the grant of option, restricted share or restricted share units award. The maximum aggregate number of ordinary shares that may be issued pursuant to all awards under the 2020 Plan is 46,560,708 Class A ordinary shares. To the extent any award granted pursuant to our 2010 Plan or 2014 Plan terminates, expires, lapses or forfeited after the effective date for any reason, shares subject to such awards shall also become available to the grant of an award pursuant to the 2020 Plan. As of February 28, 2023, options to purchase 421,452 ordinary shares and 1,206,489 RSUs that have been granted to our employees, directors and consultants were outstanding, without giving effect to the options that were exercised or terminated and RSUs that were vested.

Name	Options Granted	Restricted Share Units	Exercise Price (US$/ Share)	Date of Grant	Date of Expiration
Sheng Chen	*	–	0.15	July 16, 2010	July 16, 2020
	–	*	–	August 30, 2012	–
	–	*	–	November 23, 2013	–
	–	*	–	March 7, 2015	–
	–	*	–	November 21, 2015	–
	–	*	–	November 26, 2016	–
	–	*	–	August 18, 2019	–
	–	*	–	November 2, 2021	–
Yoshihisa Ueno	–	*	–	October 1, 2012	–
	–	*	–	April 25, 2014	–
	–	*	–	December 2, 2017	–
	–	*	–	March 7, 2018	–
	–	*	–	March 3, 2020	–
Kenneth Chung-Hou Tai	–	*	–	October 16, 2012	–
	–	*	–	November 21, 2015	–
	–	*	–	August 14, 2016	–
	–	*	–	May 12, 2017	–
	–	*	–	March 7, 2018	–
				May 15, 2019	
				March 3, 2020	
Sean Shao	–	*	–	November 21, 2015	–
	–	*	–	May 15, 2019	–
				March 3, 2020	
Erhfei Liu	–	*	–	November 21, 2015	–
	–	*	–	May 15, 2019	–
				March 3, 2020	
Changqing Ye	–	*	–	August 26, 2022	–
Jie Dong	–	*	–	August 26, 2022	–
Tim Chen	–	*	–	August 18, 2020	–
Other individuals as a group	28,953,524	8,059,696	0.15 to 0.85	–	–

* *Shares underlying vested options are less than 1% of our total outstanding shares.*

Our 2010 Plan, 2014 Plan and 2020 Plan have similar terms, the following paragraphs describe the principal terms of these plans.

Plan Administration. Our board and the compensation committee of the board will administer our plans. A committee of one or more members of the board designated by our board or the compensation committee is also authorized to grant or amend awards to participants other than senior executives. The committee will determine the provisions and terms and conditions of each award grant. It shall also have discretionary power to interpret the terms of our plans.

Award Agreement. Awards granted under our plans are evidenced by an award agreement that sets forth terms, conditions and limitations for each award, which may include the term of an award, the provisions applicable in the event the participant's employment or service terminates, and our authority to unilaterally or bilaterally amend, modify, suspend, cancel or rescind an award.

Eligibility. We may grant awards to our employees, consultants and directors. However, no shares may be optioned, granted or awarded if such action would cause an incentive share option to fail to qualify as an incentive share option under Section 422 of the Internal Revenue Code of 1986 of the United States.

Acceleration of Awards upon Change in Control. The participant's awards shall become fully exercisable and all forfeiture restrictions on such awards shall lapse, unless converted, assumed or replaced by a successor.

Exercise Price. The exercise price of an option shall be determined by the plan administrator and set forth in the award agreement and may be a fixed or variable price related to the fair market value of the shares, to the extent not prohibited by applicable laws. Subject to certain limits set forth in the plan, the exercise price may be amended or adjusted in the absolute discretion of the plan administrator, the determination of which shall be final, binding and conclusive. To the extent not prohibited by applicable laws or any exchange rule, a downward adjustment of the exercise prices of options shall be effective without the approval of the shareholders or the approval of the affected participants.

Vesting Schedule. In general, our plan administrator determines, or the evidence of the award specifies, the vesting schedule.

Amendment and Termination of the Plan. With the approval of our board, our plan administrator may, at any time and from time to time, amend, modify or terminate the plan, provided, however, that no such amendment shall be made without the approval of our shareholders to the extent such approval is required by applicable laws, or in the event that such amendment increases the number of shares available under our plan, permits our plan administrator to extend the term of our plan or the exercise period for an option beyond ten years from the date of grant or results in a material increase in benefits or a change in eligibility requirements, unless we decides to follow home country practice.

Employees

We had 2,599, 3,221 and 3,293 employees as of December 31, 2020, 2021 and 2022, respectively. The following table sets forth the number of our employees by function as of December 31, 2022:

	As of December 31, 2022	
Functional Area	**Number of Employees**	**% of Total**
Operations	1,578	48%
Sales, marketing and customer support	435	13%
Research and development	585	18%
General and administrative	695	21%
Total	3,293	100%

Among our total employees as of December 31, 2022, 1,729 were located in Beijing, and 1,564 in other cities in China.

Our recruiting efforts include on-campus recruiting, online recruiting and the use of professional recruiters. We partner with leading national research institutions and employ other measures designed to bring us into contact with suitable candidates for employment.

As required by regulations in China, we participate in various government statutory employee benefit plans, including social insurance funds, namely a pension contribution plan, a medical insurance plan, an unemployment insurance plan, a work-related injury insurance plan and a maternity insurance plan, and a housing provident fund. We are required under PRC law to contribute to employee benefit plans at specified percentages of the salaries, bonuses and certain allowances of our employees up to a maximum amount specified by the local government from time to time.

We enter into standard labor contracts with our employees. We also enter into standard confidentiality and non-compete agreements with our senior management. The non-compete restricted period typically expires two years after the termination of employment, and we agree to compensate the employee with a certain percentage of his or her pre-departure salary during the restricted period.

We believe that we maintain a good working relationship with our employees, and we have not experienced any major labor disputes.

Legal Proceedings

From time to time, we are subject to legal proceedings, investigations and claims incidental to the conduct of our business. For risks and uncertainties relating to the pending case against us. We may be subject to legal proceedings or arbitration claims in the ordinary course of our business, and the court rulings or arbitration awards may not be favorable to us. We are currently not involved in any legal or administrative proceedings that may have a material adverse impact on our business, financial position or profitability.

Arbitration with TEDA Venture Capital Corporation Limited in relation to the acquisition of BJ TenxCloud

On July 15, 2021, we, through our wholly-owned subsidiary, Shenzhen Cloud Native Technology Co., Ltd., or SZ Cloud Native, acquired 100% of the equity interests in BJ TenxCloud from third-party selling shareholders of BJ TenxCloud for a total consideration of RMB414.7 million, consisting of approximately RMB199.8 million in cash and share-settled liabilities with estimated fair value of RMB214.9 million as of July 15, 2021. In addition, we are obligated to pay cash of RMB70.0 million and to issue certain numbers of the shares of the Company or its subsidiary with estimated fair value of RMB167.4 million as of December 31, 2021 to certain selling shareholders who remain as the key employees of BJ TenxCloud.

In March 2023, TEDA Venture Capital Corporation Limited, one of the third-party selling shareholders of BJ TenxCloud, initiated an arbitration proceeding against the Company, VNET Future Technology Limited and SZ Cloud Native in China International Economic and Trade Arbitration Commission, seeking to receive the payment by the Company of the unpaid non-cash consideration of approximately RMB60.0 million in cash for acquiring BJ TenxCloud, plus interest and legal costs amounting to approximately RMB0.7 million. Due to the early stage and uncertainties of this arbitration, the Company is unable to determine if any liability will arise or estimate the range of any potential liability. As of the date of this annual report, no final judgment has been made. The Company plans to vigorously defend against the allegations in this arbitration based on the facts and evidence found.

Disputes with Shanghai VNET Information System Co., Ltd.

Shanghai VNET Information System Co., Ltd. is a company bearing "VNET" in its name but is not affiliated with us. In January 2008, VNET Beijing and VNET China brought two lawsuits against Shanghai VNET Information System Co., Ltd. in a Beijing court for intellectual property rights infringement and unfair competition. VNET Beijing and VNET China prevailed in each case. The court ordered Shanghai VNET Information System Co., Ltd. to stop infringing our trademark and stop engaging unfair competition activities. VNET Beijing and VNET China was also awarded RMB150,000 in damages for each case. In October 2010, VNET China filed another complaint against Shanghai VNET Information System Co., Ltd. for domain name infringement and unfair competition. In July 2011, Shanghai VNET Information System Co., Ltd. settled the case with us and transferred the domain name www.VNET.com.cn to us for free. However, Shanghai VNET Information System Co., Ltd. may continue to include "VNET" as part of its official company name when the name is spelt out in full, while using "VNET" or our logo in a short form or other context is prohibited.

Our executive chairman, Mr. Sheng Chen, holds a minority equity interest in Shanghai VNET Information System Co., Ltd. due to historical reasons. As a result of the restriction on equity transfer pursuant to its articles of association, it is not practical for Mr. Chen to transfer his equity interest in Shanghai VNET Information System Co., Ltd. to us or any other parties. Mr. Chen, however, has executed an irrevocable power of attorney, pursuant to which Mr. Chen has appointed VNET Beijing as his attorney-in-fact to attend shareholders' meeting of Shanghai VNET Information System Co., Ltd. and to exercise all the shareholder's voting rights. Such power of attorney remains valid and irrevocable so long as Mr. Chen remains the shareholder of Shanghai VNET Information System Co., Ltd.

Interest Rate Risk

Our exposure to interest rate risk primarily relates to interest expenses incurred in respect of borrowings, finance lease liabilities as well as interest income generated by excess cash, which is mostly held in interest-bearing bank deposits. As of December 31, 2022, we had (i) long-term borrowings (current portions) with an aggregate outstanding balance of RMB484.0 million (US$70.2 million), and (ii) long-term borrowings (excluding current portions) with an aggregate outstanding balance of RMB3,049.9 million (US$442.2 million).

The long-term borrowings bore weighted-average interest rate of 5.11% per annum. A hypothetical one percentage point (100 basis-point) decrease in interest rates would have resulted in a decrease of approximately RMB40.8 million (US$5.9 million) in interest expense for the year ended December 31, 2022. We have not used derivative financial instruments in our investment portfolio. Interest earning instruments and interest-bearing obligations carry a degree of interest rate risk. We have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in market interest rates. However, our future interest income and interest expenses may fluctuate due to changes in market interest rates.

Foreign Exchange Risk

We earn most of our revenues and incur most of our expenses in Renminbi, and most of our sales and purchase contracts are denominated in Renminbi. We have not used any derivative financial instruments to hedge our exposure to foreign exchange risk. The Renminbi depreciated by 2.3% against the U.S. dollar in 2021 and then appreciated 9.2% in 2022. The Company intends to hold U.S. dollar-denominated financial assets and will convert to RMB according to the trend of exchange rate changes. As of December 31, 2022, we had total U.S. dollar-denominated cash and cash equivalents, restricted cash and short-term investments in the amount of US$101.5 million. A hypothetical 10% increase in the exchange rate of the U.S. dollar against the RMB would have resulted in an increase of RMB70.0 million (US$10.1 million) in the value of our U.S. dollar-denominated financial assets at December 31, 2022.

The conversion of Renminbi into foreign currencies, including U.S. dollars, is based on rates set by the People's Bank of China. Since June 2010, the RMB has fluctuated against the U.S. dollar, at times significantly and unpredictably, and in recent years the RMB has depreciated significantly against the U.S. dollar. It is difficult to predict whether the depreciation will continue and how market forces or PRC or U.S. government policy may impact the exchange rate between the RMB and the U.S. dollar in the future. As our costs and expenses are mostly denominated in RMB, the appreciation of the RMB against the U.S. dollar would increase our costs in U.S. dollar terms. In addition, as our operating subsidiaries and VIEs in China receive revenues in RMB, any significant depreciation of the RMB against the U.S. dollar may have a material and adverse effect on our revenues in U.S. dollar terms and financial condition, and the value of, and any dividends payable on, our ordinary shares. For example, to the extent that we need to convert U.S. dollars into Renminbi for capital expenditures and working capital and other business purposes, appreciation of the Renminbi against the U.S. dollar would have an adverse effect on the RMB amount we would receive from the conversion. Conversely, if we decide to convert Renminbi into U.S. dollars for the purpose of making payments for dividends on our ordinary shares or ADSs, strategic acquisitions or investments or other business purposes, appreciation of the U.S. dollar against the Renminbi would have a negative effect on the U.S. dollar amount available to us.

Significant Investments Held, Material Acquisitions or Disposals of Subsidiaries and Future Plans Regarding Capital Asset Acquisitions or Material Investments

Save for any investments in the subsidiaries of VNET, VNET had no significant investments held or material acquisitions and disposals of subsidiaries, associates and joint ventures during the year ended December 31, 2022. As at December 31, 2022, VNET had no clearly defined plans relating to significant capital asset acquisitions or material investments, nor future plans of significant disposals of subsidiaries, associates and joint ventures.

Gearing Ratio

As at December 31, 2022, the gearing ratio (total liabilities divided by total assets) of VNET was approximately 74% (December 31, 2021: 67%).

D. MANAGEMENT DISCUSSION AND ANALYSIS OF THE RESULTS OF THE TARGET GROUP FOR THE SIX MONTHS ENDED 30 JUNE 2023

Liquidity and Capital Resources

The accompanying consolidated financial statements have been prepared assuming that the Target Group will continue as a going concern, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. The Target Group has experienced recurring losses from operations. As of June 30, 2023, the Target Group had an accumulated deficit of US$1,175.0 million. For the six months period ended June 30, 2023, the net cash the Target Group generated from operating activities amounted to US$121.1 million. The Target Group's ability to continue as a going concern is dependent on the Target Group's ability to generate cash flows from operations, and the Target Group's ability to arrange adequate financing arrangements. These above factors raise doubt about the Target Group's ability to continue as a going concern.

As of June 30, 2023, the Target Group had RMB2,363.0 million in cash and cash equivalents and RMB254.0 million in restricted cash (current and non-current portion).

As of June 30, 2023, the Target Group had long-term borrowings (current portion) from various commercial banks with an aggregate outstanding balance of RMB533.0 million, and long-term borrowings (excluding current portion) from various commercial banks with an aggregate outstanding balance of RMB3,667.6 million. The Target Group has entered into long-term borrowing arrangements since 2013 with maturity terms of two to fifteen years. The long-term borrowings (including current and non-current portions) outstanding as of June 30, 2023 bore weighted-average interest rates of 4.89%.

The Target Group had unused credit lines in an aggregate amount of RMB2,533.9 million as of June 30, 2023 under credit agreements with 15 banks. As of the same date, the Target Group used RMB3,672.1 million of the credit lines under the credit agreements with 11 banks, pursuant to which the Target Group was granted credit lines in an aggregate amount of RMB6,206.0 million. There are no material covenants that restrict the Target Group's ability to undertake additional financing associated with the used credit lines. No terms and conditions of the unused credit lines are available yet because utilization of such unused portion requires approval by the banks and separate loan agreements setting forth detailed terms and conditions will only be entered into with the banks upon utilization. The Target Group believes the working capital as of June 30, 2023 is sufficient for the Target Group's present requirements.

As of June 30, 2023, the Target Group had total outstanding debts (consisting of borrowings) of RMB4,200.6 million, all of which were onshore debt obligations. The Target Group believes the Target Group has sufficient financial resources to meet both of the Target Group's onshore and offshore debt obligations when due. The growth of the Target Group's business relies on the construction of new data centers. The Target Group also intends to acquire or invest in companies whose businesses are complementary to ours. The Target Group intends to use the proceeds of the Target Group's outstanding debt mainly to construct new data centers and fund the Target Group's acquisitions. As of June 30, 2023, the Target Group had purchase commitments made for acquisitions of machinery, equipment, construction in progress, bandwidth and cabinet capacity of RMB1,934.1 million becoming due within six months, and the Target Group intends to use a portion of the proceeds to fund these purchase commitments. Except as disclosed in this annual report, the Target Group has no outstanding bank loans or financial guarantees or similar commitments to guarantee the payment obligations of third parties. The Target Group believes that the Target Group's current cash, cash equivalents and time deposits, the Target Group's cash flow from operations and proceeds from the Target Group's financing activities will be sufficient to meet the Target Group's anticipated cash needs, including the Target Group's cash needs for working capital and capital expenditures, for the next 12 months. If the Target Group has additional liquidity needs in the future, the Target Group may conduct additional financing, including equity offering and debt financing in private or public capital markets and control of operating expenses and capital expenditure where necessary, to meet such needs.

As of June 30, 2023, the total amount of cash and cash equivalents, restricted cash and short-term investments was RMB2,761.5 million, of which RMB1,611.2 million, RMB650.5 million and RMB499.8 million was held by the Target Company's consolidated affiliated entities, PRC subsidiaries and offshore subsidiaries, respectively. Cash transfers from the Target Company's PRC subsidiaries to the Target Company's subsidiaries outside of China are subject to PRC government control of currency conversion. Restrictions on the availability of foreign currency may affect the ability of the Target Company's PRC subsidiaries and consolidated affiliated entities to remit sufficient foreign currency to pay dividends or other payments to the Target Group, or otherwise satisfy their foreign currency denominated obligations. Governmental control of currency conversion may limit the Target Group's ability to receive and utilize the Target Group's revenues effectively. The major cost that would be incurred to distribute dividends is the withholding tax imposed on the dividends distributed by the Target Company's PRC operating subsidiaries at the rate of 10% or a lower rate under an applicable tax treaty, if any.

Material Cash Requirements

The Target Group's material cash requirements as of June 30, 2023 and any subsequent interim period primarily include the Target Group's capital expenditures, long-term borrowings, convertible promissory notes, purchase commitments, operating lease obligations and finance lease minimum lease payment.

The Target Group's capital expenditures were primarily for building self-built data centers, purchasing network equipment, servers and other equipment. The Target Group's capital expenditures have been primarily funded by cash generated from the Target Group's operations and net cash provided by financing activities. The Target Group had capital expenditures relating to the addition of property and equipment of RMB1,003.5 million for the six months period ended June 30, 2023, representing 27.7% of the Target Group's total net revenues for the same periods. The Target Group expect the Target Group's data center capacity to increase by an aggregate amount of approximately 8,000 to 9,000 cabinets during the year of 2023, through both organic growth and strategic acquisitions. The Target Group may incur additional capital expenditure for real property purchase, data center construction and network capacity expansion if the Target Group's actual development is beyond the Target Group's current plan.

As of June 30, 2023, the Target Group's unused short-term and long-term borrowing facilities amounted to RMB2,533.9 million.

Long-term borrowings (including the current portions) outstanding as of June 30, 2023 bear a weighted-average interest rate of 4.89% per annum, and are denominated in Renminbi. These loans were obtained from financial institutions located in the PRC.

The Target Group's convertible promissory notes consist primarily of (i) the 2025 Convertible Notes issued during the year ended December 31, 2020, with an aggregate principal amount of US$200.0 million at an interest rate of 2% per annum, which will mature in five years since the issuance; (ii) the 2026 Convertible Notes issued in January 2021, with an aggregate principal amount of US$600.0 million at a zero-coupon rate, which will mature on February 1, 2026; and (iii) the 2027 Convertible Notes issued in January 2022, with an aggregate principal amount of US$250.0 million at an interest rate of 2% per annum, which will mature in February 2027.

The Target Group had purchase commitments of approximately RMB1,615.3 million related to acquisition of machinery, equipment and construction in progress as of June 30, 2023. In addition, the Target Group had outstanding purchase commitments in relation to bandwidth and cabinet capacity of RMB1,719.9 million as of the same date.

The Target Group's operating lease obligations are primarily related to the lease of office and data center space. The Target Group's operating cash payments for operating leases was RMB382.8 million for the six months period ended June 30, 2023.

The Target Group's finance lease minimum lease payment is primarily related to finance leases for electronic equipment, optic fibers and property. The Target Group's financing cash payments for finance leases amounted to RMB152.1 million for the six months period ended June 30, 2023.

The Target Group plans to fund the Target Group's existing and future material cash requirements with cash from the proceeds from the Target Group's operations, bank borrowings and other appropriate financing instruments, if available.

The Target Group has not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. The Target Group does not have retained or contingent interests in assets transferred. The Target Group has not entered into contractual arrangements that support the credit, liquidity or market risk for transferred assets. The Target Group does not have obligations that arise or could arise from variable interests held in an unconsolidated entity, or obligations related to derivative instruments that are both indexed to and classified in the Target Group's own equity, or not reflected in the statement of financial position.

Other than as discussed above, the Target Group did not have any significant capital and other commitments, long-term obligations or guarantees as of June 30, 2023.

Commitments and contingencies

Capital commitments

As of June 30, 2023, the Target Company has the following commitments to purchase certain computer and network equipment and construction-in-progress:

	RMB'000
For the period or year ending December 31	
2023	614,407
2024	480,248
2025	217,915
2026	188,583
2027	96,993
2028 and thereafter	17,188
Total	1,615,334

Bandwidth and cabinet capacity purchase commitments

As of June 30, 2023, the Target Company has outstanding purchase commitments in relation to bandwidth and cabinet capacity consisting of the following:

	RMB'000
For the period or year ending December 31	
2023	1,319,700
2024	374,139
2025	11,303
2026	3,707
2027	7,338
2028 and thereafter	3,699
Total	1,719,886

Interest rate risk

The Target Company is exposed to interest rate risk on its interest-bearing assets and liabilities. As part of its asset and liability risk management, the Target Company reviews and takes appropriate steps to manage its interest rate exposures on its interest-bearing assets and liabilities. The Target Company has not been exposed to material risks due to changes in market interest rates, and not used any derivative financial instruments to manage the interest risk exposure during the periods presented.

Foreign Exchange Risk

The Target Group earns most of the Target Group's revenues and incur most of the Target Group's expenses in Renminbi, and most of the Target Group's sales and purchase contracts are denominated in Renminbi. The Target Group has not used any derivative financial instruments to hedge the Target Group's exposure to foreign exchange risk. The Renminbi depreciated by 3.8% in six months period ended June 30, 2023. The Target Company intends to hold U.S. dollar-denominated financial assets and will convert to RMB according to the trend of exchange rate changes. As of June 30, 2023, the Target Group had total U.S. dollar-denominated cash and cash equivalents, restricted cash and short-term investments in the amount of US$106.9 million. A hypothetical 10% increase in the exchange rate of the U.S. dollar against the RMB would have resulted in an increase of RMB77.5 million (US$10.7 million) in the value of the Target Group's U.S. dollar-denominated financial assets at June 30, 2023.

Business Overview

The Target Group is a leading carrier-neutral and cloud-neutral data center service provider in China. The Target Group has one of the largest carrier-neutral data center networks in China with the Target Group's 45 self-built data centers and 104 partnered data centers with an aggregate capacity of 86,927 cabinets under the Target Group's management as of June 30, 2032. The Target Group's data centers are concentrated in tier-1 cities in China and their surrounding regions, which have favorable supply-demand dynamics, owing to dense internet traffic, scarce resources and high demand for data center facilities. Most of the Target Group's data centers and the Target Group's POPs are connected across China.

The Target Group offers managed hosting services to host the Target Group's customers' servers and networking equipment and provide interconnectivity to improve the performance, availability and security of their internet infrastructure. The Target Group has adopted a "dual-core" strategy to address both retail and wholesale data center market opportunities. The Target Group's managed retail services provide different levels of services that are scalable to meet the Target Group's customers' needs, from a single cabinet up to megawatt-scale deployments. The Target Group's managed wholesale services provide customers with new data center sites constructed and developed by the Target Group based on their specified standards. The Target Group believes that the scale of the Target Group's data center footprint and networking assets as well as the Target Group's carrier- and cloud-neutrality, position the Target Group well to capture the vast opportunities in the rapidly expanding market of internet and cloud computing infrastructure services in China.

In addition, the Target Group is a first mover among China's carrier-neutral data center service providers in offering cloud services through partnerships to cover public, private and hybrid cloud scenarios. The Target Group provides customized enterprise VPN services and solutions, including software-defined wide area network, or SD- WAN, to enterprises across various industries. These value-added services strengthen the Target Group's capability to provide quality services and meet the Target Group's customers' additional demands.

According to Frost & Sullivan, the continuing drivers for the data center demands consist of (i) growing IT outsourcing capacity by enterprises; (ii) implementation of next-generation 5G network and disruptive technologies; (iii) growing data center service demand from China's cloud service providers and enterprise digital transformation; (iv) supportive government policies, despite the recent regulatory headwinds; (v) customer segments drive data center service demand; and (vi) the overall growing trend of generating and processing data and robust growth in data traffic. From 2017 to 2022, China's carrier- neural data center service market has been growing by a CAGR of 32.0% and is expected to grow by a CAGR of 20.2% from 2023 to 2027. China's cloud service market has been growing by a CAGR of 31.4% from 2017 to 2022 and is expected to grow by a CAGR of 23.8% from 2023 to 2027. As a leading carrier-neutral and cloud-neutral data center service provider in China, the Target Group had a 10.0% market share in the carrier-neutral data center service market in terms of data center service revenues in 2022.

The Target Group is a pioneer in the carrier-neutral data center industry in China and commenced the Target Group's operations in 1999. According to Frost & Sullivan, the Target Group is one of the first carrier-neutral data center service providers in China with infrastructure interconnected with all major network providers, which connect and share data traffic to help scale the rapid development of the early internet industry in China. Based on the Target Group's partnership with Microsoft to introduce Azure and Microsoft 365 (formerly Office 365) in China in 2013, the Target Group is also the first carrier-neutral data center service provider to offer global cloud services in China and the Target Group's services have helped accelerate the digital transformation of the Target Group's enterprise customers.

The Target Group is a carrier-neutral internet infrastructure service provider. The Target Group's infrastructure is interconnected with the networks operated by all China's telecommunications carriers, major non-carriers and local internet service providers. The interconnectivity enables each of the Target Group's data centers to function as a network access point for the Target Group's customer's data traffic. In addition, the Target Group believe that the Target Group's proprietary smart routing technology allows the Target Group to automatically select an optimized route to direct the Target Group's customers' data traffic to ensure fast and reliable data transmission. The Target Group believes this advanced interconnectivity within and beyond the Target Group's network distinguishes ourselves from the Target Group's competitors and provides an effective solution to address the Target Group's customers' needs that arise from inadequate public internet infrastructure and network interconnectivity in China. As a result, businesses are increasingly relying upon internet infrastructure services providers and in particular, carrier-neutral internet infrastructure services providers, to enhance and optimize key elements of their IT and network infrastructure.

With a nationwide data center network and comprehensive service offerings, the Target Group has attracted a diversified and loyal customer base. As of June 30, 2023, the Target Group had over 1,400 customers for the Target Group's managed hosting services and over 7,000 enterprise customers in total. The Target Group also enjoy long- standing relationships with the Target Group's customers and have high customer retention, as evidenced by the Target Group's low average monthly hosting churn rate for managed hosting services, which was 0.2% for the six months period ended June 30, 2023.

The Target Group's Service Offerings

Through the Target Group's quality data center network, the Target Group offers comprehensive hosting and related services, including:

- *Managed Hosting Services* consisting of managed retail services and managed wholesale services. The Target Group's managed retail services include (i) colocation services that dedicate data center space to house the Target Group's customers' servers and networking equipment and provide tailored server administration services, (ii) interconnectivity services that allow customers to connect their servers with each other, internet backbones in China and other networks through the Target Group's Border Gateway Protocol, or BGP, network, or the Target Group's single-line, dual-line or multiple-line networks, and (iii) value- added services, including hybrid IT services, bare metal services, firewall services, server load balancing, data backup and recovery, data center management, server management, and backup server services. To address the wholesale IDC market opportunities, the Target Group established a "dual-core" strategy in 2019 to expand the Target Group's services to managed wholesale services to China's internet giants and large-scale cloud computing service providers. The Target Group constructs and delivers data centers based on these customers' required specifications and standards;

- *Cloud Services* that allow customers to run their applications over the internet using the Target Group's IT infrastructure rather than having the infrastructure on their own premises; and

- *VPN Services* that extend customers' private networks by setting up secure and dedicated connections through the public internet.

The Target Group's data centers host the servers of the Target Group's customers and meet their needs to deploy computing, network, storage and IT infrastructure. The Target Group's services are scalable, allowing the Target Group's customers to purchase space and power and upgrade connectivity and services as their requirements evolve. In addition, the Target Group's customers benefit from the Target Group's data centers' wide range of physical security features, including sensitive smoke detection systems, fire suppression systems, secured access, around-the-clock video camera surveillance and security breach alarms. The Target Group's data centers are fully-redundant and feature resilient power supplies, energy efficient design, connection with multiple network providers and 24/7 on-site support provided by the Target Group's skilled engineers. As a result, the Target Group is able to provide service-level agreement for 99.9% uptime for power for the Target Group's self-built data centers. As a carrier-neutral data center service provider, the Target Group provides high interconnectivity to the Target Group's customers with the Target Group's access to multiple carriers and service providers and the availability of multiple-provider bandwidth. By securing multiple suppliers for connectivity and using redundant hardware, the Target Group is able to guarantee 99.9% internet connectivity uptime for the Target Group's self-built data centers.

Managed Hosting Services

The Target Group has been providing managed retail services since the inception of the Target Group's operations in 1999 and started to provide managed wholesale services in 2019 to implement the Target Group's "dual-core" strategy that the Target Group developed in 2019.

Managed Retail Services*. The Target Group's managed retail services include colocation services, interconnectivity services, and value-added services.*

- *Colocation Services* allow customers to lease partial or entire cabinets for their servers. The Target Group's customers have full control over their server(s) housed in the Target Group's data centers. Depending on customer needs, the Target Group provides different levels of tailored server administration services, including operating system support and assistance with updates, server monitoring, server backup and restoration, server security evaluation, firewall services, and disaster recovery. The Target Group's customers' servers are housed in the Target Group's data centers providing redundant power supplies and heating, ventilating and air conditioning systems. The Target Group's colocation services relieve customers from the daily pressures of IT infrastructure maintenance so that they can focus on their core businesses. Customers have the option to either place their servers and equipment in standard cabinets dedicated for their exclusive use, or in cabinets shared with other customers. They can customize their cabinet space for their servers, network connections and other equipment. Customers can elect to buy the hardware that they place within their cabinets from their chosen suppliers. In addition, customers can also lease power-enabled blank space, where they can place their own cabinets in the Target Group's data centers or use the Target Group's services to build their customized cabinet space.

- *Interconnectivity Services* are provided by the Target Group in the following ways:

  - Border Gateway Protocol ("**BGP**") Network Services. The Target Group provides network services that use BGP routing protocol and policies, which allow the internet to become a decentralized system and thereby reduces traffic congestion and data transmission time;

  - Single-line Network Services. Some of the Target Group's customers choose to connect their servers only to one telecommunication carrier in China. Based on their selections, the Target Group provides them with network connection to the major telecommunication carriers, including China Telecom, China Unicom and China Mobile; and

  - Multiple-line Network Services. As a carrier-neutral service provider, the Target Group's data centers are connected to all carrier and non-carrier networks in China. Customers then may choose to connect their servers to two or multiple networks, which provides more cost-effective internet access and ensures better business continuity. The Target Group's interconnectivity services connect the Target Group's customers with each other, connect the Target Group's data centers with telecommunication carriers' backbone network and other networks. The Target Group provides cross-connection services to the Target Group's customers. Upon the request of the customers, the Target Group utilizes single or multi-mode fibers to create links between the customers directly and exclusively.

- *Value-Added Services* are provided by the Target Group in the following ways:

  - Hybrid IT Services. The Target Group's hybrid IT services provide customers with a complete package of infrastructure service offerings, conveniently bundled to expedite the customer's process to launch their applications and products to the extent possible. In conjunction with the Target Group's infrastructure-as-a-service, or IaaS, and platform-as-a-service, or PaaS, hybrid IT services combine colocation, servers, connectivity, storage and customer services to save IT infrastructure deployment time, and provide a complete, reliable, and secured environment for customer's IT demands. As more customers move their IT resources to the cloud, the Target Group's cloud-neutral platform will enable the Target Group's hybrid IT services to provide elastic cloud services as well as their inter-linked connections;

  - Full Domain Managed Cloud Services. Based on the Target Group's sub-brand, Neolink's self-developed managed cloud operation and management platform ("**LCloud**") and unified operation and maintenance platform ("**UMP**"), the Target Group provides four major core products: managed cloud, cloud resource pool, bare metal cloud, and enterprise services, providing customers with comprehensive one-stop services for cross domain traditional IT domains, managed IT domains, and public cloud IT domains, which includes one-stop operation and maintenance monitoring services, one-stop disaster recovery services, one-stop computing services, etc; and

  - Other Value-Added Services. To complement the Target Group's hosting services and enhance the Target Group's customers' experiences, the Target Group also provides other value-added services, including bare metal services, firewall services, server load balancing, data backup and recovery, data center management, server management, and standby server services. In addition, the Target Group also provides customers with traffic charts and analysis, gateway monitoring for servers, domain name system setup, defense mechanism against distributed denial of service (DDOS) attacks, basic setting of switches and routers, and virus protections.

- *Managed Wholesale Services.* The Target Group's managed wholesale services started in 2019 and provide internet giants and large-scale cloud computing service providers with data center sites constructed and developed by the Target Group. Based on the specific requirements of the Target Group's customers, the Target Group sources properties for data center sites by acquiring or leasing green-field sites or existing industrial buildings from third parties, and then design and, through cooperation with developers, contractors, and suppliers, build the data center facilities with advanced design and high technical specifications. The Target Group believes the Target Group's core competency and capabilities, acquired from decades of industry experience in the retail segment, are also applicable and critical when the Target Group expands the Target Group's business into the wholesale segment and develop wholesale data centers. The managed wholesale datacenter business has developed rapidly, as of June 30, 2023, the total capacity commitment from the Target Group's wholesale customers was 431 megawatts.

- *Planning:* The Target Group engages with the Target Group's clients from the site selection and planning stage and choose the sites for wholesale data centers at the strategic locations which fits into the Target Group's clients' IT infrastructure deployment and provides great access to power and connectivity. Backed by multi-year experience and strong presence in key markets, the Target Group is able to conduct in-depth analysis and select the most suitable location based on clients' requirements by acquiring or leasing green-field sites or existing industrial buildings from third parties. The Target Group's team works closely with local government authorities to obtain necessary permits and approvals and with electric utilities to obtain sufficient power supply. The Target Group also actively cooperates with telecommunication carriers to ensure multi-carrier connectivity to the Target Group's wholesale data centers.

- *Design:* Leveraging the Target Group's technological know-how from the Target Group's internal design teams and a comprehensive data center product portfolio, developing and accumulating through the designs and construction of self-built data centers, the Target Group is dedicated to ensuring that each of the Target Group's wholesale data centers meets the specific requirements of the Target Group's clients and achieves industry leading energy efficiency and operating performance. The Target Group's technology strengths, such as advanced cooling technology and power management technology, are integrated due to close collaboration among the Target Group's internal design team, research and development team and external design institutes.

- *Construction:* The Target Group believes the Target Group's well-established relationships with high quality contractors and suppliers, combined with the Target Group's specialized construction team consisting of experienced professionals, help the Target Group to ensure fast delivery and cost effectiveness in data center construction. As opposed to retail data centers, typically the wholesale data centers are built to suit and customized to fulfill the Target Group's clients' different technical requirements. Furthermore, the Target Group's clients require the Target Group to deliver wholesale data centers in large volumes within a prescribed construction period.

- *Operations:* The Target Group is one of the first carrier neutral data center service providers in China and commenced operations in 1999. Since then, the Target Group has't encountered any disastrous accident over the last 20 years, demonstrating the Target Group's strong operational expertise. The Target Group is able to provide service-level agreement for 99.9% uptime for power and 99.9% uptime for network connectivity for the Target Group's self-built data centers. The Target Group's operational excellence to deliver wholesale data centers with high reliability, availability, security and manageability are sought by the Target Group's wholesale clients. As a result, operations and management expertise becomes an increasingly important criteria when they select their data center partners.

Cloud Services

The Target Group started providing public cloud services in 2013 through the Target Group's cooperation with Microsoft. Under the Target Group's cooperation arrangement with Microsoft, the Target Group provides Microsoft's cloud services, including Microsoft Azure, Microsoft 365 (formerly Office 365), Dynamics 365 and Power Platform, to customers in mainland China by entering into service agreements with such customers.

The Target Group provides IaaS, PaaS, and software-as-a-service, or SaaS, to the Target Group's enterprise end customers. Microsoft Azure provides the Target Group's customers with a one-stop shop to purchase a portion of the pooled computing resources, control the applications uploaded to the virtual servers and/or access to the applications run by various operators on the cloud infrastructure, and pay on an on-demand basis. Through Microsoft 365 services, the Target Group provides the Target Group's customers with not only the complete Microsoft 365 features, but also business-class email, file sharing and HD video conferencing, all working together and connected in the public cloud so that customers can have access to everything they need to run their business from anywhere.

The total customer billing amounts are divided between Microsoft and the Target Group and the Target Group retains a portion of the total customer billing amounts based on the agreed-upon metrics. All sales amounts from the Target Group's services to customers are deposited into an escrow account which are jointly administered by Microsoft and the Target Group, and the Target Group settles the payments to Microsoft on a monthly basis. In addition, the Target Group is entitled to receive incentive payments from Microsoft upon the completion of certain sales or services conditions. The Target Group's current agreement with Microsoft has a term of five years till 2027.

VPN Services

The Target Group offers VPN services, primarily through Dermot Holdings Limited and its subsidiaries, or Dermot Entities, which the Target Group acquired in August 2014 and hold the brand of DYXnet. The Target Group offers customers best-in-class, enterprise-grade network services in numerous cities throughout Greater China and the wider Asia-Pacific region. The Target Group provides enterprise network solutions including Multiprotocol Label Switching ("**MPLS**") and Software-Defined WAN ("**SD-WAN**"), internet access and network security solutions, and fully managed network enabling connectivity with 230 POPs across Asia, of which 103 POPs are for VPN services. The Target Group has further expanded the Target Group's product portfolio to include cloud and SaaS solutions, and the fast deployment of connecting public cloud around the Globe with high-speed network connections. In 2022, the Target Group launched the Secure Access Service Edge ("**SASE**") solution based on the Target Group's SD-WAN services, which has obtained international recognition from the 2023 Asia-Pacific Stevie® Awards.

The Target Group is among the first official members of the China Cross-border Data Telecommunications Industry Alliance for being recognized as legally compliant by China's Communications Administration, and have been appointed as one of the SD-WAN Services Standard Drafting Units of China Communications Standards Association ("**CCSA**"). Additionally, the Target Group obtained the "SD-WAN Ready" certificate for overall solutions issued by the China Academy of Information and Communications Technology ("**CAICT**") in 2020, and further certified with "SD-WAN Ready 2.0" in 2022. The Target Group is also among the first batch of ICT service providers in Greater China to obtain several ISO international certifications including ISO/IEC 27001: 2013, ISO/IEC 20000-1: 2018, and ISO 9001: 2015 for information security, IT service management, and quality management, respectively.

The Target Group's Infrastructure

The Target Group's infrastructure, which consists of the Target Group's data centers and data transmission network, is the foundation upon which the Target Group provides services to the Target Group's customers. As of June 30, 2023, the Target Group operates 45 self-built data centers and 98 partnered data centers located in tier-1 and their surrounding cities, including all of China's major internet hubs, with 87,322 cabinets under management. The Target Group's extensive network, consisting of 230 POPs, is a "high-speed internet railway" that connects the Target Group's data centers with each other and links them to China's telecommunication backbones.

The Target Group's Data Centers

The Target Group adopts a distributed deployment method when choosing locations for the Target Group's partnered data centers based on the specific requests of the Target Group's customers, demands in different cities and the Target Group's strategy for POP establishment; therefore, the locations and number of the Target Group's partnered data centers are subject to change from time to time. The Target Group operates two types of data centers: self-built and partnered. The Target Group defines "self-built" data centers as those with the Target Group's owned cabinets, and data center equipment housed in buildings the Target Group owned, leased from third parties, or the Target Group purchased from third parties. The Target Group defines "partnered" data centers as the data center space and cabinets the Target Group leased from China Telecom, China Unicom, China Mobile and other third parties through agreements. As of June 30, 2023, the Target Group operates 45 self-built data centers housing 82,656 cabinets and 104 partnered data centers housing 4,271 cabinets.

The table below sets forth the number of data centers and cabinets under the Target Group's management as of June 30, 2023, respectively.

	As of June 30, 2023
Data Centers	
Self-built	45
Partnered	104
Total	149
Cabinets	
Self-built	82,656
Partnered	4,271
Total	86,927

The Target Group's data centers are located in over 30 cities as of the date of this annual report. The Target Group's nationwide network of data centers not only enables the Target Group to serve customers in extended geographic areas, but also establishes a national data transmission network that sets up connections among carriers and service providers in various locations.

The table below sets forth the Target Group's portfolio of self-built cabinets housed by the Target Group's data centers as of June 30, 2023.

	As of June 30, 2023	
	Number of Self-built Cabinets Housed	**Percentage of Contribution**
Greater Beijing Area	Approximately 39,100	47.3%
Yangtze River Delta	Approximately 23,500	28.5%
Greater Bay Area	Approximately 9,300	11.2%
Others	Approximately 10,700	13.0%
Total	Approximately 82,600	100.0%

The Target Group builds and operates the Target Group's data centers in compliance with high industry standards in order to provide the Target Group's customers with secure and reliable environments that are necessary for optimal internet interconnectivity. The Target Group's data centers generally feature:

- *Resilient Power* – Redundant, high-capacity and stable power supplies, backed by uninterruptible power supply, or UPS, high-performance batteries and diesel generators;

- *Physical Security* – Round-the-clock monitoring by on-site personnel, which includes verification of all persons entering the building, security barriers, video camera surveillance and security breach alarms;

- *Controlled Access* – Access to the buildings, data floors and individual areas designated for particular customers via individually-programmed access cards and visual identification;

- *Fire Detection and Suppression* – Sensitive smoke detectors linked to building management systems provide early detection to help avoid fire, loss and business disruption. These are complemented by an environmentally-friendly gas-based or water mist fire suppression system to put out fires;

- *Air Conditioning* – To ensure optimal performance and avoid equipment failure, all data center floors are managed to make sure that customers' equipment is maintained at a controlled temperature and humidity; and

- *24/7 Support* – The Target Group staffs the Target Group's data centers with capable and experienced service teams and the Target Group believes the Target Group was the first data center service provider in China to offer 24/7 customer service.

These features minimize chances of interruption to the servers housed in the Target Group's data centers and ensure the business continuity of the Target Group's customers. In addition, the Target Group believes the Target Group was the first data center service provider in China to receive both the ISO 9001 quality system certification by the American Registrar Accreditation Board and a certification by the United Kingdom Accreditation Service.

The Target Group's Network

The Target Group's network transmits data and directs internet traffic, forming an internet highway system that is linked to the networks of major carriers, non-carriers and ISPs and enhances communications among the Target Group's data centers, the Target Group's customers and end users located throughout China and around the world. As of June 30, 2023, the Target Group's network connected 230 POPs throughout China.

The Target Group's network also features numerous interfaces with four telecommunication carriers in China, which are China Telecom, China Unicom, China Mobile and China Education Network. The Target Group's network is not only connected to the headquarters of each carrier, but also with their local networks throughout China.

Due to the Target Group's high-quality data center infrastructure, extensive data transmission network and proprietary smart routing technologies, the Target Group is able to deliver high-performance hosting and related services that can effectively meet the Target Group's customers' business needs, improve interconnectivity among service providers and end users, and effectively address the issue of inadequate network interconnectivity in China.

Acquisition in six months period ended June 30, 2023

On March 1, 2023, the Target Company through its subsidiary, Hebei VNET Big Data Co., Ltd., acquired 100% equity interests in Sanhe Mingtai Digital Industrial Park Co., Ltd. at a consideration of the Target Company's equity share of 22.5% in Sanhe Mingtai Digital Industrial Park Co., Ltd., one of the Target Company's subsidiary. The consideration was RMB116,996, which is referenced to the fair value of the assets acquired. The acquisition is part of the domestic REIT reorganization plan in purpose to satisfy the property ownership requirements in REIT offering. As substantially all of the fair value of the gross assets acquired is concentrated in a group of similar identifiable assets, such acquisition is accounted for as an acquisition of assets.

	RMB'000
Net assets acquired:	
Cash and cash equivalents	2
Property and equipment, net	105,538
Land use rights, net	14,258
Deferred tax assets	2,232
Other current assets	1
Total assets acquired	122,031
Other current liabilities	(2,277)
Deferred tax liabilities	(2,758)
Total liabilities assumed	(5,035)
Net assets acquired	116,996
Purchase consideration	116,996

Significant Investments Held, Material Acquisitions or Disposals of Subsidiaries and Future Plans Regarding Capital Asset Acquisitions or Material Investments

Save for any investments in the subsidiaries of the Target Company, the Target Group had no significant investments held or material acquisitions and disposals of subsidiaries, associates and joint ventures during the six months ended June 30, 2023. As at June 30, 2023, the Target Group had no clearly defined plans relating to significant capital asset acquisitions or material investments, nor future plans of significant disposals of subsidiaries, associates and joint ventures.

Gearing Ratio

As at June 30, 2023, the gearing ratio (total liabilities divided by total assets) of the Target Group was approximately 76% (December 31, 2022: 74%).

INDEPENDENT REPORTING ACCOUNTANT'S ASSURANCE REPORT ON THE COMPILATION OF PRO FORMA FINANCIAL INFORMATION INCLUDED IN AN INVESTMENT CIRCULAR

To the Directors of Shandong Hi-Speed Holdings Group Limited

We have completed our assurance engagement to report on the compilation of pro forma financial information of Shandong Hi-Speed Holdings Group Limited (the "**Company**") and its subsidiaries (collectively the "**Group**") by the directors for illustrative purposes only. The pro forma financial information consists of the unaudited pro forma condensed consolidated statement of financial position of the Group as at 30 June 2023 and related notes as set out on pages IV-4 to IV-8 of the investment circular issued by the Company. The applicable criteria on the basis of which the directors have compiled the pro forma financial information are described in pages IV-4 to IV-8. The pro forma financial information has been compiled by the directors to illustrate the impact of the proposed subscription of shares of VNET Group, Inc. (the "**Target Company**") on the Group's condensed consolidated statement of financial position as at 30 June 2023 as if the completion of the Subscription had taken place at 30 June 2023. As part of this process, information about the Group's condensed consolidated statement of financial position has been extracted by the directors from the Group's unaudited condensed consolidated financial statements for the period ended 30 June 2023, on which no review report has been published.

Directors' Responsibility for the Pro Forma Financial Information

The directors are responsible for compiling the pro forma financial information in accordance with paragraph 4.29 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the "**Listing Rules**") and with reference to AG 7 Preparation of Pro Forma Financial Information for Inclusion in Investment Circulars issued by the Hong Kong Institute of Certified Public Accountants ("**HKICPA**").

Our Independence and Quality Management

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the HKICPA, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

The firm applies Hong Kong Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Reporting Accountant's Responsibilities

Our responsibility is to express an opinion, as required by paragraph 4.29(7) of the Listing Rules, on the pro forma financial information and to report our opinion to you. We do not accept any responsibility for any reports previously given by us on any financial information used in the compilation of the pro forma financial information beyond that owed to those to whom those reports were addressed by us at the dates of their issue.

We conducted our engagement in accordance with Hong Kong Standard on Assurance Engagements (HKSAE) 3420, Assurance Engagements to Report on the Compilation of Pro Forma Financial Information Included in a Prospectus, issued by the HKICPA. This standard requires that the reporting accountant comply with ethical requirements and plan and perform procedures to obtain reasonable assurance about whether the directors have compiled the pro forma financial information in accordance with paragraph 4.29 of the Listing Rules and with reference to AG 7 Preparation of Pro Forma Financial Information for Inclusion in Investment Circulars issued by the HKICPA.

For purposes of this engagement, we are not responsible for updating or reissuing any reports or opinions on any historical financial information used in compiling the pro forma financial information, nor have we, in the course of this engagement, performed an audit or review of the financial information used in compiling the pro forma financial information.

The purpose of pro forma financial information included in an investment circular is solely to illustrate the impact of a significant event or transaction on unadjusted financial information of the Group as if the event had occurred or the transaction had been undertaken at an earlier date selected for purposes of the illustration. Accordingly, we do not provide any assurance that the actual outcome of the event or transaction at 30 June 2023 would have been as presented.

A reasonable assurance engagement to report on whether the pro forma financial information has been properly compiled on the basis of the applicable criteria involves performing procedures to assess whether the applicable criteria used by the directors in the compilation of the pro forma financial information provide a reasonable basis for presenting the significant effects directly attributable to the event or transaction, and to obtain sufficient appropriate evidence about whether:

- The related pro forma adjustments give appropriate effect to those criteria; and
- The pro forma financial information reflects the proper application of those adjustments to the unadjusted financial information.

The procedures selected depend on the reporting accountant's judgment, having regard to the reporting accountant's understanding of the nature of the Group, the event or transaction in respect of which the pro forma financial information has been compiled, and other relevant engagement circumstances.

The engagement also involves evaluating the overall presentation of the pro forma financial information.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Opinion

In our opinion:

(a) the pro forma financial information has been properly compiled on the basis stated;

(b) such basis is consistent with the accounting policies of the Group; and

(c) the adjustments are appropriate for the purposes of the pro forma financial information as disclosed pursuant to paragraph 4.29(1) of the Listing Rules.

Crowe (HK) CPA Limited
11 December 2023
9/F, Leighton Centre,
77 Leighton Road,
Causeway Bay,
Hong Kong

The following is an illustrative and unaudited pro forma condensed consolidated statement of financial position of the Group (the "**Unaudited Pro Forma Financial Information**"), which has been prepared in accordance with paragraph 4.29 of the Listing Rules for the purpose of illustrating the effect of the completion of the Subscription on the unaudited condensed consolidated financial position of the Group as at 30 June 2023 as if the completion of the Subscription had taken place on 30 June 2023.

The Unaudited Pro Forma Financial Information has been prepared on the basis of the notes below based on a number of assumptions, estimates, uncertainties and currently available information. Accordingly, the Unaudited Pro Forma Financial Information does not purport to describe the actual financial position of the Group that would have been attained had the Subscription been completed on 30 June 2023. Neither does the Unaudited Pro Forma Financial Information purports to predict the future financial position of the Group.

The Unaudited Pro Forma Financial Information has been prepared for illustrative purpose only and because of its hypothetical nature, it may not give a true picture of the financial position of the Group had the Subscription been completed as at 30 June 2023, or any future date.

The Unaudited Pro Forma Financial Information should be read in conjunction with the historical financial information of the Group as set out in its published interim report for the six months ended 30 June 2023 and other financial information included elsewhere in this circular.

UNAUDITED PRO FORMA CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION OF THE GROUP

	Unaudited condensed consolidated statement of financial position of the Group as at 30 June 2023	Pro forma adjustments	Pro forma adjustments	Unaudited pro forma condensed consolidated statement of financial position of the Group as at 30 June 2023
	HK$'000	*HK$'000*	*HK$'000*	*HK$'000*
	(Note 1)	*(Notes 3 and 4)*	*(Note 5)*	
NON-CURRENT ASSETS				
Property, plant and equipment	21,431,989	–	–	21,431,989
Investment properties	522,000	–	–	522,000
Right-of-use assets	4,657,336	–	–	4,657,336
Intangible assets	2,101,154	–	–	2,101,154
Operating concessions	1,506,831	–	–	1,506,831
Interests in joint ventures	353,239	–	–	353,239
Interests in associates	3,465,696	3,934,140	–	7,399,836
Financial assets at fair value through other comprehensive income	851,993	–	–	851,993
Loans receivables	799,502	–	–	799,502
Prepayments, deposits and other receivables	2,444,596	–	–	2,444,596
Other tax recoverables	335,837	–	–	335,837
Deferred tax assets	498,759	–	–	498,759
Total non-current assets	38,968,932	3,934,140	–	42,903,072
CURRENT ASSETS				
Inventories	74,525	–	–	74,525
Contract assets	710,841	–	–	710,841
Financial assets at fair value through other comprehensive income	3,472,923	–	–	3,472,923
Financial assets at fair value through profit or loss	2,916,220	–	–	2,916,220
Finance lease receivables	459,354	–	–	459,354
Loans receivables	3,299,292	–	–	3,299,292
Trade and other receivables	12,115,567	–	–	12,115,567
Other tax recoverables	146,258	–	–	146,258
Restricted cash and pledged deposits	351,926	–	–	351,926
Cash held on behalf of clients	70,614	–	–	70,614
Cash and cash equivalents	3,495,082	(932,880)	(2,500)	2,559,702
	27,112,602	(932,880)	(2,500)	26,177,222
Assets classified as held for sale	739,302	–	–	739,302
Total current assets	27,851,904	(932,880)	(2,500)	26,916,524

	Unaudited condensed consolidated statement of financial position of the Group as at 30 June 2023	**Pro forma adjustments**	**Pro forma adjustments**	**Unaudited pro forma condensed consolidated statement of financial position of the Group as at 30 June 2023**
	HK$'000	*HK$'000*	*HK$'000*	*HK$'000*
	(Note 1)	*(Notes 3 and 4)*	*(Note 5)*	
CURRENT LIABILITIES				
Trade and bills payables	1,697,088	–	–	1,697,088
Other payables and accruals	1,915,643	–	–	1,915,643
Lease liabilities	560,722	–	–	560,722
Borrowings	14,710,250	1,399,320	–	16,109,570
Tax payables	216,254	–	–	216,254
Total current liabilities	19,099,957	1,399,320	–	20,499,277
NET CURRENT ASSETS	8,751,947	(2,332,200)	(2,500)	6,417,247
TOTAL ASSETS LESS CURRENT LIABILITIES	47,720,879	1,601,940	(2,500)	49,320,319
NON-CURRENT LIABILITIES				
Borrowings	29,942,374	–	–	29,942,374
Lease liabilities	3,132,007	–	–	3,132,007
Other non-current liabilities	12,462	–	–	12,462
Deferred tax liabilities	313,265	–	–	313,265
Total non-current liabilities	33,400,108	–	–	33,400,108
Net assets	14,320,771	1,601,940	(2,500)	15,920,211
CAPITAL AND RESERVES				
Issued capital	6,019	–	–	6,019
Reserves	(948,299)	1,601,940	(2,500)	651,141
Equity attributable to owners of the Company	(942,280)	1,601,940	(2,500)	657,160
Perpetual capital instrument	7,138,310	–	–	7,138,310
Non-controlling interests	8,124,741	–	–	8,124,741
Total equity	14,320,771	1,601,940	(2,500)	15,920,211

Notes:

1. The amounts are extracted from the unaudited condensed consolidated statement of financial position of the Group as at 30 June 2023 as set out in the published interim report of the Company for the six months ended 30 June 2023.

2. For the purpose of this Unaudited Pro Forma Financial Information, the exchange rate of HK$1.00 to RMB0.91782 and US$1.00 = HK$7.80 has been used for currency translation, where applicable.

   No representation is made that the RMB or US$ amounts have been, could have been or could be converted to HK$, or vice versa, at those rates or at any other rates or at all.

3. Investor-A and Investor-B (each a direct wholly-owned subsidiary of the Company) as investors and the Target Company as issuer entered into the Investment Agreement, pursuant to which the Investors conditionally agreed to subscribe for and the Target Company conditionally agreed to allot and issue a total of 650,424,192 Subscription Shares to the Investors for the Consideration of an aggregate of US$299,000,000 (equivalent to approximately HK$2,332,200,000). The Consideration is expected to be satisfied by the Investors through (i) 40% of the Consideration of approximately HK$932,880,000 could be settled by the available cash of the Investors; and (ii) 60% of the Consideration of approximately HK$1,399,320,000 could be settled by proceeds raised from new borrowings.

   Upon completion, the Group, through the Investors, shall become the beneficial owner of approximately 42.12% of the enlarged total outstanding Target Company Shares and the remaining outstanding Target Company Shares are held by Independent Third Parties. The Target Company will not become a subsidiary of the Company and the financial results of the Target Company will not be consolidated into the financial statements of the Group.

4. Upon the completion of the Subscription, the Target Company will become a 42.12% owned associate of the Company, and is accounted for in the consolidated financial statements of the Group using equity method in accordance with HKAS 28 "Investments in Associates and Joint Ventures".

   The equity method is a method of accounting whereby the investment is initially recognised at cost and adjusted thereafter for the post-acquisition change in the investor's share of the investee's net assets. For the purpose of this Unaudited Pro Forma Financial Information, the net fair value of the identifiable assets and liabilities of the Target Group as at 30 June 2023 is determined based on the directors' estimates of the fair value of the identifiable assets and liabilities of the Target Group.

   The Group will estimate its share of the net fair value of the identifiable assets and liabilities of the Target Group as of the date of completion. The excess of the consideration over the Group's share of the fair value of the Target Group's net assets will be accounted for as goodwill and will be recorded in the carrying value of the investment in the Target Group. Any excess of the Group's share of the net fair value of the identifiable assets and liabilities over the consideration, after reassessment, is recognised immediately in profit or loss in the period in which the investment is acquired. In the opinion of the Directors, the fair values of the identifiable assets and liabilities of the Target Group are subject to change upon completion of the Subscription, as the fair values of the assets and liabilities being acquired shall be assessed on the date of completion.

For illustrative purpose, should the Subscription had been completed on 30 June 2023 and the fair value of the Target Group's net assets as of that date approximate to the carrying amounts of the Target Group's net assets, extracted from the unaudited second quarter 2023 financial results of the Target Company published on 23 August 2023 (being the latest financial information of the Target Company), the pro forma goodwill will be as follows:.

	HK$'000	*HK$'000*
Total consideration paid/payable		2,332,200
Carrying amounts of the Target Group's net assets as at 30 June 2023	7,526,033	
Non-controlling interests of subsidiaries of the Target Group	(517,919)	
Cash to be received from the proposed Subscription	2,332,200	
	9,340,314	
Share of 42.12% of the Target Group's net assets		3,934,140
Gain on bargain purchase arising from the Subscription		(1,601,940)

5. The adjustment represents estimated expenses incurred in connection with the Subscription of which would be recognised in the Group's consolidated income statement upon completion of the Subscription. This adjustment does not have continuing effect on the Group.

6. Save as set out above, the unaudited pro forma condensed consolidated statement of financial position of the Group does not take into account any trading results or other transactions of the Group and the Target Group entered into subsequent to 30 June 2023.

1. RESPONSIBILITY STATEMENT

This circular, for which the Directors collectively and individually accept full responsibility, includes particulars given in compliance with the Listing Rules for the purpose of giving information with regard to the Company. The Directors, having made all reasonable enquiries, confirm, that to the best of their knowledge and belief, the information contained in this circular is accurate and complete in all material respects and not misleading or deceptive, and there are no other matters the omission of which would make any statement herein or this circular misleading.

2. DISCLOSURE OF INTERESTS

(a) Directors' and chief executive's interests and short positions in shares, underlying shares or debentures of the Company and its associated corporations

As at the Latest Practicable Date, none of the Directors and chief executives of the Company had any interests or short positions in the shares, underlying shares or debentures of the Company or its associated corporations (within the meaning of Part XV of the SFO) which were required to be notified to the Company and the Stock Exchange pursuant to Divisions 7 and 8 of Part XV of the SFO (including interests or short positions which he/she was taken or deemed to have taken under such provisions of the SFO), or were recorded in the register required to be kept by the Company pursuant to section 352 of the SFO, or as otherwise notified to the Company and the Stock Exchange pursuant to the Model Code contained in the Appendix 10 to the Listing Rules.

(b) Substantial Shareholders' and other persons' interests in shares and underlying shares

As at the Latest Practicable Date, so far as known to the Directors, the following persons (other than the Directors or chief executives of the Company) had interests or short positions in the shares or underlying shares of the Company which would fall to be disclosed to the Company pursuant to Divisions 2 and 3 of Part XV of the SFO, or which were recorded in the register required to be kept by the Company under section 336 of the SFO:

Name of substantial shareholders	Capacity	Number of shares held	Approximate percentage of shareholding(1)
Shandong Hi-Speed Group Co. Ltd. (山東高速集團有限公司)(2)	Beneficial owner	1,364,912,087	22.68% (L)
	Interest in a controlled corporation	1,250,000,000	20.77% (L)
Shandong Rural Economic Development and Investment Company Limited* (山東省農村經濟開發投資公司)(2)	Interest in a controlled corporation	1,250,000,000	20.77% (L)

Name of substantial shareholders	Capacity	Number of shares held	Approximate percentage of shareholding[1]
Shandong International (Hong Kong) Limited[2]	Beneficial owner	1,250,000,000	20.77% (L)
China Credit Trust Co., Ltd.[3]	Interest in a controlled corporation	1,505,958,790	25.02% (L)
Harvest Fund Management Co., Ltd[3]	Interest in a controlled corporation	1,505,958,790	25.02% (L)
Harvest Global Investments Limited[3]	Interest in a controlled corporation	1,505,958,790	25.02% (L)
Harvest Alternative Investment Opportunities SPC for and on behalf of Harvest High Speed Fund SP[3]	Interest in a controlled corporation	1,505,958,790	25.02% (L)
JS High Speed Limited[3]	Beneficial owner	1,505,958,790	25.02% (L)
Central Huijin Investment Company Limited[4]	Interest in a controlled corporation	950,000,000	15.78% (L)
Bank of China Limited[4]	Interest in a controlled corporation	950,000,000	15.78% (L)
Tai Fung Bank Limited[4]	Security interest	950,000,000	15.78% (L)

Note:

(1) The calculation is based on the issued share capital of the Company of 6,019,431,109 shares as at the Latest Practicable Date. The approximate percentage of shareholding is rounded to the nearest two decimal places and such percentage may not add up to the total due to rounding.

(2) Shandong International (Hong Kong) Limited was wholly owned by Shandong Rural Economic Development and Investment Company Limited*（山東省農村經濟開發投資公司）, which was in turn wholly owned by Shandong Hi-Speed Group Co. Ltd.（山東高速集團有限公司）. Therefore, Shandong Hi-Speed Group Co. Ltd.（山東高速集團有限公司）was deemed to be interested in 1,250,000,000 shares held indirectly through Shandong Rural Economic Development and Investment Company Limited*（山東省農村經濟開發投資公司）.

(3) JS High Speed Limited was wholly owned by Harvest Alternative Investment Opportunities SPC for and on behalf of Harvest High Speed Fund SP, which was owned as to 91% by Harvest Global Investments Limited, which was in turn wholly owned by Harvest Fund Management Co., Ltd., which was owned as to 40% by China Credit Trust Co., Ltd.

(4) Tai Fung Bank Limited (as the chargee) has a security interest in the 950,000,000 shares under a charge over the shares of JS High Speed Limited (as the chargor). Tai Fung Bank Limited is owned as to 50.31% by Bank of China Limited, which in turn is owned as to 64.02% by Central Huijin Investment Company Limited. Accordingly, each of Bank of China Limited and Central Huijin Investment Company Limited is deemed to be interested in the interests held by Tai Fung Bank Limited.

(5) Pursuant to Section 336 of the SFO, shareholders are required to file a disclosure of interests form ("**disclosure of interests form**") when certain criteria are fulfilled and full details of such requirements are available on the official website of the Stock Exchange. When the shareholding of a shareholder in the Company changes, it is not necessary for the shareholder to notify the Company and Stock Exchange unless several criteria have been fulfilled, therefore the substantial shareholder's latest shareholding in the Company may be different from the shareholding filed with the Company and Stock Exchange. The above statement of substantial shareholders' interests is based on the information contained in the relevant disclosure of interests form received by the Company as at the Latest Practicable Date. The Company may not have sufficient information on the details of the relevant interests and is unable to verify the accuracy of the information in the disclosure of interests form.

(6) (L) – Long position; (S) – Short position.

* *For identification purposes only*

Save as disclosed above, as at the Latest Practicable Date, the Directors were not aware of any person (other than the Directors or chief executives of the Company) had interests or short positions which would fall to be disclosed to the Company pursuant to Divisions 2 and 3 of Part XV of the SFO, or which were recorded in the register required to be kept by the Company under section 336 of the SFO.

Save as disclosed above, as at the Latest Practicable Date, none of the Directors or a proposed Director is a director or employee of a company which had, or was deemed to have, an interest or short position in the Shares or underlying Shares which would fall to be disclosed to the Company and the Stock Exchange under the provisions of Divisions 2 and 3 of Part XV of the SFO.

3. DIRECTORS' SERVICE CONTRACTS

As at the Latest Practicable Date, none of the Directors entered or proposed to enter into any service contract with any member of the Group excluding contracts expiring or determinable by the Group within one year without payment of compensation (other than statutory compensation).

4. DIRECTORS' INTERESTS IN ASSETS AND CONTRACTS OF THE GROUP

As at the Latest Practicable Date, none of the Directors had any direct or indirect interest in any assets which have been, since 31 December 2022, the date to which the latest published audited accounts of the Group were made up, acquired or disposed of by or leased to any member of the Group, or were proposed to be acquired or disposed of by or leased to any member of the Group.

As at the Latest Practicable Date, none of the Directors was materially interested, directly or indirectly, in any contract or arrangement entered into by any member of the Group which was subsisting and which was significant in relation to the business of the Group.

5. MATERIAL CONTRACTS

The following contracts (not being contracts entered in the ordinary course of business of the Group) have been entered into by the members of the Group within two years immediately preceding the date of this circular and up to and including the Latest Practicable Date and which are, or may be, material:

(a) the finance lease agreement dated 19 November 2021 entered into between Anyang Yongge Photovoltaic Power Generation Co. Ltd.*(安陽永歌光伏發電有限公司), as lessee, and China Development Bank Financial Leasing Co., Ltd.*(國銀金融租賃股份有限公司), as lessor, for certain photovoltaic power generating equipment and ancillary facilities regarding a 100MW photovoltaic power plant located in Anyang County*(安陽縣), Henan Province, the PRC, for a total consideration of RMB650,000,000;

(b) the share purchase agreement dated 23 November 2021 entered into between Profit Plan Global Investment Limited ("**Profit Plan**") as purchaser, and CTSL Green Power Investment Limited and CTSL New Energy Investment Limited as vendors, pursuant to which, the two vendors have conditionally agreed to sell, and Profit Plan has conditionally agreed to acquire the 14,470,000,000 shares of Shandong Hi-Speed New Energy Group Limited (formerly known as Beijing Enterprises Clean Energy Group Limited) ("**SHNE**") at the aggregate consideration of HK$1,273,360,000 (the "**SP Agreement**");

(c) On 9 December 2021, Coastal Emerald Limited as issuer, the Company as guarantor, GF Global Capital Limited as subscriber and CSFG International Securities Limited as arranger entered into a subscription agreement (the "**Subscription Agreement December 2021**") pursuant to which Coastal Emerald Limited agreed to issue and GF Global Capital Limited agreed to subscribe for US$50,000,000 1.3 percent guaranteed and secured bonds due 2022;

(d) On 14 December 2021, China Shandong Hi-Speed Capital Limited as chargor, GF Global Capital Limited as chargee and GF Securities (Hong Kong) Brokerage Limited as original nominee entered into an asset debenture pursuant to which China Shandong Hi-Speed Capital Limited covenants in favour of GF Global Capital Limited that China Shandong Hi-Speed Capital Limited will upon demand pay and discharge the obligations in relation to the Subscription Agreement December 2021 as mentioned in item (c) above and no additional consideration has been provided for such asset debenture other than entering into the Subscription Agreement December 2021;

(e) On 14 December 2021, Coastal Emerald Limited as issuer, the Company as guarantor, CMB Wing Lung Bank Limited as fiscal agent, registrar, transfer agent and paying agent entered into a fiscal agency agreement (the "**Fiscal Agency Agreement December 2021**") pursuant to which Coastal Emerald Limited appointed CMB Wing Lung Bank Limited as its agent and CMB Wing Lung Bank Limited accepted its appointment as agent in respect of US$50,000,000 1.3 percent guaranteed and secured bonds due 2022;

(f) On 14 December 2021, Coastal Emerald Limited as issuer and the Company as guarantor executed a deed of covenant in favour of holders of US$50,000,000 1.3 percent guaranteed and secured bonds due 2022 and the relevant account holders (the "**Deed of Covenant December 2021**") that Coastal Emerald Limited would perform and comply with obligations expressed to be taken by it under the Fiscal Agency Agreement December 2021;

(g) On 14 December 2021, the Company executed a corporate guarantee for the benefit of the registered bondholders and relevant account holders under Deed of Covenant December 2021 pursuant to which the Company guaranteed the payment of all sums expressed to be payable by Coastal Emerald Limited in respect of US$50,000,000 1.3 percent guaranteed and secured bonds due 2022;

(h) the agreement dated 4 January 2022 entered into between Tianjin Beiqing Smart Energy Company Limited*(天津北清電力智慧能源有限公司)("**Beiqing Smart**") as lessee and Beijing Enterprises Water (China) Investment Co., Ltd*(北控水務(中國)投資有限公司)("**BEWCI**") as lessor in relation to the leasing of units 201 and 302 and four car parking spaces in BEWG Building, an office building located at Poly International Plaza T3, Zone 7, Wangjingdongyuan, Chaoyang District, Beijing, the PRC, the monthly rents of the said units 201 and 302 (inclusive of management fee and other service charges) and four car parking spaces are RMB745,187.04 and RMB2,000, respectively;

(i) the agreement dated 4 January 2022 entered into between Shandong Hi-Speed Thermal Group Company Limited* (山高熱力集團有限公司) (formerly known as BE Clean Heat Energy Company Limited* (北控清潔熱力有限公司)), an indirect non-wholly owned subsidiary of the Company, as lessee and BEWCI as lessor in relation to the leasing of unit 301 of BEWG Building, an office building located at Poly International Plaza T3, Zone 7, Wangjingdongyuan, Chaoyang District, Beijing, the PRC, the monthly rent (inclusive of management fee and other service charges) of which is RMB170,333.33;

(j) On 21 January 2022, Coastal Emerald Limited as issuer, CSFG International Securities Limited as arranger, and Shandong Hi-Speed Group Co. Ltd. (山東高速集團有限公司) entered into a subscription agreement (the "**Subscription Agreement January 2022**") pursuant to which the parties record the arrangements agreed between them in relation to an issue of US$220,000,000 floating rate bonds due 2023;

(k) On 26 January 2022, Coastal Emerald Limited as issuer, CMB Wing Lung Bank Limited as fiscal agent, registrar, transfer agent and paying agent, and Shandong Hi-Speed Group Co. Ltd. (山東高速集團有限公司) entered into a fiscal agency agreement (the "**Fiscal Agency Agreement January 2022**") pursuant to which Coastal Emerald Limited appointed CMB Wing Lung Bank Limited as its agent and CMB Wing Lung Bank Limited accepted its appointment as agent in respect of US$220,000,000 floating rate bonds due 2023;

(l) On 26 January 2022, Coastal Emerald Limited and Shandong Hi-Speed Group Co. Ltd. (山東高速集團有限公司) executed a deed of covenant in favour of holders of US$220,000,000 floating rate bonds due 2023 and the relevant account holders that Coastal Emerald Limited would perform and comply with obligations expressed to be taken by it under the Fiscal Agency Agreement January 2022;

(m) the termination agreement dated 25 February 2022 and entered into between Tianjin Fuqing Investment Co., Ltd.* (天津富清投資有限公司) ("**Tianjin Fuqing**"), Beiqing Smart, all other shareholders of Beiqing Smart, Mr. Wang Jianyu* (王建裕先生) ("**Mr. Wang Jianyu**"), Mr. Wang Jiankai* (王建凱先生) ("**Mr. Wang Jiankai**") and SEC Electric Machinery Co., Ltd.* (中電電機股份有限公司) ("**SEC Electric**"), pursuant to which the parties have mutually agreed to terminate the proposed reorganisation under the reorganisation agreement dated 24 September 2021 entered into between the parties to the said termination agreement (other than Beiqing Smart and SEC Electric) (the "**Reorganisation Agreement**"). Pursuant to the Reorganisation Agreement, (i) SEC Electric will transfer all of its assets and liabilities, other than the assets it retained, to the Wuxi SEC Electric Technology Co., Ltd.* (無錫中電電機科技有限公司) ("**Disposed SEC Electric Subsidiary**"), and will use 60% of the equity interests of the Disposed SEC Electric Subsidiary to exchange for 3.11% of the equity interests held by Tianjin Fuqing in Beiqing Smart (the "**Asset Swap**"). Tianjin Fuqing will purchase the remaining 40% equity interests in the Disposed SEC Electric Subsidiary for cash consideration of RMB254,400,000; (ii) Tianjin Fuqing and the other shareholders of Beiqing Smart will sell the shareholding of Beiqing Smart after the Asset Swap, representing 96.89% of the equity interests in Beiqing Smart, to SEC Electric for RMB11,876,598,100, which will be satisfied by SEC Electric by way of the issuance of the ordinary shares of SEC Electric to each of Tianjin Fuqing and the other shareholders of Beiqing Smart under this reorganisation; and (iii) Mr. Wang Jianyu and Mr. Wang Jiankai, will transfer 31,304,347 existing ordinary shares of SEC Electric which held by them at the consideration of RMB12.19 per ordinary share of SEC Electric, representing the 13.31% of the equity interests in SEC Electric to Tianjin Fuqing for the aggregate consideration of approximately RMB381,600,000, which will be satisfied by Tianjin Fuqing procuring SEC Electric to transfer 60% of the equity interests in the Disposed SEC Electric Subsidiary to Mr. Wang Jianyu and Mr. Wang Jiankai or the nominee designated by Mr. Wang Jianyu and Mr. Wang Jiankai. Mr. Wang Jianyu and Mr. Wang Jiankai will also acquire the remaining 40% of the equity interests in the Disposed SEC Electric Subsidiary from Tianjin Fuqing for a cash consideration of RMB254,400,000;

(n) the termination deed dated 1 March 2022 entered into between the parties to the SP Agreement mentioned in (a) above, pursuant to which they have irrevocably agreed to terminate the SP Agreement from the date of such deed (save for the provisions relating to confidentiality which shall survive termination);

(o) the subscription agreement dated 4 March 2022 entered into between SHNE as issuer and Profit Plan as subscriber, in relation to the subscription for 48,804,039,247 shares of SHNE at the subscription price of HK$0.096 per subscription share for the total consideration of HK$4,685,187,768;

(p) the facility agreement dated 26 April 2022 entered into between the Company as borrower and China Citic Bank International Limited as lender in respect of loan facilities of up to HK$800,000,000;

(q) the syndicated loan agreement dated 13 May 2022 entered into between the Company as borrower and Shanghai Pudong Development Bank Co., Ltd., acting through its Hong Kong branch, as arranger, lender and agent in respect of loan facilities of up to HK$2,800,000,000;

(r) the facility agreement dated 8 June 2022 entered into between the Company as borrower and Shanghai Pudong Development Bank Co., Ltd., acting through its Hong Kong branch, as lender in respect of loan facilities of up to US$200,000,000;

(s) the subscription agreement dated 9 June 2022 entered into between the Coastal Emerald Limited, an indirect wholly owned subsidiary of the Company, as borrower and the Joint Global Coordinators issued 4.10% bonds with a principal amount of US$500,000,000 to independent third parties;

(t) the facility agreement dated 26 October 2022 entered into between the Company as borrower and Huaxia Bank Co., Limited Hong Kong branch as lender in respect of loan facilities of up to US$40,000,000;

(u) the facility agreement dated 26 October 2022 entered into between the Company as borrower and Huaxia Bank Co., Limited Hong Kong branch as lender in respect of loan facilities of up to US$100,000,000;

(v) the syndicated loan agreement dated 30 November 2022 entered into between the Company as borrower and Shanghai Pudong Development Bank Co., Ltd., acting through its Hong Kong branch, as arranger, lender and agent in respect of loan facilities of up to HK$2,800,000,000;

(w) the equity transfer agreement dated 20 December 2022 entered into between China Power Construction Henan Electric Power Co., Ltd.*(中電建河南電力有限公司)("**Vendor-1A**") and Qingdian Green Energy Co., Ltd.*(清電綠色能源有限公司)("**Vendor-1B**") as vendors and Tianjin Fuyi Enterprise Management Consulting Co., Ltd.*(天津富驛企業管理諮詢有限公司 (the "**Tianjin Fuyi**") as purchaser in relation to the sale and purchase of 80% and 20% of the equity interest in Shangqiu Ningdian New Energy Co., Ltd.*(商丘寧電新能源有限公司) from Vendor-1A to Tianjin Fuyi and from Vendor-1B to Tianjin Fuyi, respectively, at the aggregate consideration of RMB143,567,600;

(x) the two equity transfer agreements both dated 20 December 2022 both entered into between Henan Qingdian New Energy Co., Ltd.*(河南清電新能源有限公司)("**Vendor-2**") as vendor and Tianjin Fuyi as purchaser in relation to (i) the sale and purchase of entire equity interest in Lankao Gold Wind Power New Energy Co., Ltd.*(蘭考金風清電新能源有限公司) from Vendor-2 to Tianjin Fuyi at the consideration of RMB55,928,800; and (ii) the sale and purchase of entire equity interest in Shenqiu Yingdian New Energy Co., Ltd.*(沈丘潁電新能源有限公司) from Vendor-2 to Tianjin Fuyi at the consideration of RMB43,226,300, respectively;

(y) the facility agreement dated 30 December 2022 entered into between the Company as borrower and Tai Fung Bank Limited as lender in respect of loan facilities of up to HK$600,000,000;

(z) the syndicated loan agreement dated 11 January 2023 entered into between the Company as borrower and Ping An Bank Co., Limited as arranger, lender and agent in respect of loan facilities of up to US$283,690,000;

(aa) the facility agreement dated 24 February 2023 entered into between the Company as borrower and China Zheshang Bank Co., Ltd. (Hong Kong) branch as lender in respect of loan facilities of up to US$220,000,000;

(bb) the facility agreement dated 30 May 2023 entered into between the Company as borrower and China Citic Bank International Limited as lender in respect of loan facilities of up to HK$800,000,000;

(cc) the syndicated loan agreement dated 11 October 2023 entered into between the Company as borrower and Ping An Bank Co., Limited as arranger, lender and agent in respect of loan facilities of up to US$483,690,000;

(dd) the capital increase agreement dated 24 October 2023 entered into between Beiqing Smart, Shandong Hi-Speed Group Co. Ltd., SHNE, Ningbo Meishan Bonded Port Zone Chuangze Equity Investment Partnership (Limited Partnership)*(寧波梅山保稅港區創澤股權投資合夥企業(有限合夥))("**Ningbo Meishan**") and Tianjin Clean Energy Investment Company Limited*(天津富歡企業管理諮詢有限公司)("**Tianjin Clean Energy**"), pursuant to which the Ningbo Meishan has conditionally agreed to make cash contribution of RMB5,000,000,000 (equivalent to approximately HK$5,450,000,000) to Tianjin Clean Energy, of which RMB3,441,580,300 and RMB1,558,419,700 are to increase its registered capital and capital reserve respectively; and

(ee) the Investment Agreement, the Investor Rights Agreement and the Voting and Consortium Agreement.

6. LITIGATION

The Group was engaged in the following litigation or claims of material importance as at the Latest Practicable Date:

(a) Recovery of loans receivables under the loans to Honesta New Finance

Shangao International Finance Leasing (Shenzhen) Co., Ltd.*(山高國際融資租賃(深圳)有限公司) ("**Shangao International Leasing**") provided three loans to Shenzhen Honesta New Finance Holding Limited*(深圳厚生新金融控股有限公司) ("**Honesta New Finance**"), each of which has a loan principal of RMB100,000,000, a loan period of 18 months and an annual interest rate of 7.5% payable semi-annually. The three loans were drawn down on 13 April 2018, 18 May 2018, and 21 August 2018, respectively (the "**First Honesta Loan**", "**Second Honesta Loan**" and "**Third Honesta Loan**", respectively and collectively, the "**Loans to Honesta**"). The outstanding loans receivable due from Honesta New Finance amounted to approximately RMB389,184,000 (equivalent to approximately HK$476,521,000) at the Latest Practicable Date.

Before the Group's disposal of the entire issued shares in Coastal Silk Limited on 7 April 2021 (the "**Disposal**"), Honesta New Finance was a subsidiary of the Company and the Loans to Honesta were therefore regarded as intercompany transactions within the Group. As the Loans to Honesta became loan receivables due from Honesta New Finance to the Group after the Disposal, on the same date as the completion of the Disposal, the Group:

(i) entered into a receivable charge agreement (the "**Receivable Charge Agreement**") with Honesta New Finance for the creation by Honesta New Finance of first ranking charges in favour of the Group over, among others, all Honesta New Finance's rights, title and interests arising from certain of its loan receivables as security for Honesta New Finance's repayment obligations under the Loans to Honesta; and

(ii) entered into the guarantee agreement with a total of nine guarantors (the "**Honesta's Guarantors**"), pursuant to which the Honesta's Guarantors agreed to bear irrevocable joint and several liabilities (連帶責任保證) for the repayment obligations of Honesta New Finance under the Loans to Honesta.

In this regard, Shangao International Leasing

(i) filed an arbitration application with the Shenzhen Court of International Arbitration (深圳國際仲裁院) for the First Honesta Loan against Honesta New Finance on 22 July 2021 and initiated civil litigation proceedings in the Shenzhen Intermediate People's Court (深圳市中級人民法院) for the Second Honesta Loan and the Third Honesta Loan against Honesta New Finance and all Honesta's Guarantors on 23 July 2021 for the recovery of, among others, the outstanding principal, interests and liquidated damages receivable under the Loans to Honesta; and

(ii) initiated civil litigation proceedings in the Shenzhen Intermediate People's Court (深圳市中級人民法院) against Honesta New Finance on 23 July 2021 for the claim of its rights of priority compensation (優先受償權) to certain loan receivables of Honesta New Finance by virtue of the Receivable Charge Agreement.

Details of the claims are disclosed in the announcements of the Company dated 7 April 2021 and 23 July 2021.

In relation to the arbitration application for the First Honesta Loan, Shenzhen Court of International Arbitration has issued arbitration award on 17 August 2022 in support of all the claims of the Group. Shenzhen Qianhai Cooperation Zone People's Court（深圳前海合作區人民法院）has issued execution order against Honesta New Finance on 9 April 2023 to conduct enforcement on Honesta New Finance. With regard to the civil litigation proceedings for the Second Honesta Loan and the Third Honesta Loan, the Court of First Instance has issued judgement for the Second Honesta Loan and the Third Honesta Loan in support of all the claims of the Group. After that, Honesta New Finance filed an appeal on the loans judgement, and the Court of Second Instance has heard the case on 15 June 2023, pending the final judgement.

On 8 June 2023, Shenzhen Qianhai Cooperation Zone People's Court has filed a case on a dispute concerning damaging company's interest liability initiated by Honesta New Finance against the Company and several employees, and made judgement on 8 September 2023, which rejected all claims from the plaintiff, Honesta New Finance. After that, Honesta New Finance filed an appeal on such case, and the Court of Second Instance has not filed such case yet.

(b) Recovery of receivables under the Notes

The Group entered into a subscription agreement in June 2020 for the subscription of senior secured and guaranteed notes in the aggregate principal amount of US$100,000,000 (equivalent to approximately HK$780,000,000) (the "**Notes**"), which were classified as financial assets at FVTOCI. The due and punctual performance and observance by the issuer (the "**Notes Issuer**") of its obligations under the Notes are secured by corporate and individual guarantees (together the "**Corporate and Individual Guarantees**") and other securities, including equity interest pledge (the "**Equity Interest Pledge**"), share charge and pledge over asset-backed securities. The Notes Issuer was unable to redeem all of the Notes on the maturity date at the applicable redemption amounts pursuant to the terms of the Notes, which constituted an event of default under the Notes. The Group has taken relevant legal measures to claim the principal amount and interest outstanding on the Notes, including but not limited to:

(i) filing a civil lawsuit in Hong Kong on 25 August 2021 against the Notes Issuer; and

(ii) filing civil lawsuit application(s) on 23 August 2021 against the respective guarantors under the Corporate and Individual Guarantees and the pledgor under the Equity Interest Pledge in Nanjing Intermediate People's Court*（南京市中級人民法院）.

Details of the above are set out in the Company's announcements dated 12 June 2020 and 25 August 2021.

In relation to (i), on 15 October 2021, the Group filed an application for summary judgment by way of summons in Hong Kong, the final hearing of which was held on 24 February 2022. On 24 February 2022, the High Court of Hong Kong adjudged that, among others, the Notes Issuer shall pay the Group the sum of US$103,750,000 with interest at 25% per annum thereon from 16 June 2020 until 24 February 2022 in the sum of US$40,917,153.886 and at judgment rate thereafter. The Company is in the process of obtaining legal advice from PRC counsels on the enforcement of the relevant securities located in the PRC and will subsequently commence the enforcement procedure based on the advice from the PRC counsels and in accordance with the applicable PRC Laws.

(c) Recovery of investment in Altair Asia

The Group invested in Altair Asia Investment Limited ("**Altair Asia**") with a guaranteed return of 15% internal rate of return per annum. Pursuant to the terms of the subscriptions of Altair Asia, the Group has issued a written notice to Altair Asia on 4 January 2018 requesting the redemption of the entire participating shares of cost of investment in value of HK$200,000,000 and subsequently on 23 January 2018 agreed to waive its rights to request for early redemption of part of the participating shares of HK$140,000,000 on the ground of certain cumulative conditions being met within the prescribed time. Since the conditions of waiver were not fully satisfied and Altair Asia failed to redeem all the participating shares pursuant to the subscription terms, the Group commenced legal proceedings in the High Court of Hong Kong against Altair Asia's two guarantors, including (1) a winding-up petition against China Silver Asset Management (Hong Kong) Limited ("**CSAMHK**"); and (2) a bankruptcy petition against Frank Dominick; and a winding-up petition against Altair Asia in the Grant Court of the Cayman Islands (the "**Cayman Court**") for the recovery of the investment.

On 11 March 2020, the High Court of Hong Kong handed down its decision ordering, among others, that (1) CSAMHK be wound up; and (2) the bankruptcy petition against Frank Dominick be adjourned. On 19 March 2020, CSAMHK lodged its notice of appeal to appeal against the said decision. The date of the appeal hearing is yet to be fixed.

On 4 November 2020, the Group presented another creditor's winding up petition against Altair Asia in the Cayman Court.

On 7 December 2020, the Honourable Justice made a winding up order against Altair Asia and appointed joint and several liquidators. The Group has claims against Altair Asia in the approximate sum of US$17,494,271.36 (equivalent to approximately HK$135,624,000) plus interest and cost arising out of the redemption of shares in Altair Asia.

On 1 October 2021, the Group presented another creditor's winding up petition against China Silver Asset Management Limited in the Cayman Court. On 9 December 2021, the Honourable Justice made a winding up order against China Silver Asset Management Limited and appointed joint and several liquidators.

On 16 February 2021, Altair Asia (in Official Liquidation) presented a creditor's winding up petition against CS Asia in the Cayman Court in relation to a debt owed by CS Asia to Altair Asia. On 26 April 2022, the Honourable Justice dismissed the winding up petition against CS Asia pending the result of the legal proceeding between CS Asia and Global Prime Partners Limited at the High Court of England and Wales.

(d) Claim under Hong Kong Leasing Sale and Purchase Agreement

As disclosed in the annual report of the Company for the year ended 31 December 2020, pursuant to a share purchase agreement entered into by Shinning Seas Limited ("**Shinning Seas**"), a wholly owned subsidiary of the Company, the Company, China Hover Dragon Group Limited ("**China Hover Dragon**"), Mr. Gao Chuanyi ("**Mr. Gao**"), Ms. Wang Zi Yi ("**Ms. Wang**") and Mr. Ji Kewei ("**Mr. Ji**") dated 8 April 2015 and as varied by a supplemental agreement dated 29 July 2015 (together, the "**Hong Kong Leasing Sale and Purchase Agreement**"), Shinning Seas has agreed to buy and China Hover Dragon and Mr. Gao (collectively as the "**Vendors in Hong Kong Leasing Sale and Purchase Agreement**") have agreed to sell the entire issued share capital of China Shandong Hi-Speed Hong Kong Leasing Limited (formerly known as Hong Kong Leasing Limited) ("**Hong Kong Leasing**") at a consideration of approximately HK$1,581,945,000. The acquisition was completed on 1 September 2015. The consideration was settled by way of allotment and issue of 2,361,112,121 shares of the Company (equivalent to an aggregate amount of approximately HK$1,581,945,000 based on the closing price on 1 September 2015 of HK$0.67 per share as quoted on the Stock Exchange). There was an arrangement of profits guarantee from the Vendors in Hong Kong Leasing Sale and Purchase Agreement that if the audited net profits after tax of the relevant year of Hong Kong Leasing is less than the guaranteed amounts, the base consideration for the acquisition shall be reduced by way of repurchase by the Company of part of the consideration shares.

The profit guarantee was met and there was no adjustment for the period from 1 September 2015 to 31 August 2016. For the period from 1 September 2016 to 31 August 2017, the audited net profits after tax as shown in audited consolidated accounts for the period from 1 September 2016 to 31 August 2017 of the Hong Kong Leasing was less than HK$200,000,000, the Vendors in Hong Kong Leasing Sale and Purchase Agreement were obligated to sell 1,213,939,394 consideration shares ("**Profit Guarantee Shares**"), as calculated using the formula as stipulated in the Hong Kong Leasing Share and Purchase Agreement, to the Company at nil consideration.

A stop notice had been served by the Company on 16 March 2018 pursuant to the Rules of High Court to stop the transfer of 1,951,714,383 ordinary shares of the Company (including the Profit Guarantee Shares and the bad debt repurchase shares held by the shareholders of China Hover Dragon) ("**Subject Shares**"), and payment of dividend. Shinning Seas (as 1st Plaintiff) and the Company (as 2nd Plaintiff) has commenced an action in the High Court of Hong Kong on 31 July 2018 against China Hover Dragon (as 1st Defendant), Mr. Gao (as 2nd Defendant), Chinanet Consultancy Limited ("**Chinanet**", a shareholder of China Hover Dragon) (as 3rd Defendant), Ms. Wang (as 4th Defendant) and Mr. Ji (as 5th Defendant) for, among others, the release of and deliver up of possession of the shares certificates for the Subject Shares.

After the service of the said writ on China Hover Dragon, Chinanet, Ms. Wang and Mr. Ji, a defence and counterclaim was filed by China Hover Dragon, Chinanet, Ms. Wang and Mr. Ji against Shinning Seas and the Company in December 2018. In April 2019, China Hover Dragon, Chinanet, Ms. Wang and Mr. Ji served a counterclaim against Mr. Yau Wai Lung, a former executive director of the Company, as 3rd defendant by counterclaim. After service of a concurrent writ of summons out of jurisdiction on Mr. Gao, Mr. Gao had filed a defence and counterclaim in November 2019. Upon application, the High Court of Hong Kong granted leave on 13 March 2020 for the five defendants to file and serve a consolidated defence and counterclaim, and for the plaintiffs and the 3rd defendant by counterclaim to file and serve their reply and defence to the defendants' consolidated defence and counterclaim.

On 13 January 2021, an amended writ of summons was filed adding Shangao Financial Leasing (Beijing) Co., Ltd.*（山高融資租賃(北京)有限公司）as the 3rd Plaintiff. On 9 April 2021, the five defendants filed defendants' amended consolidated defence and counterclaim. On 9 July 2021, an amended reply and defence to the defendants' amended consolidated defence and counterclaim was filed.

The repurchase of the Profit Guarantee Shares and the bad debt repurchase Shares were under legal proceedings as at the Latest Practicable Date.

(e) Claim under a finance lease arrangement

A finance lease arrangement (the "**Yunan Highway Finance Lease**") was entered into in July 2013 (as supplemented in December 2013) by, among others, (i) Shangao International Leasing, an indirect wholly-owned subsidiary of the Company, as lessor; and (ii) China Yunnan Highway Construction Group Company Limited.*（中國雲南路建集團股份公司）(the "**Yunan Highway**") as lessee.

The Group has been continuously assessing the credit risks of Yunan Highway since its's default in repayment of lease payables under the Yunan Highway Finance Lease in March 2018. The Group's continuous measures included but not limited to the conducting of site visits and communicating with the ultimate beneficial owners, auditors and debtors of the Yunan Highway to keep abreast of the status and progress of Yunan Highway's business, financial liquidity, financial audits and bankruptcy reorganization.

Pursuant to the Group's business and financial investigation, it became clear in the end of 2020 that the credit risks of Yunan Highway had reached a level of significance where substantial impairment of the loan receivables should be made. In assessing the credit risk of Yunan Highway and determining the need and extent of impairment of finance lease receivables under the Yunan Highway Finance Lease for the year ended 31 December 2020, the Group had primarily taken into account the following factors, events and circumstances at that material time:

(i) The Group had not received any repayment from Yunan Highway under the Yunan Highway Finance Lease since March 2018;

(ii) The Group's investigation revealed that Yunan Highway and its major operating subsidiaries had ceased their respective business operations, and that Yunan Highway was significantly insolvent (that its total liability exceeded its total assets under its financial statements by a significant degree);

(iii) According to public records as at 23 October 2020, (i) there were 204 records of enforcement of judgement against Yunan Highway; and (ii) there were 112 cases of unsuccessful enforcement of judgements against Yunan Highway due to lack of enforceable assets (終本案件), involving unfulfilled monetary obligations of approximately RMB292,462,100; and

(iv) The net realisable value of the Yunan Highway Leased Assets was unascertainable as the Group's investigation revealed that a significant portion of them may have become obsolete or untraceable. For the reasons stated above, the Group regarded that the credit risk of Yunan Highway was high and therefore decided that an impairment of HK$137,302,479.73 for the Yunan Highway Finance Lease should be made for the year ended 31 December 2020. As at 31 December 2020, all loan receivables under the Yunan Highway Finance Lease had been fully impaired. It is the view of the Directors that the factors set out above which formed the primary foundation of the impairment could not have been anticipated by the Group when the agreement of Yunan Highway Finance Lease was entered into back on 26 July 2013 which was more than 6 years before the relevant impairment was made.

As disclosed in the announcement of the Company dated 30 December 2020, the Group has sought legal advice, has been conducting site visits and communicating with the ultimate beneficial owners, auditors and debtors of the Yunan Highway to keep abreast of the status and progress of Yunan Highway's business, financial liquidity, financial audits and bankruptcy reorganization.

The Group has commenced relevant legal proceedings against Yunan Highway and the personal guarantors and corporate guarantors of the Yunan Highway Finance Lease in a view to recover the outstanding lease receivables. On 19 October 2022, Kunming Intermediate People's Court (昆明市中級人民法院) ruled to approve the reorganization plan of Yunan Highway and terminate reorganization proceedings. On 20 February 2023, Guangdong Higher People's Court (廣東省高級人民法院) has made final judgement on the case initiated by the Company against Yunan Highway and its guarantors. The final judgement supported the claims of the Company in relation to the termination of lease contract and the payment of all outstanding rental and liquidated damages by Yunan Highway, and rejected the claim of the Company to retrieve rental equipment.

Save as disclosed above, as at the Latest Practicable Date, so far as the Directors are aware, the Group was not engaged in any material litigation or arbitration proceedings nor is any material litigation or claim pending or threatened against it.

7. EXPERTS AND CONSENTS

(a) Qualification of Expert

Set out below are the qualifications of the expert(s) who have given opinions or advice contained in this circular:

Name	Qualification
Crowe (HK) CPA Limited ("**Crowe**")	Certified Public Accountants
Global Law Office (環球律師事務所)	Legal advisers as to PRC Laws

(b) Interests of Expert

As at the Latest Practicable Date, the above experts (a) did not have any shareholding, directly or indirectly, in any member of the Group or any right (whether legally enforceable or not) to subscribe for or to nominate persons to subscribe for securities in any member of the Group and (b) did not have any direct or indirect interest in any assets which have been acquired, or disposed of by, or leased to any member of the Group, or were proposed to be acquired, or disposed of by, or leased to any member of the Group since 31 December 2022, being the date to which the latest published audited consolidated financial statements of the Group were made up.

(c) Consent

Each of Crowe and the PRC Legal Advisers has given and not withdrawn its written consent to the publication of this circular with the inclusion of its report and/or opinion and all references to its name in the form and context in which they are included.

8. DIRECTORS' INTERESTS IN COMPETING BUSINESSES

As at the Latest Practicable Date, so far as is known to the Directors, none of the Directors or their respective associates had any business or interest in any business which competes or is likely to compete, either directly or indirectly, with the business of the Group.

9. GENERAL

(a) The registered office of the Company is at Clarendon House, 2 Church Street, Hamilton HM11, Bermuda.

(b) The principal place of business in Hong Kong of the Company is at 38th Floor, The Centre, 99 Queen's Road Central, Central, Hong Kong.

(c) The share registrar and transfer office in Bermuda of the Company is MUFG Fund Services (Bermuda) Limited at 4th floor North Cedar House, 41 Cedar Avenue, Hamilton HM 12, Bermuda and the share registrar and transfer office in Hong Kong of the Company is Computershare Hong Kong Investor Services Limited at Shops 1712-1716, 17th Floor, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong.

(d) The joint company secretaries of the Company are Ms. Du Ning (杜凝), who is an associate member of both the Hong Kong Chartered Governance Institute and the Chartered Governance Institute in the United Kingdom, and Ms. Chen Chun (陳淳), who is a Chartered Secretary, a Chartered Governance Professional and a fellow member of both the Hong Kong Chartered Governance Institute and the Chartered Governance Institute in the United Kingdom.

(e) In the event of any inconsistency, the English version of this circular shall prevail over the Chinese version.

10. DOCUMENTS ON DISPLAY

The following documents are available on the website of the Stock Exchange (www.hkex.com.hk) and the website of the Company (www.sdhg.com.hk) for a period of 14 days from the date of this circular:

(a) the Investment Agreement, the Investor Rights Agreement and the Voting and Consortium Agreement;

(b) the report on the unaudited pro-forma financial information of the Group, the text of which is set out in Appendix IV of this circular; and

(c) the written consent referred to in the section headed "Experts and Consents" of this Appendix.

山高控股集團有限公司
SHANDONG HI-SPEED HOLDINGS GROUP LIMITED

(incorporated in Bermuda with limited liability)

(Stock Code: 412)

NOTICE OF SPECIAL GENERAL MEETING

NOTICE IS HEREBY GIVEN that the special general meeting (the "**SGM**") of Shandong Hi-Speed Holdings Group Limited (the "**Company**") will be held at Conference Room, 38/F, The Center, 99 Queen's Road Central, Central, Hong Kong on Wednesday, 27 December 2023 at 11:00 a.m. for the purpose of considering and, if thought fit, passing the following resolution with or without amendments as an ordinary resolution of the Company:

ORDINARY RESOLUTION

1. "**THAT**:

   (a) the investment agreement dated 16 November 2023 (the "**Investment Agreement**") entered into between Success Flow International Investment Limited and Choice Faith Group Holdings Limited (each a direct wholly-owned subsidiary of the Company) as investors and VNET Group, Inc. as issuer in relation to the subscription of a total of 650,424,192 new class A ordinary shares in VNET Group, Inc. at the aggregate consideration of US$299,000,000, and the transactions contemplated thereunder be and are hereby approved, confirmed and ratified; and

   (b) the authorisation to any one of the directors of the Company (the "**Director(s)**"), or any other person authorised by the board of Director(s) (the "**Board**") from time to time, for and on behalf of the Company, among other matters, to sign, seal, execute, perfect, perform and deliver all such agreements, instruments, documents and deeds, and to do all such acts, matters and things and take all such steps as he or she or they may in his or her or their absolute discretion consider to be necessary, expedient, desirable or appropriate to give effect to and implement the Investment Agreement and the transactions contemplated thereunder and all matters incidental to, ancillary to or in connection thereto, including agreeing and making any modifications, amendments, waivers, variations or extensions of the Investment Agreement or the transactions contemplated thereunder be and are hereby approved, ratified and confirmed."

By Order of the Board
Shandong Hi-Speed Holdings Group Limited
Wang Xiaodong
Chairman

Hong Kong, 11 December 2023

Notes:

(1) A member of the Company entitled to attend and vote at the meeting convened by the above notice is entitled to appoint proxy or proxies to attend and vote in his stead. A proxy need not be a member of the Company. In order to be valid, the form of proxy must be deposited with the branch share registrar of the Company in Hong Kong, Computershare Hong Kong Investor Services Limited at 17M Floor, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong together with a power of attorney or other authority, if any, under which it is signed or a notarially certified copy of that power or authority, no less than 48 hours before the time appointed for holding the meeting or any adjourned meeting thereof.

(2) In case of joint holders of a share in the capital of the Company, any one of such holders may vote at the meeting either personally or by proxy in respect of such share as if he was solely entitled thereto. However, if more than one of such joint holders are present at the meeting personally or by proxy, that one of such holders whose name stands first in the register of members of the Company shall alone be entitled to vote in respect of that share.

(3) Completion and return of the form of proxy will not preclude you from attending and voting in person at the meeting or at any adjourned meeting thereof (as the case may be) should you so wish, and in such an event, the form of proxy shall be deemed to be revoked.

(4) The register of members will be closed on Wednesday, 27 December 2023, during the day no transfer of Shares will be registered. In order to determine the entitlement to attend and vote at the SGM, all transfer of Shares, accompanied by the relevant share certificates and transfer forms, must be lodged with the Company's branch share registrar in Hong Kong, Computershare Hong Kong Investor Services Limited, at Shops 1712-1716, 17/F, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong, for registration not later than 4:30 p.m. on Friday, 22 December 2023.

(5) Save for resolutions approving the procedural and administrative matters, any voting of the meeting shall be taken by poll.

(6) If Typhoon Signal No. 8 or above is expected to be hoisted or a Black Rainstorm Warning Signal is expected to be in force any time after 7:30 a.m. on the date of the meeting, then the meeting will be postponed. The Company will post an announcement on the website of the Company at (www.sdhg.com.hk) and HKEXnews website (www.hkexnews.hk) to notify shareholders of the date, time and place of the rescheduled meeting.

The meeting will be held as scheduled when an Amber or a Red Rainstorm Warning Signal is in force. Shareholders should decide on their own whether they would attend the meeting under bad weather condition bearing in mind their own situations.

As at the date of this notice, the Board comprises Mr. Wang Xiaodong, Mr. Zhu Jianbiao, Ms. Liao Jianrong, Mr. Liu Zhijie and Mr. Liu Yao as executive Directors; Mr. Liang Zhanhai, Mr. Chen Di and Mr. Wang Wenbo as non-executive Directors; and Mr. Guan Huanfei, Mr. Chan Wai Hei, Mr. Tan Yuexin and Mr. Jonathan Jun Yan as independent non-executive Directors.