

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 20-F**

(Mark One)

☐ REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2019.

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

☐ SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Date of event requiring this shell company report

For the transition period from to

Commission file number: 001-35126

21Vianet Group, Inc.

(Exact name of Registrant as specified in its charter)

N/A

(Translation of Registrant's name into English)

Cayman Islands

(Jurisdiction of incorporation or organization)

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Chaoyang District
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The People's Republic of China

(Address of principal executive offices)

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(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of exchange on which registered
American depositary shares, each representing six Class A ordinary shares, par value US\$0.00001 per share	VNET	NASDAQ Global Select Market
Class A ordinary shares, par value US\$0.00001 per share*		

* Not for trading, but only in connection with the listing on the Nasdaq Global Select Market of the American depositary shares

Securities registered or to be registered pursuant to Section 12(g) of the Act:

None

(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

None

(Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

505,253,850 Class A ordinary shares issued and outstanding and excluding treasury shares, and 174,649,638 Class B ordinary shares and 60,000 Class C ordinary shares, par value US\$0.00001 per share, as of December 31, 2019.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☐ No ☒

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes ☐ No ☒

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐

Accelerated filer ☒

Non-accelerated filer ☐

Emerging growth company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards[†] provided pursuant to Section 13(a) of the Exchange Act. ☐

[†]The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

US GAAP ☒

International Financial Reporting Standards as issued by the International Accounting Standards Board ☐

Other ☐

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ No ☒

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court.

Yes ☐ No ☐

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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;
- “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, and WiFire Network Technology (Beijing) Co., Ltd. (previously known as aBitcool Small Micro Network Technology (BJ) Co., Ltd.), or WiFire Network, three 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 three 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 RMB6.9618 to US\$1.00, the exchange rate on December 31, 2019 as set forth in the H.10 statistical release published by the Federal Reserve Board.

FORWARD-LOOKING STATEMENTS

This annual report on Form 20-F contains forward-looking statements that involve risks and uncertainties. All statements other than statements of historical facts are forward-looking statements. These forward-looking statements are made under the “safe harbor” provisions of the U.S. Private Securities Litigation Reform Act of 1995. Known and unknown risks, uncertainties and other factors, including those listed under “Risk Factors,” may cause our actual results, performance or achievements to be materially different from those expressed or implied by the forward-looking statements.

You can identify some of these forward-looking statements by words or phrases such as “may,” “will,” “expect,” “anticipate,” “aim,” “estimate,” “intend,” “plan,” “believe,” “is/are likely to,” “potential,” “continue” or other similar expressions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. These forward-looking statements include:

- our goals and strategies and our expansion plans;
- our future business development, financial condition and results of operations;
- the expected growth of the data center and cloud services market;

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- our expectations regarding demand for, and market acceptance of, our services;
- our expectations regarding keeping and strengthening our relationships with customers;
- our plans to invest in research and development to enhance and complement our existing solution and service offerings;
- international trade policies, protectionist policies and other policies that could place restrictions on economic and commercial activity; and
- general economic and business conditions in the regions where we provide our solutions and services.

These forward-looking statements involve various risks and uncertainties. Although we believe that our expectations expressed in these forward-looking statements are reasonable, our expectations may later be found to be incorrect. Our actual results could be materially different from our expectations. Other sections of this annual report include additional factors that could adversely impact our business and financial performance. Moreover, we operate in an evolving environment. New risk factors and uncertainties emerge from time to time and it is not possible for our management to predict all risk factors and uncertainties, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. You should read thoroughly this annual report and the documents that we refer to with the understanding that our actual future results may be materially different from and worse than what we expect. We qualify all of our forward-looking statements by these cautionary statements.

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PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. Selected Financial Data

Selected Consolidated Financial Data

The following selected consolidated financial information for the periods and as of the dates indicated should be read in conjunction with our consolidated financial statements and related notes and "Item 5. Operating and Financial Review and Prospects" in this annual report.

Our selected consolidated financial data presented below for the years ended December 31, 2017, 2018 and 2019 and our balance sheet data as of December 31, 2018 and 2019 have been derived from our audited consolidated financial statements included elsewhere in this annual report. Our audited consolidated financial statements are prepared in accordance with U.S. GAAP.

Our selected consolidated financial data presented below for the year ended December 31, 2015 and 2016 and our balance sheet data as of December 31, 2015, 2016 and 2017 have been derived from our audited financial statements not included in this annual report.

Starting in 2016, we began reporting our operating results in two operating segments, namely hosting and related services and managed network services. Content delivery network services, or CDN services, which were previously offered as part of our hosting and related services business segment, were moved to the managed network services business segment in the fourth quarter of 2016. Our consolidated statements of operations for the years ended December 31, 2015 and 2016 as presented in this annual report were modified to reflect this change in segment reporting for consistency purposes.

In September 2017, we completed the disposal of our managed network services business segment, including CDN services, hosting area network services, route optimization and last-mile broadband businesses, and deconsolidated the financial results related to the managed network services business segment in our consolidated statements of operations starting from the fourth quarter of 2017.

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	For the Years Ended December 31,					
	2015	2016	2017	2018	2019	
	RMB	RMB	RMB	RMB	RMB	US\$
	(in thousands, except share and per share data)					
Consolidated Statement of Operations Data:						
Net revenues:						
Hosting and related services	2,369,223	2,668,655	2,975,178	3,401,037	3,788,967	544,251
Managed network services	1,265,149	973,119	417,527	—	—	—
Total net revenues	3,634,372	3,641,774	3,392,705	3,401,037	3,788,967	544,251
Cost of revenues ⁽¹⁾	(2,780,614)	(2,929,638)	(2,634,295)	(2,456,166)	(2,849,518)	(409,308)
Gross profit	853,758	712,136	758,410	944,871	939,449	134,943
Operating (expenses) income:						
Sales and marketing expenses ⁽¹⁾	(359,460)	(352,926)	(256,682)	(172,176)	(206,309)	(29,634)
Research and development expenses ⁽¹⁾	(142,835)	(149,337)	(149,143)	(92,109)	(88,792)	(12,754)
General and administrative expenses ⁽¹⁾	(568,741)	(639,648)	(519,950)	(462,637)	(415,277)	(59,651)
(Allowance)/reversal for doubtful debt	(32,199)	(117,564)	(37,427)	598	(1,557)	(224)
Changes in the fair value of contingent purchase consideration payable	(43,325)	93,307	(937)	13,905	—	—
Impairment of long-lived assets	—	(392,947)	(401,808)	—	—	—
Impairment of goodwill	—	—	(766,440)	—	—	—
Impairment of receivables from equity investees	—	—	—	—	(52,142)	(7,490)
Other operating income	8,569	6,783	5,439	5,027	6,862	986
Operating (loss) profit	(284,233)	(840,196)	(1,368,538)	237,479	182,234	26,176
Net loss	(401,275)	(931,922)	(917,644)	(186,736)	(181,246)	(26,033)
Net (income) loss attributable to non-controlling interest	(26,824)	298,324	144,914	(18,329)	(1,046)	(150)
Net loss attributable to Company's ordinary shareholders	(428,099)	(633,598)	(772,730)	(205,065)	(182,292)	(26,183)
Loss per share:						
Basic	(0.85)	(1.37)	(1.36)	(0.30)	(0.27)	(0.04)
Diluted	(0.85)	(1.37)	(1.36)	(0.30)	(0.27)	(0.04)
Loss per ADS:						
Basic	(5.10)	(8.22)	(8.16)	(1.80)	(1.62)	(0.24)
Diluted	(5.10)	(8.22)	(8.16)	(1.80)	(1.62)	(0.24)
Shares used in loss per share computation:						
Basic	492,065,239	617,169,833	672,836,226	674,732,130	668,833,756	668,833,756
Diluted	492,065,239	617,169,833	672,836,226	674,732,130	668,833,756	668,833,756

(1) Share-based compensation was included in the related operating expense categories as follows:

	For the Years Ended December 31,					
	2015	2016	2017	2018	2019	
	RMB	RMB	RMB	RMB	RMB	US\$
	(in thousands)					
Allocation of share-based compensation expenses:						
Cost of revenues	12,422	(4,110)	(277)	2,668	1,884	271
Sales and marketing expenses	13,488	2,490	(681)	2,139	354	51
Research and development expenses	10,303	(2,924)	142	1,385	1,177	169
General and administrative expenses	153,814	123,273	47,945	53,346	40,501	5,817
Total share-based compensation expenses	190,027	118,729	47,129	59,538	43,916	6,308

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	As of December 31,					
	2015	2016	2017	2018	2019	
	RMB	RMB	RMB	RMB	RMB	US\$
	(in thousands)					
Consolidated Balance Sheet Data:						
Cash and cash equivalents	1,685,054	1,297,418	1,949,631	2,358,556	1,808,483	259,772
Restricted cash (current asset)	195,230	1,963,561	242,494	265,214	478,873	68,786
Short-term investments	102,300	277,946	548,890	245,014	363,856	52,265
Accounts and notes receivable, net	694,108	655,459	455,811	524,305	657,158	94,395
Total current assets	3,437,921	5,158,561	4,245,542	4,678,109	5,228,184	750,982
Restricted cash (non-current asset)	128,515	33,544	3,344	37,251	69,821	10,029
Total assets	10,847,710	12,421,524	9,908,161	11,150,717	14,273,706	2,050,289
Total current liabilities	2,821,019	4,373,857	1,764,184	1,191,210	4,469,021	641,932
Total liabilities	6,023,106	5,570,507	4,707,157	5,787,533	9,042,078	1,298,811
Total mezzanine equity	790,229	700,000	—	—	—	—
Total shareholders' equity	4,034,375	6,151,017	5,201,004	5,363,184	5,231,628	751,478

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors**Risks Related to Our Business and Industry***We may not be able to successfully implement our growth strategies.*

We plan to further increase our services capacities. In 2019, we increased the aggregate number of cabinets under our management by 5,637 from 30,654 as of December 31, 2018 to 36,291 as of December 31, 2019. In order to support our growing customer demand, we plan to add new cabinets in 2020 through new self-built data centers and new phases of existing self-built data centers. To achieve this expansion plan, we will be required to commit a substantial amount of operating and financial resources. Our planned capital expenditures, together with our ongoing operating expenses, will cause substantial cash outflows. If we are not able to generate sufficient operating cash flows or obtain alternative financings, our ability to fund our growth strategy may be limited. Alternative debt or equity financing may not be available when needed or, if available, may not be available on satisfactory terms. Any inability to obtain additional debt or equity financing or to generate sufficient cash from operations may require us to prioritize projects or curtail capital expenditures and could adversely affect our results of operations.

In addition, site selection is a critical factor in our expansion plans, and there may not be suitable properties available with the necessary combination of high power capacity and optical fiber connectivity, which may have a negative impact on our revenue growth. Moreover, we may not have sufficient customer demand in the markets where our data centers are located. We may overestimate the demand for our services and as a result may increase our data center capacity or expand our internet network more aggressively than needed, resulting in a negative impact to our gross profit margins. Furthermore, the costs of construction and maintenance of new data centers constitute a significant portion of our capital expenditures and operating expenses. If our planned expansion does not achieve the desired results, our operating margins could be materially reduced, which would materially impair our profitability and adversely affect our business and results of operations.

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In order to meet customer demand in some of our existing and new markets, we need to expand existing data centers, lease new facilities or obtain suitable land to build new data centers. Expansion of existing data centers and/or construction of new data centers are currently underway, or being contemplated, in many of our markets. Such expansion and/or construction require us to carefully select and rely on the experience of one or more designers, general contractors, and subcontractors during the design and construction process. If a designer, general contractor, or significant subcontractor experiences financial or other problems during the design or construction process, we could experience significant delays and/or incur increased costs to complete the projects, resulting in negative impacts on our results of operations.

Government policies and restrictions on the construction of new data centers or the expansion of existing data centers may also have a material impact on our business. For example, since January 2019, Ministry of Industry and Information Technology, or MIIT, and other regulatory authorities encourage data centers to adhere to certain average levels of energy conservation and aim to reach several goals including, among others, maintaining the power usage effectiveness (PUE) of newly constructed large and extra-large data centers at or below 1.4 from the year 2022 onwards. Some local governmental authorities also issued regulations and relevant implementation rules in order to control the construction and expansion of data centers. For example, on September 6, 2018, the General Office of the People's Government of Beijing Municipality issued a notice prohibiting new construction or expansion of data centers which are involved in providing internet data services or information processing and storage support services within certain areas of Beijing. Governmental authorities in Shanghai also announced similar guidance on January 2, 2019, which provides that the PUE of newly constructed Internet data center is required to be strictly controlled below 1.3, and the PUE of reconstructed internet data centers is required to be strictly controlled below 1.4. These regulatory developments and uncertainties regarding their implementation may adversely affect the expansion and/or construction progress of our data centers.

In addition, we need to work closely with the local power suppliers where our proposed data centers are located. If we experience significant delays in the supply of power required to support the data center expansion or new construction, either during the design or construction phases, the progress of the data center expansion and/or construction could deviate from our original plans, which could cause material and negative effect on our revenue growth, profitability and results of operations.

Any significant or prolonged failure in our infrastructure or services would lead to significant costs and disruptions and would reduce our revenues, harm our business reputation and have a material adverse effect on our financial results.

Our data centers, power supplies and network are vulnerable to disruptions and to failure. Problems with the cooling equipment, generators, backup batteries, routers, switches, or other equipment, whether or not within our control, could result in service interruptions and data losses for our customers as well as equipment damage. Our customers locate their computing and networking equipment in our data centers, and any significant or prolonged failure in our infrastructure or services could significantly disrupt the normal business operations of our customers and harm our reputation and reduce our revenue. While we offer data backup services and disaster recovery services, which could mitigate the adverse effects of such a failure, most of our customers do not subscribe for these services. Accordingly, any failure or downtime in one of our data centers could affect many of our customers. The total destruction or severe impairment of any of our data centers could result in significant downtime of our services and loss of customer data. Since our ability to attract and retain customers depends on our ability to provide highly reliable service, even minor interruptions in our service could harm our reputation.

While we have not experienced any material interruptions in the past, services interruptions continue to be a significant risk for us and could materially impact our business. Any services interruptions could:

- require us to waive fees or provide free services;
- cause our customers to seek damages for losses incurred;
- require us to replace existing equipment or add redundant facilities;
- cause existing customers to cancel or elect to not renew their contracts;

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- affect our reputation as a reliable provider of data center services; or
- make it more difficult for us to attract new customers or cause us to lose market share.

Any of these events could materially increase our expenses or reduce our revenue, which would have a material adverse effect on our results of operations.

We depend on third-party suppliers for key elements of our network infrastructure, data center and telecommunication network services, and we also compete with some of the third-party suppliers, primarily China Telecom and China Unicom, for certain telecommunication resources.

Our success depends in part upon our relationships with third-party suppliers, primarily China Telecom or China Unicom, for key elements of network infrastructure and telecommunication network services, including hosting facilities and bandwidth, and to some extent, optical fibers. We directly enter into agreements with the local subsidiaries of China Telecom or China Unicom, from which we lease cabinets in the data centers built and operated by them, with power systems, cabling and wiring and other data center equipment pre-installed. Because each local subsidiary of China Telecom or China Unicom has independent authority and budget to enter into contracts, our contract terms with these subsidiaries vary and are determined on a case-by-case basis. We generally define “partnered” data centers as the data center space and cabinets we lease from China Telecom, China Unicom and other third parties through agreements. Based on the specific requests of our customers, demands in different cities and our strategy for points of presence, or POP, establishment, the locations and number of our partnered data centers may change from time to time. As of December 31, 2019, we leased a total of 4,244 cabinets that are housed in our 51 partnered data centers, accounting for 11.7% of the total number of our cabinets under management.

We also rely on our internet bandwidth suppliers, which are primarily China Telecom and China Unicom, for a significant portion of our bandwidth needs and lease optical fibers from them to connect our data centers with each other and with the telecommunications backbones and other internet service providers, or ISPs. Our agreements with local subsidiaries of China Telecom or China Unicom usually have a one-year term with automatic renewal option. We can offer no assurances that these service providers will continue to provide service to us on a cost-effective basis or on otherwise competitive terms, if at all, or that these providers will provide us with additional capacity to adequately meet customer demand or to expand our business. Any of these factors could limit our growth prospects and materially and adversely affect our business.

China Telecom and China Unicom also provide data center and bandwidth services and directly compete with us while we exercise little control over them. See “—We may not be able to compete effectively against our current and future competitors.” We believe that we have good business relationships with China Telecom and China Unicom, and we have access to adequate hosting facilities and bandwidth to provide our services. However, there can be no assurance that we can always secure hosting facilities and bandwidth from China Telecom and China Unicom on commercially acceptable terms, or at all.

In addition, we currently purchase routers, switches and other equipment from a limited number of suppliers. We do not carry significant inventories of the products we purchase, and we have no guaranteed supply arrangements with our suppliers. The loss of a significant vendor could delay any build-out of our infrastructure and increase our costs. If our suppliers fail to provide products or services that comply with evolving internet standards or that interoperate with other products or services we use in our network infrastructure, we may be unable to meet all or a portion of our customer service commitments, which could materially and adversely affect our results of operations.

Furthermore, we have experienced and expect to continue to experience interruptions or delays in network services. Any failure on our part or the part of our third-party suppliers to achieve or maintain high data transmission capacity, reliability or performance could significantly reduce customer demand for our services and damage our business and reputation. As our customer base grows and their usage of telecommunications resources increases, we may be required to make additional investments in our capacity to maintain adequate data transmission speed. The availability of such capacity may be limited or the cost may be unacceptable to us. If adequate capacity is not available to us as our customers’ usage increases, our network may be unable to achieve or maintain sufficiently high data transmission capacity, reliability or performance. In addition, our operating margins may suffer if our bandwidth suppliers increase the prices for their services and we are unable to pass along the increased costs to our customers.

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Our leases for data centers could be terminated early, we may not be able to renew our existing leases on commercially reasonable terms, and our rent could increase substantially in the future, which could materially and adversely affect our operations.

We lease buildings with suitable power supplies and safe structures meeting our data center requirements and convert them into data centers by installing power generators, air conditioning systems, cables, cabinets and other equipment. We also build our own data centers from the ground up after obtaining suitable land. We also purchase data centers in use or under construction from third parties. We generally refer to these three types of data centers as “self-built” data centers. Our operating leases generally have three to twenty years lease terms with renewal options. As of December 31, 2019, our self-built data centers house 32,047 cabinets, or 88.3% of the total number of our cabinets under our management. We plan to renew our existing leases upon expiration. However, we may not be able to renew these leases on commercially reasonable terms, if at all. We may experience an increase in our rent payments. In addition, although the lessors of our self-built data centers generally do not have the right of early termination and we have not experienced any early termination as of the date of this annual report, the lease could be terminated early if we are in material breach of the lease agreements or the leased premises become unavailable due to reasons beyond the lessors’ control. If our leases for data centers were terminated early, we may have to relocate our data center equipment and the servers and equipment of our customers to a new building and incur significant costs related to relocation. Any relocation could also affect our ability to provide services and harm our reputation. As a result, our business and results of operations could be materially and adversely affected.

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 have been involved, and may continue to be involved, in legal proceedings or arbitration claims in the ordinary course of our business including those in relation to contract disputes between us and our suppliers or other business partners. For instance, in March 2019, we received a court notification regarding a lawsuit launched by one of our third-party suppliers against us, alleging that we had not fully fulfilled our contractual obligations under a network infrastructure cooperation agreement entered into by and between 21Vianet Beijing and the supplier in 2013. While we believe that the claims against us in this litigation are without merit and intend to defend the action vigorously, we cannot assure you that this lawsuit will be ultimately resolved in our favor. Such proceedings or claims, regardless of their outcomes, could harm our reputation, divert our management’s attention and cause us to incur a substantial amount of legal expenses. If the outcomes of these legal proceedings or arbitration claims are unfavorable to us, we may incur significant legal liabilities and our reputation, financial condition and results of operations could be materially and adversely affected.

We were named as a defendant in a putative shareholder class action lawsuit in the past, if we are involved in similar class action lawsuits, such proceedings could have a material adverse impact on our business, financial condition, results of operation, cash flows and reputation.

In the past, we have been named as defendant in a putative shareholder class action lawsuit described in “Item 8. Financial Information—A. Consolidated Statements and Other Financial Information—Legal and Administrative Proceedings—Litigation,” which has been settled, but we may be involved in similar class action lawsuits in the future. Any such class action lawsuit, whether or not successful, may utilize a significant portion of our cash resources, divert management’s attention from the day-to-day operations of our company, harm our reputation and restrict our ability to raise capital in the future, all of which could harm our business. We also may be subject to claims for indemnification related to these matters, and we cannot predict the impact that indemnification claims may have on our business or financial results.

Difficulties in identifying, consummating and integrating acquisitions and alliances and potential write-off in connection with our investment or acquisitions may have a material and adverse effect on our business and results of operations.

As part of our growth strategy, we have acquired, and may in the future acquire, companies that are complementary to our business. From time to time, we may also make alternative investments and enter into strategic partnerships or alliances as we see fit. For example, we are Microsoft’s local partner for all of its three major cloud offerings: Microsoft Azure, Office 365, and Dynamics 365. We had also been IBM’s local partner for its cloud services (previously known as Bluemix) until December 2019. In March 2017, we entered into an investment agreement with Warburg Pincus to establish a multi-stage joint venture and build a digital real estate platform in China, with an aim to form additional joint ventures to jointly develop IDC projects, and we reached agreements to restructure our partnership with Warburg Pincus in July 2019. In October 2019, we signed a memorandum of understanding with Alibaba to deploy IDC services in support of Alibaba’s expansion throughout Eastern China. However, past and future acquisitions, partnerships or alliances may expose us to potential risks, including risks associated with:

- the integration of new operations and the retention of customers and personnel;
- significant volatility in our operating profit (loss) due to changes in the fair value of our contingent purchase consideration payable;

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- unforeseen or hidden liabilities, including those associated with different business practices;
- the diversion of management's attention and resources from our existing business and technology by acquisition, transition and integration activities;
- failure to achieve synergies with our existing business and generate revenues as anticipated;
- failure of the newly acquired businesses, technologies, services and products to perform as anticipated;
- inability to generate sufficient revenues to offset additional costs and expenses;
- breach or termination of key agreements by the counterparties;
- international operations conducted by some of our acquired business;
- potential claims over payment of contingent purchase consideration; or
- the potential loss of, or harm to, relationships with both our employees and customers resulting from our integration of new businesses.

Any of the potential risks listed above could have a material and adverse effect on our ability to manage our business and our results of operation. In particular, if we cannot deploy IDC services for Alibaba in a timely and satisfactory manner, we may not be able to continue to retain Alibaba as our customer or provide upgraded services to it, which would adversely and materially affect our reputation, which will in turn have a negative impact on our business, results of operations and financial conditions.

In addition, we record goodwill if the purchase price we pay in the acquisitions exceeded the amount assigned to the fair value of the net assets or business acquired. We are required to test our goodwill and intangible assets for impairment annually or more frequently if events or changes in circumstances indicate that they may be impaired. We may record impairment of goodwill and acquired intangible assets in connection with our acquisitions if the carrying value of our acquisition goodwill and related acquired intangible assets in connection with our past or future acquisitions are determined to be impaired. We cannot assure you that the acquired businesses, technologies, services and products from our past acquisitions and any potential transaction will generate sufficient revenue to offset the associated costs or other potential unforeseen adverse effects on our business. Furthermore, we may need to raise additional debt or sell additional equity or equity-linked securities to make or complete such acquisitions. See "—We may require additional capital to meet our future capital needs, which may adversely affect our financial position and result in additional shareholder dilution."

We may not be able to increase sales to our existing customers and attract new customers, which would adversely affect our results of operations.

Our growth depends on our ability to continue to expand our service offerings to existing customers and attract new customers. We may be unable to sustain our growth for a number of reasons, such as:

- capacity constraints;
- inability to identify new locations or reliable data centers for cooperation or lease;
- a reduction in the demand for our services due to the current or future economic recession;
- inability to market our services in a cost-effective manner to new customers;
- inability of our customers to differentiate our services from those of our competitors or inability to effectively communicate such distinctions;
- inability to successfully communicate the benefits of data center services to businesses;

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- the decision of businesses to host their internet infrastructure internally or in other hosting facilities as an alternative to the use of our data center services;
- inability to increase our sales to existing customers; and
- reliability, quality or compatibility problems with our services.

A substantial amount of our past revenues were derived from expanded service offerings to existing customers. Our costs associated with increasing revenues from existing customers are generally lower than costs associated with generating revenues from new customers. Therefore, slowing revenue growth or declining revenues from our existing customers, even if offset by an increase in revenues from new customers, could reduce our operating margins. Any failure to grow our revenues from existing customers or attract new customers for a prolonged period of time could have a material adverse effect on our results of operations. In particular, if we are unable to suit the needs or satisfy the requirements of our existing top customers, such as industry-leading internet companies or cloud service providers, we may not be able to maintain them for existing services or attract them for upgraded services, which may adversely and materially affect our business, results of operations and financial condition.

We may not be able to compete effectively against our current and future competitors.

We face competitions from various industry players, including carriers such as China Telecom and China Unicom, carrier-neutral service providers in China such as SINNET and GDS, cloud services providers such as AWS and AliCloud, VPN service providers such as Citic Telecom CPC, China Telecom, PCCW, and CBCcom, as well as new market entrants in the future. Competition is primarily centered on the quality of service and technical expertise, security, reliability and functionality, reputation and brand recognition, financial strength, the breadth and depth of services offered, geographic coverage and price. Some of our current and future competitors may have substantially greater financial, technical and marketing resources, greater brand recognition, and more established relationships in the industry than we do. As a result, some of these competitors may be able to:

- adapt to new or emerging technologies and changes in customer requirements more quickly;
- bundle services and provide at reduced prices;
- take advantage of acquisition and other opportunities more readily;
- adopt more aggressive pricing policies and devote greater resources to the promotion, marketing, and sales of their services; and
- devote greater resources to the research and development of their products and services.

If we are unable to compete effectively and successfully against our current and future competitors, our business prospects, financial condition and results of operations could be materially and adversely affected.

Our self-built and partnered data centers are vulnerable to security breaches, which could disrupt our operations and have a material adverse effect on our business, financial performance and results of operations.

A party who is able to compromise the security measures of our data centers and networks or the security of our infrastructure could misappropriate either our proprietary information or the information of our customers, or cause interruptions or malfunctions in our operations. In addition, we have limited control over our partnered data centers, which are primarily operated by China Telecom or China Unicom. We may be required to devote significant capital and resources to protect against such threats or to alleviate problems caused by security breaches. As techniques used to breach security change frequently and are generally not recognized until launched against a target, we may not be able to implement security measures in a timely manner or, if and when implemented, we may not be certain whether these measures could be circumvented. Any breaches that may occur could expose us to increased risk of lawsuits, regulatory penalties, loss of existing or potential customers, harm to our reputation and significant increases in our security costs, which could have a material adverse effect on our financial performance and results of operations. For a detailed discussion, see “Item 4. Information on the Company—B. Business Overview—Regulations—Regulations on Internet Security.”

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In addition, any assertions of alleged security breaches or systems failure made against us, whether true or not, could harm our reputation, cause us to incur substantial legal fees, divert management's attention and have a material adverse effect on our business, reputation, financial condition and results of operations.

A severe or prolonged downturn in the global or Chinese economy could materially and adversely affect our business and our results of operation.

The global macroeconomic environment is facing numerous challenges. The growth rate of the Chinese economy has gradually slowed since 2010 and the trend may continue. There is considerable uncertainty over the long-term effects of the expansionary monetary and fiscal policies adopted by the central banks and financial authorities of some of the world's leading economies, including the United States and China. Unrest, terrorist threats and the potential for war in the Middle East and elsewhere may increase market volatility across the globe. There have also been concerns about the relationship between China and other countries, including the surrounding Asian countries, which may potentially have economic effects. In particular, there is significant uncertainty about the future relationship between the United States and China with respect to trade policies, treaties, government regulations and tariffs. Economic conditions in China are sensitive to global economic conditions, as well as changes in domestic economic and political policies and the expected or perceived overall economic growth rate in China. Any severe or prolonged slowdown in the global or Chinese economy may materially and adversely affect our business, results of operations and financial condition.

The uncertainty surrounding the implementation and effect of Brexit and related negative developments in the European Union could adversely affect our business, financial condition and results of operations.

In 2016, the United Kingdom voted to leave the European Union ("EU") (commonly referred to as "Brexit"). As a result of the referendum, a complex and uncertain process of negotiation is now taking place to determine the future terms of the United Kingdom's relationship with the EU, with the United Kingdom has officially exited the EU on January 31, 2020 and the planned transition period will run from February 1, 2020 to December 31, 2020. During the transition period, the United Kingdom will cease to be an EU member but will still follow all of the EU's rules and regulations, and will remain in the single market and the customs union and contribute to the EU budget. This transition period would also see the United Kingdom and the EU negotiate a trade agreement that would be likely to commence immediately following the end of the transition period. After December 31, 2020 or any later date on which the transition period would end, the relationship between the United Kingdom and the EU would be regulated by any trade agreement concluded during the transition period. A 'no-deal' Brexit scenario could still occur. In the absence of further transitional arrangements with the EU, therefore, there is a greater risk that trade between United Kingdom and EU businesses will be materially adversely affected. Our customers who have significant operations in the United Kingdom may incur additional costs and expenses to adapt to potentially divergent regulatory frameworks from the rest of the E.U.

The long-term nature of the United Kingdom's relationship with the EU is unclear and there is considerable uncertainty when, or if, any withdrawal agreement or long-term relationship strategy, including trade deals, will be agreed to and implemented by the United Kingdom and the EU. Brexit could adversely affect European or worldwide political, regulatory, economic or market conditions and could contribute to instability in political institutions and regulatory agencies. Brexit could also have the effect of disrupting the free movement of goods, services, and people between the United Kingdom, the EU and elsewhere. This may cause us to adjust our strategy in order to compete effectively in global markets and could adversely affect our business, financial condition, operating results and cash flows. There can be no assurance that any or all of these events, or others that we cannot anticipate at this time, will not have a material adverse effect on our business, financial condition and results of operations.

[Table of Contents](#)***Our business could be adversely affected by trade tariffs or other trade barriers.***

Recently there have been heightened tensions in international economic relations, such as the one between the U.S. and China. Since July 2018, the U.S. government has imposed, and has proposed to impose additional, new or higher tariffs on certain products imported from China to penalize China for what it characterizes as unfair trade practices. China has responded by imposing, and proposing to impose additional, new or higher tariffs on certain products imported from the U.S. In May 2019, the U.S. government announced to increase tariffs to 25%, and China responded by imposing tariffs on certain U.S. goods on a smaller scale, and proposed to impose additional tariffs on U.S. goods. On June 1, 2019, the tariffs announced in May 2019 became in effect on US\$60 billion worth of U.S. goods exported to China. On September 1, 2019, as announced, U.S. began implementing tariffs on more than US\$125 billion worth of Chinese imports. On September 2, 2019, China lodged a complaint against the U.S. over import tariffs to the World Trade Organization. In December 2019, the U.S. and China reached a limited trade agreement that will roll back existing tariff rates on certain Chinese goods and cancel new levies set to take effect on December 15, 2019 in exchange for Chinese purchases of U.S. farm goods and obtain other concession. However, there can be no assurances that the U.S. or China will not increase tariffs or impose additional tariffs in the future. Although we do not currently export any products to the United States, it is not yet clear what impact these tariffs may have on our business. Although we only provide services, tariffs could potentially impact the business of our suppliers and business partners which may in turn affect our business. In addition, these developments could have a material adverse effect on global economic conditions and the stability of global financial markets. Any of these factors could have a material adverse effect on our business, financial condition and results of operations.

If we are unable to meet our customers' requirements, our reputation and results of operations could suffer.

Our agreements with our customers contain certain guarantees regarding our performance. For hosting services, we guarantee 99.9% uptime for power and 99.9% uptime for network connectivity, failure of which will cause us to provide free service for a following period of time. In 2016, one of our data centers in southern China experienced a network outage for an extended period of time due to supplier-side connectivity issues. As a result, we failed to meet the 99.9% uptime for network connectivity and provided free service for a following period of time to all customers who were affected pursuant to customer contracts. This is a one-time incident and did not have any material impact on our business. If in the future similar incidents were to recur or we are unable to provide customers with quality customer support, we could face customer dissatisfaction, decreased overall demand for our services, and loss of revenue. In addition, inability to meet customer service expectations may damage our reputation and could consequently limit our ability to retain existing customers and attract new customers, which would adversely affect our ability to generate revenue and negatively impact our results of operations.

We rely on customers in the internet industry for most of our revenues.

We derived a majority of our revenues in 2019 from customers in China's internet industry, including online media, e-commerce, live broadcasting, social networking, online game companies, portals, search engines, financial industry and cloud services providers. The business models of some internet companies are relatively new and have not been well proven. Many internet companies base their business prospects on the continued growth of China's internet market, which may not happen as expected.

In addition, our business would suffer if companies in China's internet sector reduce the outsourcing of their data center services. If any of these events happen, we may lose customers or have difficulties in selling our services, which would materially and adversely affect our business and results of operations.

We may require additional capital to meet our future capital needs, which may adversely affect our financial position and result in additional shareholder dilution.

We will require significant capital expenditures to fund our future growth. We may need to raise additional funds through equity or debt financings in the future in order to meet our capital needs mostly in relation to the construction of our self-built data centers and future acquisition opportunities.

In February 2020, we entered into convertible note purchase agreements with a group of investors led by Goldman Sachs Asia Strategic Pte. Ltd. for a total of US\$200 million in convertible notes. 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 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.

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In August 2017, we issued US\$200 million in aggregate principal amount of USD-denominated notes due 2020 at a coupon rate of 7.000% per annum, or the Original Notes. In September 2017, we issued US\$100 million in aggregate principal amount of USD-denominated notes due 2020 at a coupon rate of 7.000% per annum, or the Notes. The Notes were priced at a slight premium of 100.04, with an effective yield of 6.98%. The Notes constitute a further issuance of, and were consolidated to form a single series with, the Original Notes. The Original Notes and the Notes are collectively referred to as the “2020 Notes”. 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 US\$300 million in aggregate principal amount of USD-denominated senior notes due 2021 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 50.28% 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, with US\$131,161,000 of the principal amount of the 2020 Notes remains outstanding as of December 31, 2019. 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 the 2021 Notes have restrictive covenants relating to financial ratios as well as our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. Such covenants restrict our abilities to declare dividends or incur or guarantee additional indebtedness, among other things. See “Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources” for more detailed information on restrictive covenants of the 2020 Notes.

In January 2015, we issued (i) 39,087,125 Class A and 18,250,268 Class B ordinary shares to King Venture Holdings Limited, or Kingsoft, for an aggregate cash consideration of US\$172 million; (ii) 6,142,410 Class A and 10,524,257 Class B ordinary shares to Xiaomi Ventures Limited, or Xiaomi, for an aggregate cash consideration of US\$50 million; and (iii) 24,668,022 Class A ordinary shares (in the form of 4,111,337 ADSs) to Esta, for an aggregate cash consideration of US\$74 million.

In May 2016, we issued 31,996,874 Class A and 111,053,390 Class B ordinary shares to Tus-Holdings Co., Ltd., or Tus-Holdings, for an aggregate cash consideration of US\$388 million.

If we raise additional funds through further issuances of equity or equity-linked securities, our existing shareholders could suffer significant dilution in their percentage ownership of our company, and any new equity securities we issue could have rights, preferences, and privileges senior to those of holders of our ADSs or ordinary shares.

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our debt.

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness, depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive to our current shareholding structure. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

As of December 31, 2019, our total consolidated indebtedness and other liabilities representing total bank borrowings, bonds payable, accounts and notes payable and accrued expenses and other payables were RMB4,600.4 million (US\$660.8 million). Failure to servicing our debt would constitute an event of default under the terms of the bonds, which would have a material adverse effect on our financial condition and results of operations. Furthermore, if our bond rating is downgraded or we incur any change of control event, our financial condition or results of operations would be adversely and materially affected as well.

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Our substantial level of indebtedness could adversely affect our ability to raise additional capital to fund our operations, expose us to interest rate risk to the extent of our variable rate debt, and if we are unable to comply with the restrictions and covenants contained in our debt agreements, an event of default could occur under the terms of such agreements, which could cause repayment of such debt to be accelerated.

We have substantial indebtedness. Based on our current expansion plans, we expect to continue to finance our operations partially through the incurrence of debt. Our indebtedness could, among other consequences:

- make it more difficult for us to satisfy our obligations under our indebtedness, exposing us to the risk of default, which, in turn, would negatively affect our ability to operate as a going concern;
- require us to dedicate a substantial portion of our cash flows from operations to interest and principal payments on our indebtedness, reducing the availability of our cash flows for other purposes, such as capital expenditures, acquisitions and working capital;
- limit our flexibility in planning for, or reacting to, changes in our business and the industries in which we operate;
- increase our vulnerability to general adverse economic and industry conditions;
- place us at a disadvantage compared to our competitors that have less debt;
- expose us to fluctuations in the interest rate environment because the interest rates on borrowings under our project financing agreements are variable;
- increase our cost of borrowing;
- limit our ability to borrow additional funds; and
- require us to sell assets to raise funds, if needed, for working capital, capital expenditures, acquisitions or other purposes.

As a result of covenants and restrictions, we are limited in how we conduct our business, and we may be unable to raise additional debt or equity financing to compete effectively or to take advantage of new business opportunities. Our current or future borrowings could increase the level of financial risk to us and, to the extent that the interest rates are not fixed and rise, or that borrowings are refinanced at higher rates, our available cash flow and results of operations could be adversely affected.

If we are unable to comply with the restrictions and covenants in our current or future debt and other agreements, there could be a default under the terms of these agreements. In the event of a default under these agreements, the holders of the debt could terminate their commitments to lend to us, accelerate the debt and declare all amounts borrowed due and payable or terminate the agreements, whichever the case may be.

Furthermore, some of our debt agreements may contain cross-acceleration or cross-default provisions. As a result, our default under one debt agreement may cause the acceleration of debt or result in a default under our other debt agreements. If any of these events occur, we cannot assure you that our assets and cash flow would be sufficient to repay in full all of our indebtedness, or that we would be able to find alternative financing. Even if we could obtain alternative financing, we cannot assure you that it would be on terms that are favorable or acceptable to us.

Increased power costs and limited availability of electrical resources could adversely affect our results of operations.

We are a large consumer of power and costs of power account for a significant portion of our overall costs for both our self-built data centers and partnered data centers. We may not be able to pass on increased power costs to our customers, which could harm our results of operations.

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Power and cooling requirements at our data centers are also increasing as a result of the increasing power demands of today's servers. Since we rely on third parties to provide our data centers with power, our data centers could have a limited or inadequate access to power. Our customers' demand for power may also exceed the power capacity in our older data centers, which may limit our ability to fully utilize these data centers. This could adversely affect our relationships with our customers, which could harm our business and have an adverse effect on our results of operations.

If we are unable to manage our growth effectively, our financial results could suffer.

The growth of our business and our service offerings may strain our operating and financial resources. Furthermore, we intend to continue expanding our overall business, customer base, headcount, and operations. Managing a geographically dispersed workforce requires substantial management effort and significant additional investment in our operating and financial system capabilities and controls. If our information systems are unable to support the demands placed on them by our growth, we may need to implement new systems, which would be disruptive to our business. We may also initiate similar network upgrade in the future if required by our operations. We may be unable to manage our expenses effectively in the future due to the expenses associated with these expansions and such expansions or upgrade may cause disruption of services to our customers, which may negatively impact our net revenues and operating expenses. If we fail to improve our operational systems or to expand our customer service capabilities to keep pace with the growth of our business, we could experience customer dissatisfaction, cost inefficiencies, and lost revenue opportunities, which may materially and adversely affect our results of operations.

If we are unable to successfully identify and analyze changing market trends and adjust our growth strategies accordingly in a timely and cost-effective manner, our results of operations could be adversely affected.

As China's internet infrastructure market remains at its early stage, especially compared to those in more advanced economies, we generally operate in a more complex business environment with changing market dynamics. On one hand, the imbalance between material growth in internet traffic and the relative limited supply of high quality internet infrastructure services drives strong demand for not only data center services, but also complementary value-added services in adjacent markets, including interconnectivity services, network transmission services and cloud services among others. On the other hand, the potential changes in competitive landscape and regulations in an otherwise highly regulated market continues to present ambiguities and challenges. Therefore, we need to evaluate, on a continuously basis, the changing market dynamics and from time to time make adjustments to our growth strategies and operations accordingly. Any material changes to our strategies and operations, including adjustments to business models, new business areas and acquisitions, are evaluated financially, strategically and operationally by the management and approved by our board of directors. In 2017, after thorough evaluation by the management and approval by the board, we completed the disposal of our managed network services business segment, including CDN services, hosting area network services, route optimization and last-mile broadband businesses, as these businesses were loss-making due to the intense market competition. However, if we fail to capture new growth opportunities, or become unsuccessful in modifying our strategies and operations to adapt to these changing market conditions in a timely and cost-effective manner, our results of operations could be materially and adversely affected.

In addition, we have and may continue to expand in new business areas that we believe either strengthen our competitive position or will improve our future growth rates. Some of these new business areas require substantial upfront investments, which may precede anticipated generation of revenues. For example, as large-scale cloud service providers have increasing demands for customized data centers, we have started to provide managed wholesale services for them since 2019. If we fail to successfully manage the progress of these new growth initiatives, or if changing market conditions prove to work against our proposed business plans, or if we fail to compete effectively with other market players, we may not be able to attract new customers and generate general revenues and profits as anticipated, which may materially and adversely affect our business expansion.

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If we are unable to adapt to evolving technologies and customer demands in a timely and cost-effective manner, our ability to sustain and grow our business may suffer.

To be successful, we must adapt to our rapidly changing market by continually improving the performance, features, and reliability of our services and modifying our business strategies accordingly. We could also incur substantial costs if we need to modify our services or infrastructure in order to adapt to these changes. We may not be able to timely adapt to changing technologies, if at all. Our ability to sustain and grow our business would suffer if we fail to respond to these changes in a timely and cost-effective manner. New technologies or industry standards have the potential to replace or provide lower cost alternatives to our data center services. The adoption of such new technologies or industry standards could render some or all of our services obsolete or unmarketable. We cannot guarantee that we will be able to identify the emergence of all of these new service alternatives successfully, modify our services accordingly, or develop and bring new products and services to market in a timely and cost-effective manner to address these changes. If and when we do identify the emergence of new service alternatives and introduce new products and services to market, those new products and services may need to be made available at lower price points than our then-current services. Failure to provide services to compete with new technologies or the obsolescence of our services could lead us to lose current and potential customers or could cause us to incur substantial costs, which would harm our results of operations and financial condition. Our introduction of new alternative products and services that have lower price points than current offerings may result in our existing customers switching to the lower cost products, which could reduce our revenues and have a material adverse effect of our results of operations.

We have expanded to the cloud services market for a short period of time and failure to successfully grow our cloud service business will have a material and adverse effect on our growth, results of operations and business prospects.

Through our strategic partnership with Microsoft, we started providing public cloud service in 2013 and hybrid cloud service in 2014. We further expanded to provide private cloud and hybrid services through our partnership with IBM in 2014. In October 2016, we launched IBM cloud services which are now generally available in China. In 2019, our partnership with IBM expired. Cloud services are a new and emerging market in China and we have limited experience in this market. Our success in the cloud service business is subject to various risks and uncertainties, including:

- our short history in the cloud services market;
- increase of our personnel mobility in the aggressive talent market competition;
- the unprecedented market development and our possible lack of ability to keep up with the market development;
- information security restrictions imposed by the MIIT;
- continuous effort to adapt to various standards applicable to the cloud market, with the national cloud standard still in process of being formulated;
- our possible overestimation of the market demand and development, which leads to our overinvestment in the new business;
- the possibility of a difficult relationship with our major partners, such as Microsoft, including being unable to extend our cooperation agreements;
- the possible slow acceptance of cloud service in China and our failure to implement new business strategies;
- competition from other market players, both domestic and abroad; and
- new risks associated with the cloud services yet to be fully understood by the industry and market.

If we are unable to effectively manage these risks, we may not be able to successfully operate in the cloud services market and achieve the expected growth.

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In addition, the expansion into the cloud services market has resulted in a change to our business, including, among others, the change of our customer base. The number of enterprise and government entity customers has increased with our expansion into the cloud services market. Our lack of experience in dealing with enterprise and government entity customers may pose new challenges for us. We may not be able to manage our business growth strategy as planned and our results of operations and business prospects may be materially and adversely affected.

Any negative publicity and allegations against us may adversely affect our brand, public image and reputation, which may harm our ability to attract and retain users and business partners and result in material adverse impact on our business, results of operations and prospects.

Negative publicity and allegations about us, our products and services, our financial results or our market position in general, including by short sellers or investment research firms, regardless of their veracity, may adversely damage our brand, public image and reputation, harm our ability to attract and retain users and result in material adverse impact on our share price, business, results of operations and prospects. For example, on September 10, 2014, Trinity Research Group, or Trinity, a short seller that was allegedly formed in 2014, issued a report alleging that we operate through a Ponzi scheme and have reported fraudulent financials and operating metrics. On September 17, 2014, Trinity issued a second report. The trading price of our ADSs declined and two shareholder class action lawsuits were filed against us and some of our directors and senior executive officers. Although through two separate and comprehensive rebuttal reports, we have rejected all the allegations set out in the Trinity reports, and such class action lawsuits have been settled in 2018, our share price fluctuated after such negative publicity, and we may be involved in similar class action lawsuits in the future. Such negative publicity may have adversely damaged our brand, public image and reputation, which may result in an adverse impact on our results of operations and prospects. See “Item 8.A—Legal Proceedings” for more information on the two shareholder class action lawsuits.

Rapid urbanization and changes in zoning and urban planning in China may cause our leased properties to be demolished, removed or otherwise affected.

China is undergoing a rapid urbanization process, and zoning requirements and other governmental mandates with respect to urban planning of a particular area may change from time to time. When there is a change in zoning requirements or other governmental mandates with respect to the areas where our data centers are located, the affected data centers may need to be demolished and removed. As a result, we may have to relocate our data centers to other locations. We have not experienced such demolition and relocation in the past, but we cannot assure you that we will not experience demolitions or interruptions of our data center operations due to zoning or other local regulations. Any such demolition and relocation could cause us to lose primary locations for our data centers and we may not be able to achieve comparable operation results following the relocations. While we may be reimbursed for such demolition and relocation, we cannot assure you that the reimbursement, as determined by the relevant government authorities, will be sufficient to cover our direct and indirect losses. Accordingly, our business, results of operations and financial condition may be materially and adversely affected.

Our business depends substantially on the continuing efforts of our executives, and our business may be severely disrupted if we lose their services.

Our future success heavily depends upon the continued services of our executives and other key employees. In particular, we rely on the expertise and experience of Sheng Chen, our co-founder and executive chairman of the board of directors. We rely on their industry expertise, their experience in our business operations and sales and marketing, and their working relationships with our employees, our other major shareholders, our clients and relevant government authorities. If one or more of our senior executives were unable or unwilling to continue in their present positions, we might not be able to replace them easily or at all. If any of our senior executives joins a competitor or forms a competing company, we may lose clients, suppliers, key professionals and staff members. Each of our executive officers has entered into an employment agreement with us, which contains non-competition provisions. However, if any dispute arises between our executive officers and us, we cannot assure you the extent to which any of these agreements could be enforced in China, where these executive officers reside, in light of the uncertainties with China’s legal system. See “—Risks Related to Doing Business in China—Uncertainties with respect to the PRC legal system could limit legal protections available to you and us.”

[Table of Contents](#)***If we are unable to recruit or retain qualified personnel, our business could be harmed.***

We must continue to identify, hire, train, and retain IT professionals, technical engineers, operations employees, and sales and management personnel who maintain relationships with our customers and who can provide the technical, strategic, and marketing skills required for our company to grow. There is a shortage of qualified personnel in these fields, and we compete with other companies for the limited pool of these personnel. Any failure to recruit and retain necessary technical, managerial, sales, and marketing personnel, including but not limited to members of our executive team, could harm our business and our ability to grow.

The benefits from our partnership with Warburg Pincus may take longer than expected to realize, if at all.

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 will allow us to reduce our capital expenditures in the future 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 will (i) adjust the existing holding structure for operating the current projects, and (ii) jointly establish an additional holding vehicle for sourcing and developing new projects in China. There is no guarantee that the joint venture will turn out to be successful, and the benefits from our partnership with Warburg Pincus may take longer than expected to realize, if at all.

The uncertain economic environment may continue to have an adverse impact on our business and financial condition.

The uncertain economic environment could have an adverse effect on our liquidity. While we believe we have a strong customer base, if the current market conditions were to worsen, some of our customers may have difficulty paying us and we may experience increased churn in our customer base and reductions in their commitments to us. For example, we had a long outstanding receivable from a state-owned enterprise client. We made a full allowance for doubtful debt, even though we still have an opportunity to collect a portion of the receivable in the future. Although we believe it to be a one-time expense, if similar circumstances do occur to other customers, we may be required to further increase our allowance for doubtful debt and our results would be negatively impacted. Our sales cycle could also be lengthened if customers slow spending, or delay decision-making, on our products and services, which could adversely affect our revenues growth and our ability to recognize revenue. Finally, we could also experience pricing pressure as a result of economic conditions if our competitors lower prices and attempt to lure away our customers with lower cost solutions. Finally, our ability to access the capital markets may be severely restricted at a time when we would like, or need, to do so which could have an impact on our flexibility to pursue additional expansion opportunities and maintain our desired level of revenue growth in the future.

Our results of operations have fluctuated and may continue to fluctuate, which could make our future results difficult to predict. This may also result in significant volatility in, and otherwise adversely affect, the market for our ADSs.

Our results of operations have fluctuated and may continue to fluctuate due to a variety of factors, including many of the risks described in this section, which are outside of our control. As a result, comparing our results of operations on a period-to-period basis may not be meaningful. You should not rely on our results of operations for any prior periods as an indication of our future operating performance. Fluctuations in our revenue can lead to even greater fluctuations in our results of operations. Our budgeted expense levels depend in part on our expectations of long-term future revenue. Given relatively fixed operating costs related to our personnel and facilities, any substantial adjustment to our expenses to account for lower than expected levels of revenue will be difficult and time consuming. Consequently, if our revenues do not meet projected levels, our operating performance will be negatively affected. Fluctuations in our results of operations could result in significant volatility in, and otherwise adversely affect, the market for our ADSs.

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If we fail to maintain an effective system of internal control over financial reporting, we may be unable to accurately report our financial results or prevent fraud, and investor confidence in our company and the market price of our ADSs may be adversely affected.

The SEC, as required by Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, adopted rules requiring most public companies to include a management report on such company's internal control over financial reporting in its annual report, which contains management's assessment of the effectiveness of the company's internal control over financial reporting. In addition, when a company meets the SEC's criteria, an independent registered public accounting firm must report on the effectiveness of the company's internal control over financial reporting.

Our management and independent registered public accounting firm have concluded that our internal control over financial reporting as of December 31, 2019 was effective. However, we cannot assure you that in the future our management or our independent registered public accounting firm will not identify material weaknesses during the Section 404 of the Sarbanes-Oxley Act audit process or for other reasons. In addition, because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. As a result, if we fail to maintain effective internal control over financial reporting or should we be unable to prevent or detect material misstatements due to error or fraud on a timely basis, investors could lose confidence in the reliability of our financial statements, which in turn could harm our business, results of operations and negatively impact the market price of our ADSs, and harm our reputation. Furthermore, we have incurred and expect to continue to incur considerable costs and to use significant management time and other resources in an effort to comply with Section 404 and other requirements of the Sarbanes-Oxley Act.

Compliance with rules and regulations applicable to companies publicly listed in the United States is costly and complex and any failure by us to comply with these requirements on an ongoing basis could negatively affect investor confidence in us and cause the market price of our ADSs to decrease.

In addition to Section 404, the Sarbanes-Oxley Act also mandates, among other things, that companies adopt corporate governance measures, imposes comprehensive reporting and disclosure requirements, sets strict independence and financial expertise standards for audit committee members, and imposes civil and criminal penalties for companies, their chief executive officers, chief financial officers and directors for securities law violations. For example, in response to the Sarbanes-Oxley Act, Nasdaq has adopted additional comprehensive rules and regulations relating to corporate governance. These laws, rules and regulations have increased the scope, complexity and cost of our corporate governance and reporting and disclosure practices. Our current and future compliance efforts will continue to require significant management attention. In addition, our board members, chief executive officer and chief financial officer could face an increased risk of personal liability in connection with the performance of their duties. As a result, we may have difficulty attracting and retaining qualified board members and executive officers to fill critical positions within our company. Any failure by us to comply with these requirements on an ongoing basis could negatively affect investor confidence in us, cause the market price of our ADSs to decrease or even result in the delisting of our ADSs from Nasdaq.

We are subject to China's anti-corruption laws and the U.S. Foreign Corrupt Practices Act. Our failure to comply with these laws could result in penalties, which could harm our reputation and have an adverse effect on our business, results of operations and financial condition.

We are subject to the U.S. Foreign Corrupt Practices Act, or the FCPA, which generally prohibits companies and anyone acting on their behalf from offering or making improper payments or providing benefits to foreign officials for the purpose of obtaining or keeping business, along with various other anti-corruption laws, including China's anti-corruption laws. Our existing policies prohibit any such conduct and we are in the process of implementing additional policies and procedures designed to ensure that we, our employees and intermediaries comply with the FCPA and other anti-corruption laws to which we are subject. There is, however, no assurance that such policies or procedures will work effectively all the time or protect us against liability under the FCPA or other anti-corruption laws for actions taken by our employees and intermediaries with respect to our business or any businesses that we may acquire. We operate in the data center services industry in China and generally purchase our hosting facilities and telecommunications resources from state or government-owned enterprises and sell our services domestically to customers that include state or government-owned enterprises or government ministries, departments and agencies. This puts us in frequent contact with persons who may be considered "foreign officials" under the FCPA, resulting in an elevated risk of potential FCPA violations. If we are found to be not in compliance with the FCPA and other applicable anticorruption laws governing the conduct of business with government entities or officials, we may be subject to criminal and civil penalties and other remedial measures, which could have an adverse impact on our business, financial condition and results of operations. Any investigation of any potential violations of the FCPA or other anti-corruption laws by U.S. or foreign authorities, including Chinese authorities, could adversely impact our reputation, cause us to lose customer sales and access to hosting facilities and telecommunications resources, and lead to other adverse impacts on our business, financial condition and results of operations.

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If we fail to maintain a strong brand name, we may lose our existing customers and have difficulties attracting new customers, which may have an adverse effect on our business and results of operation.

We have built a strong brand in Chinese, “世纪互联”, among our customers. As our business grows or changes, we plan to continue to focus our efforts to establish a wider recognition of our brand to attract potential customers, and we may also introduce additional brands in relation to our business. We cannot assure you that we will effectively allocate our resources for these activities or succeed in maintaining and broadening our brand recognition among customers. Our major brand names and logos are registered trademarks in China. However, preventing trademark and trade name infringement or misuse could be difficult, costly and time-consuming, particularly in China. There had been incidents in the past where third parties used our brand without our authorization and we had to resort to litigation to protect our intellectual property rights. See “Item 8.A—Legal Proceedings” for our disputes with Shanghai 21Vianet Information Systems Co., Ltd. We may continue to experience similar disputes in the future or otherwise fail to fully protect our brand name, which may have an adverse effect on our business and financial results.

If we fail to protect our intellectual property rights in general, our business may suffer.

We consider our copyrights, trademarks, trade names and internet domain names invaluable to our ability to continue to develop and enhance our brand recognition. Historically, the PRC has afforded less protection to intellectual property rights than the United States. We utilize proprietary know-how and trade secrets and employ various methods to protect such intellectual property. Unauthorized use of our copyrights, trademarks, trade names and domain names may damage our reputation and brand. Preventing copyright, trademark and trade name infringement or misuse could be difficult, costly and time-consuming, particularly in China. The measures we take to protect our copyrights, trademarks and other intellectual property rights are currently based upon a combination of trademark and copyright laws in China and may not be adequate to prevent unauthorized uses. Furthermore, application of laws governing intellectual property rights in China is uncertain and evolving, and could involve substantial risks to us. If we are unable to adequately protect our trademarks, copyrights and other intellectual property rights in the future, we may lose these rights, our brand name may be harmed, and our business may suffer materially. Furthermore, our management’s attention may be diverted by violations of our intellectual property rights, and we may be required to enter into costly litigation to protect our proprietary rights against any infringement or violation.

We may face intellectual property infringement claims that could be time-consuming and costly to defend. If we fail to defend ourselves against such claims, we may lose significant intellectual property rights and may be unable to continue providing our existing services.

Our technologies and business methods, including those relating to data center services, may be subject to third-party claims or rights that limit or prevent their use. Companies, organizations or individuals, including our competitors, may hold or obtain patents or other proprietary rights that would prevent, limit or interfere with our ability to make, use or sell our services or develop new services, which could make it more difficult for us to operate our business. Intellectual property registrations or applications by others relating to the type of services that we provide may give rise to potential infringement claims against us. In addition, to the extent that we gain greater visibility and market exposure as a public company, we are likely to face a higher risk of being subject to intellectual property infringement claims from third parties. We expect that infringement claims may further increase as the number of products, services and competitors in our market increases. Further, continued success in this market may provide an impetus to those who might use intellectual property litigation as a tool against us.

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It is critical that we use and develop our technology and services without infringing the intellectual property rights of third parties, including but not limited to patents, copyrights, trade secrets and trademarks. Intellectual property litigation is expensive and time-consuming and could divert management's attention from our business. A successful infringement claim against us, whether with or without merit, could, among others things, require us to pay substantial damages, develop non-infringing technology or enter into royalty or license agreements that may not be available on acceptable terms, if at all, and cease making, licensing or using products that have infringed a third party's intellectual property rights. Protracted litigation could also result in existing or potential customers deferring or limiting their purchase or use of our products until resolution of such litigation, or could require us to indemnify our customers against infringement claims in certain instances. Any intellectual property litigation could have a material adverse effect on our business, results of operations or financial condition.

If we fail to defend ourselves against any intellectual property infringement claim, we may lose significant intellectual property rights and may be unable to continue providing our existing services, which could have a material adverse effect on our results of operations and business prospects.

If our customers' proprietary intellectual property or confidential information is misappropriated or disclosed by us or our employees in violation of applicable laws and contractual agreements, we could be exposed to protracted and costly legal proceedings and lose clients.

We and our employees are in some cases provided with access to the proprietary intellectual property and confidential information of our customers, including technology, software products, business policies and plans, trade secrets and personal data. Many of our customer contracts require that we do not engage in the unauthorized use or disclosure of such intellectual property or information and that we will be required to indemnify our customers for any loss they may suffer as a result. We use security technologies and other methods to prevent employees from making unauthorized copies, or engaging in unauthorized use or unauthorized disclosure, of such intellectual property and confidential information. We also require our employees to enter into non-disclosure arrangements to limit access to and distribution of our customers' intellectual property and other confidential information as well as our own. However, the steps taken by us in this regard may not be adequate to safeguard our customers' intellectual property and confidential information. Moreover, most of our customer contracts do not include any limitation on our liability with respect to breaches of our obligation to keep the intellectual property or confidential information we receive from them confidential. In addition, we may not always be aware of intellectual property registrations or applications relating to source codes, software products or other intellectual property belonging to our customers. As a result, if our customers' proprietary rights are misappropriated by us or our employees, our customers may consider us liable for such act and seek damages and compensation from us.

We have granted, and may continue to grant, stock options and other forms of share-based incentive awards, which may result in significant share-based compensation expenses.

As of February 29, 2020, options to purchase 931,254 ordinary shares and 3,271,135 RSUs, have been granted under our 2010 share incentive plan, or the 2010 Plan, and 2014 share incentive plan, or the 2014 Plan. See "Item 6.B—Compensation of Directors and Executive Officers—Share Incentive Plans." For the year ended December 31, 2019, we recorded RMB43.9 million (US\$6.3 million) in share-based compensation expenses.

We believe share-based incentive awards enhance our ability to attract and retain key personnel and employees, and we will continue to grant stock options, RSUs and other share-based awards to employees in the future. If our share-based compensation expenses continue to be significant, our results of operations would be materially and adversely affected.

Any share-based shareholder contribution, if and when made by our executive chairman for the benefit of our company, would be required to be recognized as share-based compensation expenses within our results of operations, which would be derived from the estimated fair value of the ordinary share award on the transfer date. Our future results of operations may be materially and adversely affected if a significant amount of share-based compensation is recorded in connection with such future transfers of these ordinary shares.

[Table of Contents](#)***We may not have adequate insurance coverage to protect us from potential losses.***

Our operations are subject to hazards and risks normally associated with daily operations for our data centers. Currently, we maintain insurance policies for our equipment, but we do not maintain any business interruption insurance or third-party liability insurance. The insurance policies for our equipment may only be sufficient to cover a portion of the total value of all equipment in the event that losses occur. Insurance companies in China currently do not offer as extensive an array of insurance products as insurance companies do in more developed economies. The occurrence of any events not covered by our limited insurance coverage may result in interruption of our operations and subject us to significant losses or liabilities. In addition, any losses or liabilities that are not covered by our current insurance policies or are not insured at all may have a material adverse effect on our business, results of operations and financial condition.

We face risks related to natural disasters, health epidemics and other outbreaks, which could significantly disrupt our operations.

We are vulnerable to natural disasters and other calamities. Fire, floods, typhoons, earthquakes, power loss, telecommunications failures, break-ins, war, riots, terrorist attacks or similar events may give rise to server interruptions, breakdowns, system failures, technology platform failures or internet failures, which could cause the loss or corruption of data or malfunctions of software or hardware as well as adversely affect our ability to provide services to our customers. If a nature disaster were to occur in the future that affected Beijing or another city where we have major operations, our operations could be materially and adversely affected due to loss of personnel and damages to property. In addition, a natural disaster affecting a larger, more developed area could also cause an increase in our costs resulting from the efforts to resurvey the affected area. Even if we are not directly affected, such a disaster could affect the operations or financial condition of our customers and suppliers, which could harm our results of operations.

In addition, our business could be materially and adversely affected by public health emergencies, such as the outbreak of avian influenza, severe acute respiratory syndrome (SARS), the influenza A (H1N1) virus, Ebola virus, COVID-19, or other epidemics or outbreaks, since it could require our employees to be quarantined and/or our offices and facilities to be disinfected or even temporarily closed. For example, in early 2020, in response to intensifying efforts to contain the spread of COVID-19, the Chinese government took a number of actions, which included extending the Chinese New Year holiday, quarantining and otherwise treating individuals in China who are infected with COVID-19, asking residents to remain at home and to avoid gathering in public, and other actions. The COVID-19 has also resulted in temporary closure of many corporate offices, retail stores, and manufacturing facilities and factories across China. While the events related to the outbreak of and response to the COVID-19 are expected to be temporary, our business could be adversely impacted by the effects of the COVID-19 or other epidemics. In particular, the construction of new data centers or the expansion of existing data centers might be significantly delayed because of the temporary closure of our construction sites and the shortage of workers due to the travel restrictions in China after the Chinese New Year holiday. If the construction of new data centers or the expansion of existing data centers cannot be completed or delivered on time, we might be unable to meet our customer demand in the existing and new markets as expected, which may adversely and materially affect our business, results of operations and financial conditions. In addition, the business distributions caused by the outbreak of COVID-19 might also adversely and materially affect our customers' business operations and financial conditions, especially for small and medium-sized enterprises, and they might start to encounter cash flow or operating difficulties, which may reduce their demand for our services, increase the accounts receivable turnover days or even increase the default risks. All of these consequences would negatively affect our operating results. In respond to the epidemic, we also made remote working arrangement and suspended our offline customer acquisition activities and business travels to ensure the safety and health of our employees. All of the above measures reduce our business operation capacity and negatively affect our operating results. The extent to which the outbreak of COVID-19 impacts our results of operations will depend on the future developments of the outbreak, including new information concerning the global severity of, new regulations and policies adopted to and actions taken to contain the outbreak, which are highly uncertain and unpredictable. Any prolonged disruption of our businesses or those of our customers or business partners could negatively impact our results of operations and financial condition. In addition, our results of operations could be adversely affected to the extent that any of these epidemics and outbreaks harms the Chinese or global economy in general. For example, any economic slowdown in China due to the outbreak of COVID-19 may have a negative impact on our capital expenditures, which may further result in insufficient funds for our future expansion or growth and decreases in our revenues, and our business, results of operations and financial conditions may be adversely and materially affected.

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Our independent registered public accounting firm, like other independent registered public accounting firms operating in China, is not permitted to be subject to inspection by the Public Company Accounting Oversight Board and, as such, you are deprived of the benefits of such inspection.

Our independent registered public accounting firm that issues the audit reports included in our annual reports filed with the U.S. Securities and Exchange Commission, or SEC, as auditors of companies that are traded publicly in the United States and a firm registered with the U.S. Public Company Accounting Oversight Board (United States), or the PCAOB, is required by the laws of the United States to undergo regular inspections by the PCAOB to assess its compliance with the laws of the United States and professional standards. Because our auditors are located in the People's Republic of China, a jurisdiction where the PCAOB is currently unable to conduct inspections without the approval of the Chinese authorities, our auditors, like other independent registered public accounting firms operating in China, are currently not inspected by the PCAOB. In May 2013, PCAOB announced that it had entered into a Memorandum of Understanding on Enforcement Cooperation with the China Securities Regulatory Commission, or the CSRC, and the Ministry of Finance, which establishes a cooperative framework between the parties for the production and exchange of audit documents relevant to investigations undertaken by PCAOB, the CSRC, or the Ministry of Finance in the United States and the PRC, respectively. PCAOB continues to be in discussions with the CSRC and the Ministry of Finance to permit joint inspections in the PRC of audit firms that are registered with PCAOB and audit Chinese companies that trade on U.S. exchanges. On December 7, 2018, the SEC and the PCAOB issued a joint statement highlighting continued challenges faced by the U.S. regulators in their oversight of financial statement audits of U.S.-listed companies with significant operations in China. The joint statement reflects a heightened interest in an issue that has vexed U.S. regulators in recent years. However, it remains unclear what further actions the SEC and PCAOB will take to address the problem.

Inspections of other firms that the PCAOB has conducted outside China have identified deficiencies in those firms' audit procedures and quality control procedures, which may be addressed as part of the inspection process to improve future audit quality. The inability of the PCAOB to conduct inspections of auditors in China makes it more difficult to evaluate the effectiveness of our auditor's audit procedures or quality control procedures as compared to auditors outside of China that are subject to PCAOB inspections. Investors may lose confidence in our reported financial information and procedures and the quality of our financial statements, which may have a material adverse effect on our ADS price.

As part of a continued regulatory focus in the United States on access to audit and other information currently protected by national law, in particular China's, in June 2019, a bipartisan group of lawmakers introduced bills in both houses of the U.S. Congress, which if passed, would require the SEC to maintain a list of issuers for which PCAOB is not able to inspect or investigate an auditor report issued by a foreign public accounting firm. The proposed Ensuring Quality Information and Transparency for Abroad-Based Listings on our Exchanges ("EQUITABLE") Act prescribes increased disclosure requirements for these issuers and, beginning in 2025, the delisting from U.S. national securities exchanges such as the NASDAQ Global Market of issuers included on the SEC's list for three consecutive years. Enactment of this legislation or other efforts to increase U.S. regulatory access to audit information could cause investor uncertainty for affected issuers, including us, and the market price of our ADSs and ordinary shares could be adversely affected. It is unclear if this proposed legislation will be enacted. Furthermore, there has been recent deliberations within the U.S. government regarding potentially limiting or restricting China-based companies from accessing U.S. capital markets. If any such policies were to materialize, the resulting legislation, if it were to apply to us, would likely have a material adverse impact on our business and the price of our ADSs and ordinary shares.

Proceedings instituted recently by the SEC against five PRC-based accounting firms, including our independent registered public accounting firm, could result in our financial statements being determined to not be in compliance with the requirements of the Exchange Act.

In late 2012, the SEC commenced administrative proceedings under Rule 102(e) of its Rules of Practice and also under the Sarbanes-Oxley Act of 2002 against the Chinese affiliates of the "big four" accounting firms, (including our auditors) and also against Dahua (the former BDO affiliate in China). The Rule 102(e) proceedings initiated by the SEC relate to these firms' inability to produce documents, including audit work papers, in response to the request of the SEC pursuant to Section 106 of the Sarbanes-Oxley Act of 2002, as the auditors located in the PRC are not in a position lawfully to produce documents directly to the SEC because of restrictions under PRC law and specific directives issued by the China Securities Regulatory Commission. The issues raised by the proceedings are not specific to our auditors or to us, but affect equally all audit firms based in China and all China-based businesses with securities listed in the United States.

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In January 2014, the administrative judge reached an initial decision that the “big four” accounting firms should be barred from practicing before the Commission for six months. The “big four” accounting firms appealed the initial administrative law decision to the SEC in February 2014. In February 2015, each of the “big four” accounting firms agreed to a censure and to pay a fine to the SEC to settle the dispute and avoid suspension of their ability to practice before the SEC. The settlement requires the firms to follow detailed procedures to seek to provide the SEC with access to Chinese firms’ audit documents via China Securities Regulatory Commission. If the firms do not follow these procedures, the SEC could impose penalties such as suspensions, or it could restart the administrative proceedings.

In the event that the SEC restarts the administrative proceedings, depending upon the final outcome, listed companies in the United States with major PRC operations may find it difficult or impossible to retain auditors in respect of their operations in the PRC, which could result in financial statements being determined not to be in compliance with the requirements of the Securities Exchange Act of 1934, or Exchange Act, including possible delisting. Moreover, any negative news about the proceedings against these audit firms may cause investor uncertainty regarding China-based, United States-listed companies and the market price of our ADSs may be adversely affected.

If our independent registered public accounting firm were denied, even temporarily, the ability to practice before the SEC and we were unable to timely find another registered public accounting firm to audit and issue an opinion on our financial statements, our financial statements could be determined not to be in compliance with the requirements of the Exchange Act. Such a determination could ultimately lead to delisting of our ordinary shares from the Nasdaq Global Select Market or deregistration from the SEC, or both, which would substantially reduce or effectively terminate the trading of our ADSs in the United States.

Risks Related to Our Corporate Structure

If the PRC government finds that the arrangements that establish the structure for operating our business do not comply with PRC government restrictions on foreign investment in the telecommunications business or if these regulations or the interpretation of existing regulations change in the future, we could be subject to severe penalties or be forced to relinquish our interests in those operations.

The PRC government regulates telecommunications-related businesses through strict business licensing requirements and other government regulations. These laws and regulations also include limitations on foreign ownership of PRC companies that engage in telecommunications-related businesses. Specifically, foreign investors are not allowed to own more than a 50% equity interest in any PRC company engaging in value-added telecommunications businesses (except for e-commerce, domestic multi-party communications services, information storage and re-transmission services, and call center services), and the major foreign investor of a telecommunication business in China must also have experience and a sound track record in providing value-added telecommunications services overseas. See “Item 4. Information on the Company—B. Business Overview—Regulations—Regulations on Foreign Investment in Telecommunications Enterprises.”

Because we are a Cayman Islands company, we are classified as a foreign enterprise under PRC laws and regulations, and our wholly-owned PRC subsidiaries, 21Vianet Data Center Co., Ltd., or 21Vianet China, Joytone Infotech Co., Ltd., or SZ Zhuoaiyi, and Abitcool (China) Broadband Inc., or aBitCool DG, are foreign-invested enterprises, or FIEs. To comply with PRC laws and regulations, we conduct our business in China through contractual arrangements with our variable interest entities and their shareholders. These contractual arrangements provide us with effective control over our variable interest entities, and enable us to receive substantially all of the economic benefits of our consolidated affiliated entities in consideration for the services provided by our wholly-owned PRC subsidiaries, and have an exclusive option to purchase all of the equity interest in our variable interest entities when permissible under PRC laws. For a description of these contractual arrangements, see “Item 7.B—Related Party Transactions—Contractual Arrangements with Our Variable Interest Entities and Their Shareholders.”

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The MIIT issued a circular in July 2006 requiring foreign investors to set up an FIE and obtain a value-added telecommunications business operating license, or the VAT License, in order to conduct any value-added telecommunications business in China. Pursuant to this circular, a domestic license holder is prohibited from leasing, transferring or selling the license to foreign investors in any form, and from providing any assistance, including resources, sites or facilities, to foreign investors that conduct value-added telecommunications business in China illegally. Furthermore, the relevant trademarks and domain names that are used in the value-added telecommunications business must be owned by the local license holder or its shareholder. The circular further requires each license holder to have the necessary facilities for its approved business operations and to maintain such facilities in the regions covered by its license. In addition, all value-added telecommunications service providers are required to maintain network and information security in accordance with the standards set forth under relevant PRC regulations. Companies in violation of the circular will be ordered by relevant authorities to take remedial actions within a specific period and licenses may be withdrawn if such remedial actions cannot be completed within the specific period. As of the date of this annual report, we have not been notified by relevant authorities regarding any violation of the circular when conducting our value-added telecommunications business.

We believe that we comply with the current applicable PRC laws and regulations. Han Kun Law Offices, our PRC legal counsel, based on its understanding of the relevant laws and regulations, is of the opinion that each of the contracts composing the contractual arrangements among us, our wholly-owned PRC subsidiaries, our variable interest entities and their shareholders is valid, legally binding and enforceable upon each party of such agreements under PRC laws and regulations, and will not result in any violation of PRC laws or regulations currently in effect. However, as there are substantial uncertainties regarding the interpretation and application of PRC laws and regulations, including the Regulations on Mergers and Acquisitions of Domestic Enterprises by Foreign Investors, or the M&A Rules, the telecommunications circular described above and the Telecommunications Regulations of the People's Republic of China, or the Telecom Regulations, and the relevant regulatory measures concerning the telecommunications industry, therefore, we cannot assure you that the PRC government that regulate providers of data center service and other telecommunication services and other participants in the telecommunications industry would agree that our corporate structure or any of the above contractual arrangements comply with PRC licensing, registration or other regulatory requirements, with existing policies or with requirements or policies that may be adopted in the future. PRC laws and regulations governing the validity of these contractual arrangements are uncertain and the relevant government authorities have broad discretion in interpreting these laws and regulations.

If our corporate and contractual structure is deemed by the MIIT, or other regulators having competent authority, to be illegal, either in whole or in part, we may lose control of our consolidated affiliated entities and have to modify such structure to comply with regulatory requirements. However, we cannot assure you that we can achieve this without material disruption to our business. Further, if our corporate and contractual structure is found to be in violation of any existing or future PRC laws or regulations, the relevant regulatory authorities would have broad discretion in dealing with such violations, including:

- revoking our business and operating licenses;
- levying fines on us;
- confiscating any of our income that they deem to be obtained through illegal operations;
- shutting down a portion or all of our networks and servers;
- discontinuing or restricting our operations in China;
- imposing conditions or requirements with which we may not be able to comply;
- requiring us to restructure our corporate and contractual structure;
- restricting or prohibiting our use of the proceeds from overseas offering to finance our PRC affiliated entities' business and operations; and
- taking other regulatory or enforcement actions that could be harmful to our business.

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Furthermore, in connection with litigation, arbitration or other judicial or dispute resolution proceedings, assets under the name of any of record holder of equity interest in our variable interest entities, including such equity interest, may be put under court custody. As a consequence, we cannot be certain that the equity interest will be disposed pursuant to the contractual arrangement or ownership by the record holder of the equity interest. In addition, new PRC laws, rules and regulations may be introduced to impose additional requirements that may be applicable to our corporate structure and contractual arrangements. Occurrence of any of these events could materially and adversely affect our business, financial condition and results of operations. In addition, if the imposition of any of these penalties or requirement to restructure our corporate structure causes us to lose the rights to direct the activities of our variable interest entities or our right to receive their economic benefits, we would no longer be able to consolidate such variable interest entities. However, we do not believe that such actions would result in the liquidation or dissolution of our company, our wholly-owned subsidiaries in China or our variable interest entities or their subsidiaries. For the years ended December 31, 2017, 2018 and 2019, our consolidated affiliated entities contributed most of our total net revenues.

Our contractual arrangements with our variable interest entities may result in adverse tax consequences to us.

We could face material and adverse tax consequences if the PRC tax authorities determine that our contractual arrangements with our variable interest entities were not made on an arm's length basis and may adjust our income and expenses for PRC tax purposes by requiring a transfer pricing adjustment. A transfer pricing adjustment could adversely affect us by (i) resulting in a reduction of expense deductions recorded by our VIEs for PRC tax purposes, which could in turn increase their tax liabilities without reducing their respective tax expenses, which could further result in late payment fees and other penalties to our variable interest entities for underpaid taxes; or (ii) limiting the ability of our variable interest entities to obtain or maintain preferential tax treatments and other financial incentives.

We rely on contractual arrangements with our variable interest entities and their shareholders for our China operations, which may not be as effective as direct ownership in providing operational control.

We rely on contractual arrangements with our variable interest entities and their shareholders to operate our business in China. For a description of these contractual arrangements, see "Item 7.B—Related Party Transactions—Contractual Arrangements with Our Variable Interest Entities and Their Shareholders." Most of our revenues are attributed to our consolidated affiliated entities. These contractual arrangements may not be as effective as direct ownership in providing us with control over our variable interest entities. If our variable interest entities or their shareholders fail to perform their respective obligations under these contractual arrangements, our recourse to the assets held by our consolidated affiliated entities is indirect and we may have to incur substantial costs and expend significant resources to enforce such arrangements in reliance on legal remedies under PRC law. These remedies may not always be effective, particularly in light of uncertainties in the PRC legal system.

All of these contractual arrangements are governed by PRC law and provide for the resolution of disputes through arbitration in the PRC. Accordingly, these contracts would be interpreted in accordance with PRC laws and any disputes would be resolved in accordance with PRC legal procedures. The legal environment in the PRC is not as developed as in other jurisdictions, such as the United States. As a result, uncertainties in the PRC legal system could limit our ability to enforce these contractual arrangements. In the event that we are unable to enforce these contractual arrangements, or if we suffer significant time delays or other obstacles in the process of enforcing these contractual arrangements, it would be very difficult to exert effective control over our variable interest entities, and our ability to conduct our business and our financial conditions and results of operation may be materially and adversely affected. See "—Risks Related to Doing Business in China—Uncertainties with respect to the PRC legal system could limit legal protections available to you and us."

The shareholders of our variable interest entities may have potential conflicts of interest with us, which may materially and adversely affect our business and financial condition.

We conduct our operations in China through contractual arrangements among us, our wholly-owned PRC subsidiaries, our variable interest entities and their shareholders and we rely on the shareholders of our variable interest entities to abide by the obligations under such contractual arrangements. In particular, 21Vianet Technology is 70% owned by Mr. Sheng Chen, our executive chairman and 30% owned by Mr. Jun Zhang, our co-founder. Mr. Sheng Chen and Mr. Jun Zhang are also the ultimate shareholders of our company. The interests of Mr. Sheng Chen and Mr. Jun Zhang as the shareholders of 21Vianet Technology may differ from the interests of our company as a whole, as what is in the best interests of 21Vianet Technology may not be in the best interests of our company. We cannot assure that when conflicts of interest arise, any or all of these individuals will act in the best interests of our company or that conflicts of interest will be resolved in our favor. In addition, these individuals may breach or cause our variable interest entities and their subsidiaries to breach or refuse to renew the existing contractual arrangements with us.

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Currently, we do not have arrangements to address potential conflicts of interest the shareholders of 21Vianet Technology may encounter, on one hand, and as a beneficial owner of our company, on the other hand; provided that we could, at all times, exercise our option under the optional share purchase agreement to cause them to transfer all of their equity ownership in 21Vianet Technology to a PRC entity or individual designated by us as permitted by the then applicable PRC laws. In addition, if such conflicts of interest arise, we could also, in the capacity of attorney-in-fact of the then existing shareholders of 21Vianet Technology as provided under the power of attorney, directly appoint new directors of 21Vianet Technology. We rely on the shareholders of our variable interest entities to comply with the laws of China, which protect contracts and provide that directors and executive officers owe a duty of loyalty to our company and require them to avoid conflicts of interest and not to take advantage of their positions for personal gains, and the laws of the Cayman Islands, which provide that directors have a duty of care and a duty of loyalty to act honestly in good faith with a view to our best interests. However, the legal frameworks of China and Cayman Islands do not provide guidance on resolving conflicts in the event of a conflict with another corporate governance regime. If we cannot resolve any conflicts of interest or disputes between us and the shareholders of our variable interest entities, we would have to rely on legal proceedings, which could result in disruption of our business and subject us to substantial uncertainty as to the outcome of any such legal proceedings.

Risks Related to Doing Business in China

Adverse changes in political and economic policies of the PRC government could have a material adverse effect on the overall economic growth of China, which could reduce the demand for our services and adversely affect our competitive position.

Most of our operations are conducted in China and most of our sales are made in China. Accordingly, our business, financial condition, results of operations and prospects are affected significantly by economic, political and legal developments in China. The PRC economy differs from the economies of most developed countries in many respects, including the amount of government involvement, the level of development, the growth rate, the control of foreign exchange and allocation of resources. While the PRC economy has grown significantly over the past several decades, the growth has been uneven across different periods, regions and among various economic sectors of China. We cannot assure you that the PRC economy will continue to grow, or that if there is growth, such growth will be steady and uniform, or that if there is a slowdown, such a slowdown will not have a negative effect on our business.

The PRC government exercises significant control over China's economic growth through various measures, such as allocation of resources, controlling payment of foreign currency-denominated obligations, setting monetary policy and providing preferential treatment to particular industries or companies. Some of these measures benefit the overall PRC economy, but may also have a negative effect on us. For example, our financial condition and results of operations may be adversely affected by governmental control over capital investments or changes in tax regulations that are applicable to us.

In addition, it is unclear whether PRC economic policies will be effective in maintaining stable economic growth in the future. Any slowdown in China's economic growth could lead to reduced demand for our solutions, which could in turn materially and adversely affect our business, financial condition and results of operations.

Uncertainties with respect to the PRC legal system could limit legal protections available to you and us.

We conduct most of our business through our PRC subsidiaries and consolidated affiliated entities in China. Our operations in China are governed by PRC laws and regulations. Our PRC subsidiaries are FIEs and are subject to laws and regulations applicable to foreign investment in China and, in particular, laws applicable to FIEs.

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The PRC legal system is a civil law system based on written statutes. Unlike the common law system, prior court decisions may be cited for reference but are not binding.

Since late 1970s, the PRC government has been developing a comprehensive system of laws and regulations governing economic matters in general. The overall effect of legislation over the past several decades has significantly enhanced the protections afforded to various forms of foreign investments in China. However, China has not developed a fully integrated legal system, and recently enacted laws and regulations may not sufficiently cover all aspects of economic activities in China. In particular, because these laws and regulations are relatively new, and because of the limited volume of published decisions and their nonbinding nature, the interpretation and enforcement of these laws and regulations involve uncertainties. In addition, the PRC legal system is based in part on government policies and internal rules, some of which may not be published on a timely basis or at all, and some of which may have a retroactive effect. As a result, we may not be aware of our violation of these policies and rules until sometime after the violation. Any administrative and court proceedings in China may be protracted, resulting in substantial costs and diversion of resources and management attention. However, since PRC administrative and court authorities have significant discretion in interpreting and implementing statutory and contractual terms, it may be more difficult to evaluate the outcome of administrative and court proceedings and the level of legal protection we enjoy than in more developed legal systems. These uncertainties may also impede our ability to enforce the contracts we have entered into. As a result, these uncertainties could materially and adversely affect our business and results of operations.

Uncertainties exist with respect to the interpretation and implementation of the newly enacted PRC Foreign Investment Law and how it may impact the viability of our current corporate structure, corporate governance and business operations.

On January 1, 2020, the Foreign Investment Law, as well as the Regulations for Implementation of the Foreign Investment Law of the People's Republic of China, or the Implementation Regulations, came into effect and replaced the trio of existing laws regulating foreign investment in China, namely, the Sino-foreign Equity Joint Venture Enterprise Law, the Sino-foreign Cooperative Joint Venture Enterprise Law and the Wholly Foreign-invested Enterprise Law, together with their implementation rules and ancillary regulations.

The Foreign Investment Law and the Implementation Regulations embody an expected PRC regulatory trend to rationalize 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, since they are relatively new, uncertainties still exist in relation to their interpretation and implementation. For instance, under the Foreign Investment Law, “foreign investment” refers to the investment activities directly or indirectly conducted by foreign individuals, enterprises or other entities in China. Though it does not explicitly classify contractual arrangements as a form of foreign investment, there is no assurance that foreign investment via contractual arrangement would not be interpreted as a type of indirect foreign investment activities under the definition in the future. In addition, the definition contains a catch-all provision which includes investments made by foreign investors through means stipulated in laws or administrative regulations or other methods prescribed by the State Council. Therefore, it still leaves leeway for future laws, administrative regulations or provisions promulgated by the State Council to provide for contractual arrangements as a form of foreign investment. In any of these cases, it will be uncertain whether our contractual arrangements will be deemed to be in violation of the market access requirements for foreign investment under the PRC laws and regulations. The “variable interest entity” structure, or VIE structure, has been adopted by many PRC-based companies, including us, to obtain necessary licenses and permits in the industries that are currently subject to foreign investment restrictions in China. See “—Risks Related to Our Corporate Structure” and Item 4.C “—Organizational Structure.”

Furthermore, if future laws, administrative regulations or provisions prescribed by the State Council mandate further actions to be taken by companies with respect to existing contractual arrangements, we may face substantial uncertainties as to whether we can complete such actions in a timely manner, or at all. Failure to take timely and appropriate measures to cope with any of these or similar regulatory compliance challenges could materially and adversely affect our current corporate structure, corporate governance and business operations.

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We may rely on dividends paid by our operating subsidiaries to fund cash and financing requirements, and limitations on the ability of our operating subsidiaries to make payments to us could have a material adverse effect on our ability to conduct our business and fund our operations.

We are a holding company and conduct our business primarily through our operating subsidiaries and our consolidated affiliated entities, most of which are limited liability companies established in China. We may rely on dividends paid by our subsidiaries for our cash needs, including the funds necessary to pay dividends and other cash distributions to our shareholders, to service any debt we may incur and to pay our operating expenses. The payment of dividends by entities organized in China is subject to limitations. In particular, regulations in China currently permit payment of dividends only out of accumulated profits as determined in accordance with the PRC accounting standards and regulations. Our PRC subsidiaries are also required to set aside at least 10% of their after-tax profit based on PRC accounting standards each year to their statutory reserves until the accumulative amount of such reserves reaches 50% of their registered capital. These reserves are not distributable as cash dividends. Furthermore, any portion of its after-tax profits that a subsidiary has allocated to its staff welfare and bonus fund at the discretion of its board of directors is also not distributable as cash dividends. Moreover, if our operating subsidiaries incur any debt on their own behalf in the future, the instruments governing the debt may restrict their ability to pay dividends or make other distributions to us. Any limitation on the ability of our operating subsidiaries, including in particular 21Vianet China, to distribute dividends and other distributions to us could materially and adversely limit our ability to make investments or acquisitions that could be beneficial to our businesses, pay dividends or otherwise fund and conduct our business.

If we fail to acquire, obtain or maintain applicable telecommunications licenses, or are deemed by relevant governmental authorities to be operating without full compliance with the laws and regulations, our business would be materially and adversely affected.

Pursuant to the Telecommunications Regulations promulgated by the PRC State Council in September 2000 and amended in July 2014 and February 2016, respectively, telecommunications businesses are divided into two categories, namely, (i) “basic telecommunications businesses,” which refers to businesses that provide public network infrastructure, public data transmission and basic voice communications services, and (ii) “value-added telecommunications businesses,” which refer to businesses that provide telecommunications and information services through the public network infrastructure. If the value-added telecommunications service covers two or more provinces, autonomous regions or municipalities, such service must be approved by the MIIT and the service provider must obtain a Cross-Regional Value Added Telecommunications Business Operation License, or the Cross-Regional VAT License.

Pursuant to the Cross-Regional VAT License issued to Beijing 21Vianet Broad Band Data Center Co., Ltd., or 21Vianet Beijing, by the MIIT on January 17, 2012 (which was most recently updated on August 26, 2019) with a term effective until January 23, 2022, 21Vianet Beijing is permitted to carry out its(i) full data center business under the first category of “value-added telecommunications business” across two province-level municipalities and four cities in China; (ii) data center business (excluding internet resources coordination service) under the first category of “value-added telecommunications business” across two province-level municipalities and 18 cities in China; (iii) VPN services under the first category of “value-added telecommunications business” across 13 province-level municipalities and provinces in China, and internet access service (solely providing services for website users) under the first category of “value-added telecommunications business” across six provinces in China; (v) domestic multi-party communications services under the second category of “value-added telecommunications business” across China; and (vi) domestic data transmission services through fixed network under the second category of “basic telecommunications business” across China. In addition, 21Vianet Beijing recently has been permitted to conduct data center business (excluding internet resources coordination service) under the first category of “value-added telecommunications business” in Zhengzhou and Wuhan in China, but we have not received the updated license as the relevant renewal process of the MIIT has been delayed due to the outbreak of COVID-19.

Pursuant to the Cross-Regional VAT License issued to BJ iJoy by the MIIT on October 23, 2019 with a term effective until May 6, 2024, BJ iJoy is permitted to carry out its (i) data center business (excluding internet resources coordination service) under the first category of “value-added telecommunications business” across two province-level municipalities and one city in China; (ii) VPN services under the first category of “value-added telecommunications business” across three province-level municipalities and provinces in China; (iii) internet access service under the first category of “value-added telecommunications business” across three province-level municipalities and provinces in China; and (iv) information service business (excluding internet information service) under the second category of “value-added telecommunications business” across China. In addition, pursuant to the VAT License issued to BJ iJoy by Beijing Communications Administration on November 20, 2019 with a term effective until October 8, 2023, BJ iJoy is permitted to carry out the information service business (limited to internet information service) under the second category of “value-added telecommunications business”.

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Pursuant to the Cross-Regional VAT License issued to 21Vianet Technology by the MIIT on December 3, 2019 with a term effective until June 20, 2023, 21Vianet Technology is permitted to carry out its internet access service under the first category of “value-added telecommunications business” across three province-level municipalities and provinces in China. In addition, Shanghai Xiangyun 21Vianet Technology Co., Ltd, or SH 21Vianet, a wholly-owned subsidiary of 21Vianet Technology, has obtained a VAT License issued by Shanghai Communications Administration on July 1, 2019 with a term effective until March 31, 2023, which allows it to provide internet access service (providing services for website users and internet platforms) under the first category of “value-added telecommunications business” in Shanghai.

Pursuant to the Cross-Regional VAT License issued to Jiangsu 21Vianet Data Center Co., Ltd., or JS 21Vianet, by the MIIT on November 4, 2019 with a term effective until November 4, 2024, JS 21Vianet is permitted to carry out its (i) data center business (excluding internet resources coordination service) under the first category of “value-added telecommunications business” in Shanghai, Nanjing and Suzhou; and (ii) internet access service under the first category of “value-added telecommunications business” across two province-level municipalities and provinces in China.

Pursuant to the Cross-Regional VAT License issued to Shenzhen Diyixian Telecommunication Co., Ltd., or SZ DYX, by the MIIT on September 18, 2013 (which was updated on July 17, 2019) with a term effective until June 4, 2023, SZ DYX is permitted to carry out (i) VPN services under the first category of “value-added telecommunications business” in China; (ii) call center business under the second category of “value-added telecommunications business” across China; (iii) data center business under the first category of “value-added telecommunications business”, which covers the services in Beijing, Shanghai and Shenzhen; (iv) data center business (solely providing internet resources coordination service) under the first category of “value-added telecommunications business”, which covers the services in six cities in China; (v) internet access service under the first category of “value-added telecommunications business” across three province-level municipalities and provinces in China; and (vi) internet access service (solely providing services for website users) under the first category of “value-added telecommunications business” across 28 province-level municipalities and provinces in China.

Pursuant to the VAT License issued to BJ Yilong by Beijing Communications Administration on November 27, 2018 with a term effective until September 9, 2020, BJ Yilong is permitted to carry out its information service business (excluding internet information service) under the second category of “value-added telecommunications business” in Beijing. In addition, pursuant to the VAT License issued to BJ Yilong by Beijing Communications Administration on November 27, 2018 with a term effective until September 24, 2020, BJ Yilong is permitted to carry out the information service business (limited to internet information service) under the second category of “value-added telecommunications business”.

Pursuant to the VAT License issued to Shanghai Blue Cloud Technology Co., Ltd., or SH Blue Cloud, by Shanghai Communications Administration on October 20, 2017 (which was updated on October 25, 2019 to revise the categories of permitted business) with a term effective until October 20, 2022, SH Blue Cloud is permitted to carry out (i) information service business (limited to internet information service) under the second category of “value-added telecommunications business”; (ii) online data processing and transaction processing service (solely providing for e-commerce services) under the second category of “value-added telecommunications business”; and (iii) internet domain name resolution service under the second category of “value-added telecommunications business” in Shanghai. In addition, SH Blue Cloud obtained the Cross-Regional VAT License issued by the MIIT on January 21, 2020 with a term effective until January 21, 2025, pursuant to which SH Blue Cloud is permitted to carry out (i) data center business under the first category of “value-added telecommunications business” in Beijing and Shanghai; (ii) CDN service under the first category of “value-added telecommunications business” in Beijing and Shanghai; (iii) VPN services under first category of “value-added telecommunications business” in Beijing and Shanghai; and (iv) internet access service under the first category of “value-added telecommunications business” in Beijing and Shanghai.

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We have been continuously developing our hosting service to better serve our customers, and as a result, we introduce new technologies and services from time to time to support and improve our current business. However, we cannot assure you that PRC governmental authorities will continue to deem our hosting service and any of our newly developed technologies, network and services used in our business as a type of value-added telecommunications business covered under the Cross-Regional VAT License issued to 21Vianet Beijing, BJ iJoy, 21Vianet Technology, JS 21Vianet, SH Blue Cloud and SZ DYX, and the VAT License issued to BJ Yilong, SH 21Vianet and SH Blue Cloud. Furthermore, we cannot rule out the possibility that PRC legislators or governmental authorities will promulgate any new laws or regulations or update the current and existing laws and regulations which may clearly define or categorize our hosting service and any of our newly developed technologies, network and services used in our business as a type of basic telecommunication business, which is not covered by our VAT Licenses. As we expand our networks across China, it is also possible that the MIIT, in the future, may deem our operations to have exceeded the terms of our existing licenses. Further, we cannot assure you that 21Vianet Beijing, BJ iJoy, 21Vianet Technology, JS 21Vianet, SH Blue Cloud, SZ DYX, SH 21Vianet and BJ Yilong will be able to successfully renew their value added telecommunications business operating licenses upon their expiration, or maintain their annual inspection, nor can we ensure that we will be able to obtain any other licenses necessary for us to carry out our business, or that our existing licenses will continue to cover all aspects of our operations upon their renewal.

MIIT initiated a periodical pilot scheme for broadband access business by issuing the Notice on Liberalizing the Broadband Access Market to Private Capital on December 25, 2014, or the Broadband Notice, pursuant to which, the qualified private sector enterprises are encouraged, but not required, to apply to participate in the pilot scheme in broadband access business and the pilot scheme lasts for 3 years commencing on March 1, 2015. From 2015 to 2017, MIIT issued a series of notices in succession to expand the pilot scheme to all cities in nine provinces and several designated cities in other provinces. On June 19, 2018, MIIT issued the Notice on Deepening the Pilot Scheme in Broadband Access Business to extend the effective period of the pilot scheme to December 31, 2020 and further expand the pilot scheme to all cities in fourteen provinces and several designated cities in other provinces. As of the date of this annual report, we are qualified to provide broadband access services in Beijing.

We believe the pilot scheme represents the current administration's continuous efforts in carrying out the recent policies of the PRC State Council and MIIT regarding encouraging private sectors to further participate in the telecommunication industry. The Broadband Notice specifically mentioned that the broadband access business is a basic telecommunication business. The pilot scheme, to some extent, reflects a legislative trend to welcome private enterprises (in comparison to the state-owned enterprise) to participate in basic telecommunication businesses in the future. Nevertheless, new laws, regulations or government interpretations may also be promulgated from time to time to regulate the hosting service or any of our related technology or services, which may require us to obtain additional, or expand existing, operating licenses or permits. Any of these factors could result in our disqualification from carrying out our current business, causing significant disruption to our business operations which may materially and adversely affect our business, financial condition and results of operations. We will be closely monitoring the developments of relevant laws and regulations.

Furthermore, the MIIT has strengthened its oversight on the Internet access service market in recent years, which is underscored by the Circular on Clearing Up and Regulating the Internet Access Service Market issued by the MIIT in January 2017 and the Circular on Deepening the Work of Clearing Up and Regulating the Internet Access Service Market issued by the MIIT in April 2018. According to these two circulars, the regulator has launched a series of inspections and rectifications to regulate the market, which will last until March 31, 2019. For example, in February 2018, MIIT issued an internal notice, or the MIIT Internal Notice, pursuant to which telecommunication authorities will carry out a special enforcement campaign to inspect the operations of certain licensed telecommunications operators. In particular, the authorities will pay special attention to any improper operational activities, such as unauthorized establishment of transmission network, unlicensed operation of cross-border business and improper sublease of broadband resources. According to MIIT Internal Notice, basic telecommunication service providers should exercise extra prudence when considering providing additional network resources to the enterprises under inspection. If the enterprise is found to be engaged in non-compliant operations, it may be subject to various penalties, including suspension of network access, suspension of approving its application for new operation permit until rectification being completed, being publicized as an operator with discredit record or non-compliance record, enhanced oversight of the authority and limitation on new telecommunication business, depending on the seriousness of the violations and the rectification result. The MIIT Internal Notice mandates that the foregoing inspection and scrutiny to be completed by September 30, 2018. According to the MIIT Internal Notice, 47 industry players are subject to the special inspection, including two of our consolidated affiliated entities, 21Vianet Beijing and SZ DYX. After the MIIT Internal Notice was issued, we closely communicated with the in-charge authority to clarify the inspection requirements of the authority and cooperate with them to review our business practices and compliance status. As of the date of this annual report, we have not received any further investigation notice or rectification order in connection with the MIIT Internal Notice from the government authorities. Nevertheless, we cannot assure you that the government authorities will not conduct similar inspections from time to time in the future and may determine that we are not in full compliance with the regulatory requirements, especially the authority's enhanced regulation on cross-border VPN business. If we are found to violate any operation requirements, we may be imposed on any of the administrative penalties mentioned in the MIIT Internal Notice, which may result in a material and adverse effect on our ability to conduct our operations and our financial conditions.

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In addition, the MIIT and other relevant regulatory authorities recently published a series of new regulations, policies and controls with respect to the construction or development of new data centers, and rebuilding or expansion of existing data centers. For example, on January 21, 2019, MIIT, National Government Office Administration and National Energy Administration jointly published the Guidance on Promotion of Green Data Center Construction, pursuant to which the authorities encourage data centers to adhere to certain average levels of energy conservation and aim to reach several goals including, among others, maintaining the power usage effectiveness (PUE) of newly constructed large and extra-large data centers at or below 1.4 from the year 2022 onward. There are similar policies and restrictions governing the construction and expansion of data centers in some large cities, such as Beijing and Shanghai. On September 6, 2018, the General Office of the People's Government of Beijing Municipality, or the GOPGB, issued the Beijing Municipality's Catalogue for the Prohibition and Restriction of Newly Increased Industries (2018 Edition), or the 2018 Catalogue, which is a revised edition of the catalogue GOPGB issued in 2015. The 2018 Catalogue prohibits new construction or expansion within Beijing's municipal districts of (i) data centers which are involved in providing Internet data services or information processing and storage support services, except for cloud computing data centers with PUE lower than 1.4, and (ii) call centers. Furthermore, new construction or expansion of data centers which are involved in providing Internet data services or information processing and storage support services with PUE lower than 1.4 is also prohibited within the boundaries of Beijing's Dongcheng District, Xicheng District, Chaoyang District, Haidian District, Fengtai District, Shijingshan District and Tongzhou New Town. On January 2, 2019, Shanghai Municipal Commission of Economy and Information and Shanghai Municipal Development and Reform Commission jointly published the Guidance on Strengthening the Coordinated Construction of the Internet Data Center in Shanghai Municipality, pursuant to which, authorities encourage to effectively control the construction scale and energy consumption gross of Internet data centers and aim to reach several goals including, among others, the PUE of newly constructed Internet data center shall be strictly controlled below 1.3, and the PUE of reconstructed Internet data center shall be strictly controlled below 1.4, from the year 2020 onward. Pursuant to the Notice on Selection of Proposed Newly Constructed Internet Data Center Projects in Shanghai in 2020 issued by Shanghai Municipal Commission of Economy and Information on March 25, 2020, the overall scale of newly constructed internet data center projects in Shanghai in 2020 will be limited up to 30,000 racks, the total energy consumption of which will be capped at the amount equivalent to approximately 250,000 tons of standard coal.

Under the New PRC Enterprise Income Tax Law, we may be classified as a "resident enterprise" of China. Such classification could result in unfavorable tax consequences to us and our non-PRC holders of shares and ADSs.

Pursuant to the PRC Enterprise Income Tax Law, or the EIT Law, as recently amended on December 29, 2018, and its implementation rules, which became effective on January 1, 2008 and most recently amended on April 23, 2019, an enterprise established outside of China with "de facto management bodies" within China is considered a "resident enterprise," meaning that it can be treated in a manner similar to a Chinese enterprise for enterprise income tax, or EIT, purposes. Under the implementation rules of the EIT Law, the term "de facto management body" is defined as the management body that exercises full and substantial control and overall management over the business, productions, personnel, accounts and properties of an enterprise. On April 22, 2009, the State Administration of Taxation issued the Notice Regarding the Determination of Chinese-Controlled Offshore Incorporated Enterprises as PRC Tax Resident Enterprises on the Basis of De Facto Management Bodies, or Circular 82, which is amended and supplemented by the Announcement Regarding the Determination of PRC Tax Resident Enterprises on the Basis of De Facto Management Bodies issued by the State Administration of Taxation on January 29, 2014. Circular 82 and its amendments sets out certain specific criteria and process for determining whether the "de facto management body" of a Chinese-controlled offshore incorporated enterprise is located in China.

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We do not believe that we are a “resident enterprise” for PRC EIT purposes. However, the tax resident status of an enterprise is subject to determination by the PRC tax authorities and uncertainties remain with respect to the interpretation of the term “de facto management body”. If the PRC tax authorities determine that we are a “resident enterprise” for PRC EIT purposes, a number of unfavorable PRC tax consequences could follow: (i) we may be subject to EIT at a rate of 25% on our worldwide taxable income as well as PRC EIT reporting obligations; (ii) a 10% (or a lower rate under an applicable tax treaty, if any) withholding tax may be imposed on dividends we pay to non-PRC enterprise holders (20% for non-PRC individual holders) of our shares and ADSs; and (iii) a 10% PRC tax may apply to gains realized by non-PRC enterprise holders (20% for non-PRC individual holders) of our shares and ADSs from transferring our shares or ADSs, if such income is considered PRC-source income.

Similarly, such unfavorable tax consequences could apply to our Hong Kong, Cayman and BVI subsidiaries, if either of them is deemed to be a “resident enterprise” by the PRC tax authorities. Notwithstanding the foregoing provisions, the EIT Law also provides that the dividends paid between “qualified resident enterprises” are exempt from EIT. If our Hong Kong, Cayman and BVI subsidiaries are deemed “resident enterprises” for PRC EIT purposes, the dividends they receive from their PRC subsidiaries, including 21Vianet China, may constitute dividends between “qualified resident enterprises” and therefore qualify for tax exemption. However, the definition of “qualified resident enterprise” is unclear and the relevant PRC government authorities have not yet issued guidance with respect to the processing of outbound remittances to entities that are treated as resident enterprises for PRC EIT purposes. Even if such dividends qualify as “tax-exempt income,” we cannot guarantee that such dividends will not be subject to any withholding tax.

We and our non-tax resident investors face uncertainty with respect to indirect transfers of equity interests in PRC resident enterprises by their non-PRC holding companies.

On February 3, 2015, the State Administration of Tax issued the Notice on Certain Corporate Income Tax Matters on Indirect Transfer of Properties by Non-Tax Resident Enterprises, or Circular 7. Circular 7 extends its tax jurisdiction to not only indirect transfers but also transactions involving transfer of other taxable assets, through the offshore transfer of a foreign intermediate holding company. Circular 7 also brings challenges to both the foreign transferor and transferee (or other person who is obligated to pay for the transfer) of the taxable assets. Where a non-tax resident enterprise conducts an “indirect transfer” by transferring the taxable assets indirectly by disposing of the equity interests of an overseas holding company, the non-tax resident enterprise being the transferor, or the transferee, or the PRC entity which directly owned the taxable assets may report to the relevant tax authority such indirect transfer. Using a “substance over form” principle, the PRC tax authority may re-characterize such indirect transfer as a direct transfer of the equity interests in the PRC tax resident enterprise and other properties in China. As a result, gains derived from such indirect transfer may be subject to PRC enterprise income tax, and the transferee or other person who is obligated to pay for the transfer is obligated to withhold the applicable taxes, currently at a rate of up to 10% for the transfer of equity interests in a PRC resident enterprise. Nevertheless, Circular 7 has introduced safe harbors for internal group restructurings and the purchase and sale of equity through a public securities market.

On October 17, 2017, the State Administration of Tax issued the Announcement of the State Administration of Taxation on Issues Concerning the Withholding of Non-resident Enterprise Income Tax at Source, or SAT Bulletin 37, which came into effect on December 1, 2017 and was amended on June 15, 2018. The SAT Bulletin 37 further clarifies the practice and procedure of the withholding of non-tax resident enterprise income tax. Pursuant to Circular 7 and SAT Bulletin 37, both the transferor and the transferee may be subject to penalties under PRC tax laws if the transferee fails to withhold the taxes and the transferor fails to pay the taxes. However, as these rules and notices are relatively new and there is a lack of clear statutory interpretation, we face uncertainties on the reporting and consequences on future private equity financing transactions, share exchange or other transactions involving the transfer of shares in our company by investors that are non-PRC resident enterprises, or sale or purchase of shares in other non-PRC resident companies or other taxable assets by us. Our Cayman Islands holding company and other non-PRC resident enterprises in our group may be subject to filing obligations or may be taxed if our Cayman Islands holding company and other non-PRC resident enterprises in our group are transferors in such transactions, and may be subject to withholding obligations if our Cayman Islands holding company and other non-PRC resident enterprises in our group are transferees in such transactions. For the transfer of shares in our Cayman Islands holding company by investors that are non-PRC resident enterprises, our PRC subsidiaries may be requested to assist in the filing under Circular 7 and/or SAT Bulletin 37. As a result, we may be required to expend valuable resources to comply with these rules and notices or to request the relevant transferors from whom we purchase taxable assets to comply, or to establish that our Cayman Islands holding company and other non-tax resident enterprises in our group should not be taxed under Circular 7 and/or SAT Bulletin 37, which may have a material adverse effect on our financial condition and results of operations. There is no assurance that the tax authorities will not apply Circular 7 and/or SAT Bulletin 37 to our offshore restructuring transactions where non-PRC resident investors were involved if any of such transactions were determined by the tax authorities to lack reasonable commercial purpose. As a result, we and our non-PRC resident investors may be at risk of being taxed under Circular 7 and/or SAT Bulletin 37 and may be required to comply with or to establish that we should not be taxed under Circular 7 and/or SAT Bulletin 37, which may have a material adverse effect on our financial condition and results of operations or such non-PRC resident investors’ investments in us. We have conducted acquisition transactions in the past and may conduct additional acquisition transactions in the future. We cannot assure you that the PRC tax authorities will not, at their discretion, adjust any capital gains and impose tax return filing obligations on us or require us to provide assistance for the investigation of PRC tax authorities with respect thereto. Heightened scrutiny over acquisition transactions by the PRC tax authorities may have a negative impact on potential acquisitions we may pursue in the future.

[Table of Contents](#)***Discontinuation of any of the preferential tax treatments available to us or imposition of any additional taxes could adversely affect our financial condition and results of operations.***

The EIT Law and its implementation rules unified the previously-existing separate income tax laws for domestic enterprises and FIEs and adopted a unified 25% EIT rate applicable to all resident enterprises in China, except for certain entities established prior to March 16, 2007 that are eligible for their existing preferential tax incentives, adjusted by certain transitional phase-out rules promulgated by the State Council on December 26, 2007. In addition, certain enterprises may enjoy a preferential EIT rate of 15% under the EIT Law if they qualify as High and New Technology Enterprise, or HNTE, subject to various qualification criteria.

A number of our PRC subsidiaries and consolidated affiliated entities, including 21Vianet Beijing, SH Blue Cloud, and SZ DYX are entitled to enjoy a preferential tax rate of 15% due to their qualification as HNTE. The qualification as an HNTE is subject to annual administrative evaluation and a three-year review by the relevant authorities in China. If 21Vianet Beijing, SH Blue Cloud and SZ DYX fail to maintain or renew their HNTE status, their applicable EIT rate may be increased to 25%, which could have a material adverse effect on our financial condition and results of operations.

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. This qualification will need to be assessed on an annual basis. For the years ended December 31, 2017, 2018 and 2019, the tax rate assessed for Xi'an Sub was 25%, 15% and 15%, respectively.

For the year ended December 31, 2019, our other PRC subsidiaries would be subject to an EIT rate of 25%, unless they are qualified as Small Scale and Low Profit Enterprises which would be entitled to exempt fifty percent (50%) of their income from tax and enjoy a reduced EIT rate of 20%.

The M&A Rules establish complex procedures for some acquisitions of Chinese companies by foreign investors, which could make it difficult for us to pursue growth through acquisitions in China.

The M&A Rules and other recently adopted regulations and rules concerning mergers and acquisitions established additional procedures and requirements that could make merger and acquisition activities by foreign investors more time consuming and complex. In addition, the Implementing Rules Concerning Security Review on the Mergers and Acquisitions by Foreign Investors of Domestic Enterprises, issued by the MOC in August 2011, specify that mergers and acquisitions by foreign investors involved in "an industry related to national security" are subject to strict review by the MOC, and prohibit any activities attempting to bypass such security review, including by structuring the transaction through a proxy or contractual control arrangement. We believe that our business is not in an industry related to national security, but we cannot preclude the possibility that the MOC or other government agencies may publish explanations contrary to our understanding or broaden the scope of such security reviews in the future, in which case our future acquisitions in the PRC, including those by way of entering into contractual control arrangements with target entities, may be closely scrutinized or prohibited. Moreover, the Anti-Monopoly Law requires that the MOC be notified in advance of any concentration of undertaking if certain filing thresholds are triggered. Part of our growth strategy includes acquiring complementary businesses or assets in China. Complying with the requirements of the laws and regulations mentioned above and other PRC regulations to complete such transactions could be time-consuming, and any required approval processes, including obtaining approval from the MOC, may delay or inhibit our ability to complete such transactions, which could affect our ability to expand our business or maintain our market share. If any of our acquisitions were subject to the M&A Rule and were found not to be in compliance with the requirements of the M&A Rule in the future, relevant PRC regulatory agencies may impose fines and penalties on our operations in the PRC, limit our operating privileges in the PRC, or take other actions that could have a material adverse effect on our business, financial condition, results of operations, reputation and prospects.

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PRC regulation of loans and direct investment by offshore holding companies to PRC entities may delay or prevent us from using the proceeds from our overseas offerings to make loans or additional capital contributions to our PRC subsidiaries or consolidated affiliated entities, which could materially and adversely affect our liquidity and our ability to fund and expand our business.

In utilizing the proceeds we received from our overseas offerings or in other financing activities, as an offshore holding company, we may make loans to our PRC subsidiaries or our consolidated affiliated entities in the PRC, or we may make additional capital contributions to our PRC subsidiaries or consolidated affiliated entities. Any loans to our PRC subsidiaries or our consolidated affiliated entities in the PRC are subject to PRC regulations. For example, loans by us to our PRC subsidiaries, which are FIEs, to finance their activities cannot exceed a statutory cap and must be filed with the State Administration of Foreign Exchange, or SAFE, through the online filing system of SAFE after the loan agreement is signed and no later than three business days prior to the borrower withdraws any amount.

We may also decide to finance our PRC subsidiaries for operations in China by means of capital contributions. These capital contributions must be approved by or filed with the MOC or its local counterpart. We cannot assure you that we will be able to obtain these government approvals on a timely basis, if at all, with respect to future capital contributions by us to our subsidiaries. If we fail to receive such approvals, our ability to use the proceeds from our overseas offerings and to capitalize our PRC operations may be negatively affected, which could adversely affect our liquidity and our ability to fund and expand our business.

Governmental control of currency conversion may limit our ability to receive and utilize our revenues effectively.

We earn most of our revenues and incur most of our expenses in Renminbi. However, Renminbi is not freely convertible at present.

The PRC government continues to regulate conversion between Renminbi and foreign currencies, despite the significant reduction in its control in recent years over trade transactions involving import and export of goods and services as well as other frequent routine foreign exchange transactions. These transactions are known as current account items. However, remittance of Renminbi by foreign investors into the PRC for the purposes of capital account items, such as capital contributions, is generally permitted upon obtaining specific approvals from, or completing specific registrations or filings with, the relevant authorities on a case-by-case basis and is subject to a strict monitoring system. Regulations in the PRC on the remittance of Renminbi into the PRC for settlement of capital account items are developing gradually. Currently, our PRC subsidiaries may purchase foreign currencies for settlement of current account transactions, including payments of dividends to us, without the approval of the SAFE. However, foreign exchange transactions by our PRC subsidiaries under the capital account continue to be subject to significant foreign exchange controls and require the approval of or need to register or file with PRC governmental authorities, including the SAFE. In particular, if our PRC subsidiaries borrow foreign currency loans from us or other foreign lenders, these loans must be filed with the SAFE after the loan agreement is signed and at least three business days before the borrower draws any amount from the foreign loan, and the accumulative amount of foreign currency loans borrowed by a PRC subsidiary may not exceed a statutory upper limit. If we finance our PRC subsidiaries by means of additional capital contributions, these capital contributions must be approved by or filed with the MOC or their respective local counterparts. Any existing and future restrictions on currency exchange may affect the ability of our PRC subsidiaries or affiliated entities to obtain foreign currencies, limit our ability to meet our foreign currency obligations or otherwise materially and adversely affect our business.

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In March 2015, SAFE promulgated the Circular on Reforming the Administration Approach Regarding the Foreign Exchange Capital Settlement of Foreign-invested Enterprises, or SAFE Circular No. 19, which was most recently amended on December 30, 2019. SAFE Circular No. 19 provides that, among other things, a foreign-invested enterprise may convert up to 100% of the foreign currency in its capital account into RMB on a discretionary basis according to the actual needs. On June 9, 2016, SAFE further issued the Circular of the State Administration of Foreign Exchange on Reforming and Regulating Policies on the Control over Foreign Exchange Settlement of Capital Accounts, or SAFE Circular No. 16, to further expand and strengthen such discretionary conversion reform under SAFE Circular No. 19. SAFE Circular No. 16 provides an integrated standard for conversion of foreign exchange under capital account items on a discretionary basis which applies to all enterprises registered in the PRC. Pursuant to SAFE Circular No. 16, in addition to foreign currency capital, the discretionary conversion policy expands to foreign currency debts borrowed by an enterprise (except financial institutions) and repatriated funds raised through overseas listing. In addition, SAFE Circular No. 16 has narrowed the scope of purposes for which an enterprise must not use the RMB funds so converted, which include, among others, (i) payment for expenditure beyond its business scope or otherwise as prohibited by the applicable laws and regulations; (ii) investment in securities or other financial products other than banks' principal-secured products; (iii) provision of loans to non-affiliated enterprises, except where it is expressly permitted in the business scope of the enterprise; and (iv) construction or purchase of non-self-used real properties, except for the real estate developer. On October 23, 2019, the SAFE issued the Circular on Further Advancing the Facilitation of Cross Border Trade and Investment, or SAFE Circular 28. SAFE Circular 28 provides, among others, that the foreign-invested enterprises can use RMB converted from foreign currency denominated capital for equity investment in China, provided that the equity investments are genuine and in compliance with the applicable foreign investment-related laws and regulations.

Fluctuation in exchange rates could have a material adverse effect on our results of operations and the value of your investment.

The conversion of Renminbi into foreign currencies, including U.S. dollars, is based on rates set by the People's Bank of China. The Renminbi has fluctuated against the U.S. dollar, at times significantly and unpredictably. The value of Renminbi against the U.S. dollar and other currencies is affected by changes in China's political and economic conditions and by China's foreign exchange policies, among other things. We cannot assure you that Renminbi will not appreciate or depreciate significantly in value against the U.S. dollar in the future. It is difficult to predict how market forces or PRC or U.S. government policy may impact the exchange rate between Renminbi and the U.S. dollar in the future.

As our costs and expenses are mostly denominated in RMB, any 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, such as the proceeds from our 2017 Bonds and 2020 Notes, appreciation of the Renminbi against the U.S. dollar would have an adverse effect on the Renminbi 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. These and other effects on our financial data resulting from fluctuations in the value of the RMB against the U.S. dollar could have a material and adverse effect on the market price of our ADSs and your investment. See "Item 11. Quantitative and Qualitative Disclosures about Market Risk—Foreign Exchange Risk."

Very limited hedging options are available in China to reduce our exposure to exchange rate fluctuations. To date, we have not entered into any hedging transactions in an effort to reduce our exposure to foreign currency exchange risk. While we may decide to enter into hedging transactions in the future, the availability and effectiveness of these hedges may be limited and we may not be able to adequately hedge our exposure or at all. In addition, our currency exchange losses may be magnified by PRC exchange control regulations that restrict our ability to convert Renminbi into foreign currency. As a result, fluctuations in exchange rates may have a material adverse effect on your investment.

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PRC regulations relating to the establishment of offshore special purpose vehicles by PRC residents may subject our PRC resident beneficial owners to personal liability and limit our ability to acquire PRC companies, to inject capital into our PRC subsidiaries, limit our PRC subsidiaries' ability to distribute profits to us, or otherwise materially and adversely affect us.

In October 2005, SAFE issued the Circular on the Relevant Issues in the Foreign Exchange Control over Financing and Return Investment Through Special Purpose Companies by Residents Inside China, or Circular 75, which is now replaced by the Circular on Relevant Issues Concerning Foreign Exchange Control on Domestic Residents' Offshore Investment and Financing and Roundtrip Investment through Special Purpose Vehicles, or Circular 37, issued by SAFE on July 4, 2014. According to Circular 37, PRC residents are required to register with local SAFE branches in connection with their direct establishment or indirect control of an offshore entity for the purposes of overseas investment and financing, with such PRC residents' legally owned assets or equity interests in domestic enterprises or offshore assets or interests, referred to in Circular 37 as a "special purpose vehicle." The term "control" under Circular 37 is broadly defined as the operation rights, beneficiary rights or decision-making rights acquired by the PRC residents in the offshore special purpose vehicles or PRC companies by such means as acquisition, trust, proxy, voting rights, repurchase, convertible bonds or other arrangements. Circular 37 further requires amendment to the registration in the event of any changes with respect to the basic information of the special purpose vehicle, such as changes in a PRC resident individual shareholder, name or operation period; or any significant changes with respect to the special purpose vehicle, such as increase or decrease of capital contributed by PRC individuals, share transfer or exchange, merger, division or other material event. If the shareholders of the offshore holding company who are PRC residents do not complete their registration with the local SAFE branches, the PRC subsidiaries may be prohibited from distributing their profits and proceeds from any reduction in capital, share transfer or liquidation to the offshore company, and the offshore company may be restricted in its ability to contribute additional capital to its PRC subsidiaries. Moreover, failure to comply with SAFE registration and amendment requirements described above could result in liability under PRC law for evasion of applicable foreign exchange restrictions. On February 13, 2015, SAFE promulgated a Notice on Further Simplifying and Improving Foreign Exchange Administration Policy on Direct Investment, or SAFE Notice 13, which became effective on June 1, 2015. SAFE Notice 13 has delegated to the qualified banks the authority to register all PRC residents' investment in "special purpose vehicle" pursuant to the Circular 37, except that those PRC residents who have failed to comply with Circular 37 will remain to fall into the jurisdiction of the local SAFE branches and must make their supplementary registration application with the local SAFE branches.

Our current PRC resident beneficial owners, including our co-founders Sheng Chen and Jun Zhang, have filed the foreign exchange registration in connection with their respective overseas shareholding in our company in accordance with the Circular 37 on June 10, 2014. We cannot assure you when our co-founders can successfully complete their registrations. We have also requested other PRC residents who we know hold direct or indirect interest in our company to make the necessary applications, filings and amendments as required under Circular 37 and other related rules. We attempt to comply, and attempt to ensure that these PRC residents holding direct or indirect interest in our company comply, with the relevant requirements, and those persons holding direct or indirect interests in our securities whose identities and addresses we know and who are subject to Circular 37 and the relevant SAFE regulations have conducted the registration procedures prescribed by Circular 37 and will update such registration. However, we may not be informed of the identities of all the PRC residents holding direct or indirect interest in our company, and we cannot provide any assurances that these PRC residents will comply with our request to make or obtain any applicable registrations or comply with other requirements required by Circular 37 or the relevant SAFE regulations. The failure or inability of PRC residents, including our co-founders, to make any required registrations or comply with other requirements under Circular 37 and the relevant SAFE regulations may subject such PRC residents or our PRC subsidiaries to fines and legal sanctions and may also limit our ability to contribute additional capital into or provide loans to our PRC subsidiaries and our consolidated affiliated entities, limit our PRC subsidiaries' ability to pay dividends or otherwise distribute profits to us, or otherwise materially and adversely affect us.

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Failure to comply with the registration requirements for employee share option plans may subject our equity incentive plan participants who are PRC residents or us to fines and other legal or administrative sanctions.

Since 2007, SAFE has implemented rules requiring PRC residents who participate in employee stock option plans of overseas publicly listed companies to register with SAFE or its local office and complete certain other procedures. Effective on February 15, 2012, SAFE promulgated the Circular on the Relevant Issues Concerning Foreign Exchange Administration for Domestic Individuals Participating in an Employees Share Incentive Plan of an Overseas-Listed Company, or SAFE Notice 7. Under SAFE Notice 7, PRC residents who participate in a share incentive plan of an overseas publicly listed company are required to register with SAFE and complete certain other procedures. PRC residents include directors, supervisors, management and employees of PRC domestic companies specified in the Administrative Regulations of the People's Republic of China on Foreign Exchange, regardless of nationality. SAFE Notice 7 further requires that an agent should also be designated to handle matters in connection with the exercise or sale of share options granted under the share incentive plan to participants. We and the PRC residents to whom we have granted stock options are subject to SAFE Notice 7. If we or our PRC optionees fail to comply with these regulations, we or our PRC optionees may be subject to fines and other legal or administrative sanctions.

Risks Related to our ADSs

The market price of our ADSs has fluctuated and may continue to be volatile.

The trading prices of our ADSs are likely to be volatile and could fluctuate widely due to factors beyond our control. This may happen because of broad market and industry factors, such as the performance and fluctuation in the market prices or the underperformance or declining financial results of other companies based in China that have listed their securities in the United States in recent years. The securities of some of these companies have experienced significant volatility since their initial public offerings, including, in some cases, substantial price declines in the trading prices of their securities. The trading performances of other Chinese companies' securities after their offerings may affect the attitudes of investors toward Chinese companies listed in the United States, which consequently may impact the trading performance of our ADSs, regardless of our actual operating performance. The recent ongoing administrative proceedings brought by SEC against five accounting firms in China, alleging that they refused to hand over documents to the SEC for ongoing investigations into certain China-based companies, occurs at a time when accounting scandals have eroded investor appetite for China-based companies. Any other negative news or perceptions about inadequate corporate governance practices or fraudulent accounting, corporate structure or matters of the Chinese companies may also negatively affect the attitudes of investors towards Chinese companies in general, including us, regardless of whether we have conducted any inappropriate activities. In addition, securities markets may from time to time experience significant price and volume fluctuations that are not related to our operating performance, which may have a material and adverse effect on the market price of our ADSs.

In addition, the market price for our ADSs has fluctuated since we first listed our ADSs on the Nasdaq Global Select Market on April 21, 2011. In 2019, the trading prices of our ADSs have ranged from US\$6.31 to US\$11.00 per ADS, and the last reported closing price on April 1, 2020 was US\$13.45 per ADS. The market price for our ADSs may be highly volatile and subject to wide fluctuations in response to factors including the following:

- actual or anticipated fluctuations in our quarterly results of operations and changes or revisions of our expected results;
- changes in financial estimates or recommendations by securities analysts;
- delays in the release of quarterly and annual results of operations or the filing of key documents and reports required by to filed by the U.S. securities laws;
- conditions in the internet industry in China;
- changes in the performance or market valuations of other companies that provide hosting and managed network services;

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- fluctuations of exchange rates between the Renminbi and the U.S. dollar or other foreign currencies;
- announcements by us or our competitors of new products and service offerings, significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- detrimental negative publicity about us, our competitors or our industry;
- negative short seller allegations against us;
- additions or departures of executive officers;
- sales or perceived potential sales of additional ordinary shares or ADSs;
- litigation or administrative investigations; and
- general economic or political conditions in China.

Our triple-class voting structure will limit your ability to influence corporate matters and could discourage others from pursuing any change of control transactions that holders of our Class A ordinary shares and ADSs may view as beneficial.

We have a triple-class voting structure such that our ordinary shares consist of Class A ordinary shares, Class B ordinary shares and Class C ordinary shares. In respect of matters requiring the votes of shareholders, holders of Class A ordinary shares are entitled to one vote per share, while (i) holders of Class B ordinary shares are entitled to ten votes per share and (ii) holders of Class C ordinary shares are entitled to one vote per share, except that we shall only proceed with the following matters with 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:

- 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 January 15, 2015, among the Company, King Venture Holdings Limited, Xiaomi Ventures Limited and certain other parties named therein, and the Share Subscription Agreement, dated May 23, 2016, between Company and Tuspark Innovation Venture Limited;
- entry into 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
- 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 Class B ordinary share and each Class C ordinary share is convertible into one Class A ordinary share at any time by the holder thereof, while neither Class A ordinary shares nor Class C ordinary shares are convertible into Class B ordinary shares or preferred shares under any circumstances, neither Class A ordinary shares nor Class B ordinary shares are convertible into Class C ordinary shares or preferred shares under any circumstances. Upon any transfer of Class B ordinary shares or Class C ordinary shares by a holder thereof to any person or entity which is not an affiliate of such holder, such Class B ordinary shares or Class C ordinary shares shall be automatically and immediately converted into the equal number of Class A ordinary shares.

Due to the disparate voting powers attached to these three classes, holders of our Class B ordinary shares or Class C ordinary shares have significant voting power over matters requiring shareholders' approval. This concentrated control will limit your ability to influence corporate matters and could discourage others from pursuing any potential merger, takeover or other change of control transactions that holders of Class A ordinary shares and ADSs may view as beneficial.

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Future sales of a substantial number of our ADSs in the public market, or the perception that these sales could occur, could cause the price of our ADSs to decline.

In the future, we may issue additional ordinary shares or ADSs to raise capital, and our existing shareholders could sell substantial amounts of ADSs, including those issued upon the exercise of outstanding options, in the public market. We cannot predict the size of any future issuance of ordinary shares or ADSs or the effect that future sales of our ordinary shares or ADSs would have on the market price of our ADSs. Any future sales of a substantial number of our ADSs in the public market, or the perception that these sales could occur, could cause the trading price of our ADSs to decline and impair our ability to raise capital through the sale of additional equity securities.

You may not have the same voting rights as the holders of our ordinary shares and may not receive voting materials in time to be able to exercise your right to vote.

Except as described in this annual report and in the deposit agreement, holders of our ADSs are not able to exercise voting rights attaching to the Class A ordinary shares evidenced by our ADSs on an individual basis.

Holders of our ADSs will appoint the depositary or its nominee as their representative to exercise the voting rights attaching to the underlying Class A ordinary shares represented by the ADSs. Otherwise, you will not be able to exercise your right to vote unless you withdraw the underlying Class A ordinary shares represented by the ADSs. However, you may not know of the meeting sufficiently in advance to withdraw the ordinary shares. If we ask for instructions from ADS holders, the depositary will notify you of the upcoming vote and arrange to deliver our voting materials to you. We cannot assure you that you will receive voting materials in time to instruct the depositary to vote, and it is possible that you, including persons who hold their ADSs through brokers, dealers or other third parties, will not have the opportunity to exercise a right to vote. The deposit agreement provides that if the depositary does not timely receive valid voting instructions from the ADS holders, then the depositary will, with certain limited exceptions, give a discretionary proxy to a person designated by us to vote such shares.

We are exempt from certain corporate governance requirements of Nasdaq and we intend to rely on certain exemptions.

Certain corporate governance practices in the Cayman Islands, which is our home country, are considerably different than the standards applied to U.S. domestic issuers. Nasdaq Marketplace Rules provide that foreign private issuers are exempt from certain corporate governance requirements of Nasdaq and may follow their home country practices, subject to certain exceptions and requirements to the extent that such exemptions would be contrary to U.S. federal securities laws and regulations. We currently follow our home country practice that: (i) does not require us to solicit proxy and hold meetings of our shareholders every year, (ii) does not restrict a company's transactions with directors, requiring only that directors exercise a duty of care and owe certain fiduciary duties to the companies for which they serve, (iii) does not require us to obtain shareholder approval for issuing additional securities exceeding 20% of our outstanding ordinary shares, and (iv) does not require us to seek shareholders' approval for amending our share incentive plan. As a result, our investors may not be provided with the benefits of certain corporate governance requirements of Nasdaq.

We may be classified as a passive foreign investment company for United States federal income tax purposes, which could result in adverse U.S. federal income tax consequences to U.S. holders of our ADSs or Class A ordinary shares.

Based on the market price of our ADSs and Class A ordinary shares, the value of our assets, and the composition of our assets and income, we believe that we were not a passive foreign investment company (a "PFIC") for U.S. federal income tax purposes for our taxable year ended December 31, 2019 and we do not expect to be a PFIC for the current year or for the foreseeable future. Nevertheless, the application of the PFIC rules is subject to ambiguity in several respects and, in addition, we must make a separate determination each year as to whether we are a PFIC (after the close of each taxable year). Accordingly, we cannot assure you that we will not be a PFIC for our current taxable year or for any future taxable year.

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A non-U.S. corporation, such as our company, will be considered a PFIC for U.S. federal income tax purposes for any taxable year if either (i) 75% or more of its gross income for such year consists of certain types of “passive” income or (ii) 50% or more of the value of its assets (determined on the basis of a quarterly average) during such year produce or are held for the production of passive income (the “asset test”). While we do not anticipate being a PFIC, changes in the nature of our income or assets or the value of our assets may cause us to become a PFIC for the current or any subsequent taxable year. Under circumstances where revenues from activities that produce passive income significantly increase relative to our revenues from activities that produce non-passive income or where we determine not to deploy significant amounts of cash for active purposes, our risk of becoming classified as a PFIC may substantially increase.

Although the law in this regard is not entirely clear, we treat our variable interest entities as being owned by us for U.S. federal income tax purposes because we control their management decisions and we are entitled to substantially all of their economic benefits and, as a result, we consolidate their results of operations in our consolidated U.S. GAAP financial statements. If it were determined, however, that we are not the owner of our variable interest entities for United States federal income tax purposes, we would likely be treated as a PFIC for our taxable year ended December 31, 2019 and for subsequent taxable years.

If we were to be or become a PFIC, a U.S. Holder (as defined in “Item 10.E. Additional Information—Taxation—U.S. Federal Income Tax Considerations—General”) may incur significantly increased U.S. income tax on gain recognized on the sale or other disposition of the ADSs or Class A ordinary shares and on the receipt of distributions on the ADSs or Class A ordinary shares to the extent such gain or distribution is treated as an “excess distribution” under the U.S. federal income tax rules. For more information, see “Item 10.E. Additional Information—Taxation—U.S. Federal Income Tax Considerations—Passive Foreign Investment Company Considerations.”

You may not be able to participate in rights offerings, may experience dilution of your holdings and you may not receive certain distributions on Class A ordinary shares if it is impractical to make them available to you.

We may from time to time distribute rights to our shareholders, including rights to acquire our securities. Under the deposit agreement for the ADSs, the depositary will not offer those rights to ADS holders unless both the rights and the underlying securities to be distributed to ADS holders are either registered under the Securities Act or exempt from registration under the Securities Act with respect to all holders of ADSs. We are under no obligation to file a registration statement with respect to any such rights or underlying securities or to endeavor to cause such a registration statement to be declared effective. In addition, we may not be able to take advantage of any exemptions from registration under the Securities Act. Accordingly, holders of our ADSs may be unable to participate in our rights offerings and may experience dilution in their holdings as a result.

In addition, the depositary of our ADSs has agreed to pay to you the cash dividends or other distributions it or the custodian receives on our ordinary shares or other deposited securities after deducting its fees and expenses. You will receive these distributions in proportion to the number of Class A ordinary shares your ADSs represent. However, the depositary may, at its discretion, decide that it is unlawful or impractical to make a distribution available to any holders of ADSs. For example, the depositary may determine that it is not practicable to distribute certain property through the mail, or that the value of certain distributions may be less than the cost of mailing them. In these cases, the depositary may decide not to distribute such property and you will not receive such distribution.

You may be subject to limitations on transfer of your ADSs.

Your ADSs represented by the ADRs are transferable on the books of the depositary. However, the depositary may close its transfer books at any time or from time to time when it deems expedient in connection with the performance of its duties. In addition, the depositary may refuse to deliver, transfer or register transfers of ADSs generally when our books or the books of the depositary are closed, or at any time if we or the depositary deem it advisable to do so because of any requirement of law or of any government or governmental body, or under any provision of the deposit agreement, or for any other reason.

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You may face difficulties in protecting your interests, and your ability to protect your rights through the U.S. federal courts may be limited, because we are incorporated under Cayman Islands law, conduct most of our operations in China and a majority of our officers and directors reside outside the United States.

We are incorporated in the Cayman Islands and substantially all of our assets are located outside of the United States. We conduct most of our operations in China through our wholly-owned subsidiaries in China. The majority of our officers and directors reside outside the United States and a substantial portion of the assets of those persons are located outside of the United States. As a result, it may be difficult for you to bring an action against us or against these individuals in the Cayman Islands or in China in the event that you believe that your rights have been infringed under U.S. securities laws or otherwise. Even if you are successful in bringing an action of this kind, the laws of the Cayman Islands and of China may render you unable to enforce a judgment against our assets or the assets of our directors and officers. In addition, there is uncertainty as to whether the courts of the Cayman Islands or the PRC would recognize or enforce judgments of U.S. courts against us or our directors and officers predicated upon the civil liability provisions of the securities laws of the United States or any state, and it is uncertain whether such Cayman Islands or PRC courts would be competent to hear original actions brought in the Cayman Islands or the PRC against us or our directors and officers predicated upon the securities laws of the United States or any state, on the ground that such provisions are penal in nature.

Our corporate affairs are governed by our memorandum and articles of association and by the Companies Law (2020 Revision) of the Cayman Islands and common law of the Cayman Islands. The rights of shareholders to take legal action against our directors and us, actions by minority shareholders and the fiduciary duties of our directors to us under Cayman Islands law are to a large extent governed by the common law of the Cayman Islands. The common law of the Cayman Islands is derived in part from comparatively limited judicial precedent in the Cayman Islands as well as from English common law, which has persuasive, but not binding, authority on a court in the Cayman Islands. The rights of our shareholders and the fiduciary duties of our directors under Cayman Islands law are not as clearly established as they would be under statutes or judicial precedents in the United States. In particular, the Cayman Islands has a less developed body of securities laws as compared to the United States, and provides significantly less protection to investors. In addition, Cayman Islands companies may not have standing to initiate a shareholder derivative action before the federal courts of the United States.

As a result of all of the above, our public shareholders may have more difficulty in protecting their interests through actions against our management, directors or major shareholders than they would as shareholders of a public company of the United States.

Our memorandum and articles of association contain anti-takeover provisions that could adversely affect the rights of holders of our ordinary shares and ADSs.

Our memorandum and articles of association contain certain provisions that could limit the ability of others to acquire control of our company, including our triple-class voting structure, and a provision that grants authority to our board of directors to establish from time to time one or more series of preferred shares without action by our shareholders and to determine, with respect to any series of preferred shares, the terms and rights of that series. These provisions could have the effect of depriving our shareholders of the opportunity to sell their shares at a premium over the prevailing market price by discouraging third parties from seeking to obtain control of our company in a tender offer or similar transactions.

We have incurred increased costs as a result of being a public company.

As a public company, we have incurred significant accounting, legal and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act, as well as new rules subsequently implemented by the SEC and the Nasdaq Global Select Market, have detailed requirements concerning corporate governance practices of public companies including Section 404 of the Sarbanes-Oxley Act relating to internal controls over financial reporting. These new rules and regulations have increased our director and officer liability insurance, accounting, legal and financial reporting compliance costs and have made certain corporate activities more time-consuming and costly. Therefore, we have incurred additional costs associated with our public company reporting requirements, and we cannot predict or estimate the amount of additional costs we may further incur or the timing of such costs.

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If securities or industry analysts do not actively follow our business, or if they publish unfavorable research about our business, our ADS price and trading volume could decline.

The trading market for our ADS depends in part on the research and reports that securities or industry analysts publish about us or our business. If one or more of the analysts who covers us downgrades our ADSs or publishes unfavorable research about our business, our ADS price would likely decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our ADSs could decrease, which could cause our ADS price and trading volume to decline.

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

We commenced our operations in 1999, and through a series of corporate restructurings, set up a holding company, AsiaCloud Inc., or AsiaCloud, in October 2009 under the laws of the Cayman Islands. AsiaCloud was formerly a wholly-owned subsidiary of aBitCool Inc., or aBitCool, a company incorporated under the laws of the Cayman Islands. In October 2010, AsiaCloud effected a restructuring whereby AsiaCloud repurchased all its outstanding shares held by aBitCool and issued ordinary shares and preferred shares to the same shareholders of aBitCool. In connection with the restructuring, AsiaCloud subsequently changed its name to 21Vianet Group, Inc.

Due to certain restrictions under the PRC laws on foreign ownership of entities engaged in data center and telecommunications value-added services, we conduct our operations in China through contractual arrangements among us, our wholly-owned PRC subsidiaries, our variable interest entities and their shareholders. As a result of these contractual arrangements, we control our variable interest entities and have consolidated the financial information of our consolidated affiliated entities in our consolidated financial statements in accordance with U.S. GAAP. We control: (i) 100% of the equity interests in 21Vianet Technology through our subsidiary, 21Vianet China, which was incorporated in October 2002; (ii) 100% of the equity interests of BJ iJoy following completion of our acquisition of 100% equity interests in iJoy in April 2013; and (iii) 100% of the equity interests of WiFire Network through our subsidiary, aBitCool DG, which was incorporated in June 2014.

On April 21, 2011, our ADSs began trading on the Nasdaq Global Select Market under the ticker symbol "VNET." We issued and sold a total of 14,950,000 ADSs, representing 89,700,000 Class A ordinary shares, at an initial offering price of US\$15.00 per ADS.

From time to time, we have acquired companies that are complementary to our business, as well as made alternative investments and entered into strategic partnerships or alliances as we see fit, we have also divested part of our business as part of our efforts to adjust our business development strategy. For example, we are Microsoft's local partner for all of its three major cloud offerings: Microsoft Azure, Office 365, and Dynamics 365. We had also been IBM's local partner for its cloud services (previously known as Bluemix) until December 2019. In March 2017, we entered into an investment agreement with Warburg Pincus to establish a multi-stage joint venture and build a digital real estate platform in China, with an aim to form additional joint ventures to jointly develop IDC projects, and we reached agreements to restructure our partnership with Warburg Pincus in July 2019. In September 2017, we transferred 66.67% of the equity interest in six wholly-owned subsidiaries engaged in the CDN, hosting area network services and route optimization business, or WiFire Entities, for a nominal consideration of RMB1 for each of the WiFire Entities to Beijing TUS Yuanchuang Technology Development Co., Ltd., a wholly-owned subsidiary of Tus-Holdings. Upon completion of such transfer, Tus-Holdings and us hold 66.7% and 33.3% equity interest in each of the WiFire Entities, respectively. WiFire Entities have been deconsolidated from our consolidated financial statements since then. In October 2019, we signed a memorandum of understanding with Alibaba to deploy IDC services in support of Alibaba's expansion throughout Eastern China.

On June 10, 2015, our board of directors received a preliminary non-binding offer from Mr. Sheng Chen, Kingsoft Corporation Limited and Tsinghua Unigroup International Co., Ltd. (together with Mr. Sheng Chen and Kingsoft Corporation Limited, the "Buyer Group") to acquire all of our outstanding ordinary shares not already owned by the Buyer Group for US\$23.00 in cash per ADS. On June 16, 2015, our board of directors formed the Special Committee to review and evaluate the proposal. On June 30, 2016, our board of directors received a letter from the Buyer Group, stating that the Buyer Group would withdraw the non-binding going private proposal with immediate effect.

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In May 2016, we issued 31,996,874 Class A and 111,053,390 Class B ordinary shares to Tus-Holdings Co., Ltd., or Tus-Holdings, for an aggregate cash consideration of US\$388 million. Upon the completion of this transaction, Tus-Holdings, through its affiliated investment vehicle, hold approximately 21.4% of our then total share capital, representing approximately 51.0% of the total voting power of us.

In October 2019, we 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, which is equal to the volume weighted average price of the Company's ADSs for the 30 trading days up to and including October 11, 2019, adjusted by the ADS-to-share ratio. This issuance of the newly created Class C ordinary shares is an initiative by us to enhance our ability to execute business strategies over the long term under the leadership of our board and senior management. Class C ordinary shares entitle the holders thereof the same rights as Class A ordinary shares except for veto right on certain corporate matters and conversion right.

Our principal executive offices are located at Guanjie Building, Southeast 1st Floor, 10# Jiuxianqiao East Road, Chaoyang District, Beijing, 100016, the People's Republic of China. Our telephone number at this address is +86 (10) 8456-2121. Our registered office in the Cayman Islands is located at the offices of Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands. Our agent for service of process in the U.S. is Law Debenture Corporate Services Inc., located at 400 Madison Avenue, 4th Floor, New York, New York 10017.

See Item 4.C, "Organizational Structure" for a diagram illustrating our corporate structure as of the date of this annual report.

SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC on www.sec.gov. You can also find information on our website <https://ir.21vianet.com/>.

B. [Business Overview](#)

Overview

We are a leading carrier-neutral and cloud-neutral internet data center services provider in China. We host our customers' servers and networking equipment and provide interconnectivity to improve the performance, availability and security of their internet infrastructure. We also provide complementary value-added services, such as cloud services and VPN services. We started offering public cloud services in 2013, private cloud and hybrid services in 2014 and partnered with numerous cloud service providers to support our comprehensive cloud-neutral platform. We believe that the scale of our data center and networking assets as well as our carrier-neutrality position us well to capture opportunities and become a leader in the rapidly emerging market for cloud computing infrastructure services in China.

Our infrastructure consists of our high-quality data centers and an extensive data transmission network. We operate 26 self-built data centers and 51 partnered data centers located in over 20 cities, including substantially all of China's major internet hubs with 36,291 cabinets under management that house 190,260 servers as of December 31, 2019. 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. Our data transmission network includes 165 POPs, which are access points from one place to the rest of the internet. Most of our data centers and our POPs are connected across China.

As a carrier-neutral internet infrastructure services 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. Furthermore, we provide public cloud services and private and hybrid cloud services and VPN services, which strengthens our capability to provide quality services and meet customer demand in our ecosystem.

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We serve a diversified and loyal base of customers, depending on the different types of services provided by us, our customers include (i) enterprise customers for our hosting and related services, spanning many different industries and ranging from internet companies to government entities, from blue-chip enterprises to small- to mid-sized enterprises and (ii) individual customers that signed for the Windows Azure, Office 365 and Dynamics 365 services. Our average monthly hosting churn rate, based on our core internet data center (IDC) business, was 0.5%, 0.3% and 0.5% in 2017, 2018 and 2019, respectively. Our average monthly recurring revenue from our top 20 customers has increased from RMB96.4 million in 2017 to RMB105.9 million in 2018 and to RMB110.3 million (US\$15.8 million) in 2019.

We used to provide managed network services to enable customers to deliver data across the internet in a faster and more reliable manner through our data transmission network. In 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, in order to focus more on expanding our core IDC business and capturing the growing demand in this market. Following completion of the disposal, we have transferred all of our equity interests in Aipu Group and continue to hold 33.3% equity interests in the WiFire Entities.

Our Service Offerings

We primarily generate revenues from providing hosting and related services. We provide hosting and related services to house servers and networking equipment in our data centers and connect them through our data transmission network. We also provide cloud services and VPN services as part of our hosting and related services business.

Our hosting and related services include the following:

- *Managed Hosting Services*, including managed retail services and managed wholesale services. Managed retail services includes (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. Managed wholesale services allow customers to use new data center sites that we construct and deliver to them based on their required 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*, or virtual private network 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 hosting and related 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 guarantee 99.9% uptime for power in our service level agreements.

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We believe another main reason customers choose our services is 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.

Managed Hosting Services

We have been providing managed retail services since our inception and further expanded to managed wholesale services in 2019.

Managed Retail Services. Our managed retail services includes 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 allows the internet to become a decentralized system and thereby reduces traffic congestion and data transmission time;
 - *Single-Line and Dual-Line Network Services.* China Telecom and China Unicom are the two major telecommunication carriers in China. Some customers may choose to connect their servers only to one carrier while others choose to connect their servers to both China Telecom and China Unicom. Dual-line network provides more stable internet access and ensures better business continuity; 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 multiple networks at the same time. Our interconnectivity services connect our customers with each other, connect our data centers with China's telecommunication carriers backbone network and other networks. We provide cross-connection services to the customers of our data center. Upon the request of the customers, we utilize single or multi-mode fiber 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 (IAAS) platform, hybrid IT services combine colocation, servers, connectivity, storage and customer service 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;

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- **Private and Hybrid Cloud Services.** We expanded our services to provide private cloud and hybrid services through our partnership with IBM in 2014. In October 2016, IBM cloud services (previously known as Bluemix) were made generally available in China through the collaboration with us. Our partnership with IBM expired in December 2019; and
- **Other Value-Added Services.** To complement our hosting services and enhance our customers' experiences, we also provide other value-added services, including 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 provide customers with new data center sites constructed and developed by us based on their required standards. Our customers for managed wholesale services are generally large-scale technology companies with increasing demands for customized data centers. Contracts we entered into with customers for managed wholesale services generally have terms of over eight years. Based on the specific requirements of our customers, we source properties for new data center sites by acquiring or leasing greenfield sites or existing industrial buildings from third parties, and then design and, through cooperation with developers, contractors, and suppliers, build out the facility to our advanced design and high technical specifications.

Cloud Services

We started providing public cloud services in 2013. Our public cloud services are currently provided through our cooperation with Microsoft. In particular, we provide: (i) infrastructure as a service, or IaaS, (ii) platform as a service, or PaaS, and (iii) software as a service, or SAAS, to our enterprise and individual customers on the public cloud. Windows Azure service 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 Office365 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.

VPN Services

We offer virtual private network services, or VPN services, primarily through Dermot Holdings Limited and its subsidiaries, or Dermot Entities, which we acquired in August 2014. Dermot Entities offer customer 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. With over 70 POPs across Asia, we provide fully managed network enabling connectivity to more than 700 cities in the region and covering over 20,000 MPLS network customer sites. 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 also 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.

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, 2019, we operate 26 self-built data centers and 51 partnered data centers located in over 20 cities, including all of China's major internet hubs, with 36,291 cabinets under management that house 190,260 servers. 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, 2019, we operate 26 self-built data centers housing 32,047 cabinets and 51 partnered data centers housing 4,244 cabinets.

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The table below sets forth the number of data centers and cabinets under our management and the number of servers housed in our data centers as of December 31, 2017, 2018 and 2019.

	As of December 31,		
	2017	2018	2019
Data Centers	57	58	77
Cabinets			
Self-built	23,823	25,711	32,047
Partnered	5,257	4,943	4,244
Total	29,080	30,654	36,291
Servers	163,187	180,177	190,260

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.

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;
- *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 9002 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. Our data centers are connected with redundant connections with an estimated capacity of 1,239 gigabits per second to nearly all locations. As of December 31, 2019, our network connects 165 POPs throughout China.

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The table below sets forth the number of our POPs and our network service capacity as of the periods ended December 31, 2017, 2018 and 2019.

	As of and for the years ended December 31,		
	2017	2018	2019
Number of POPs	476	172	165
Estimated Network Service Capacity*	1,032	1,151	1,239

* By gigabits per second

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.

Customers and Customer Support

Our Customers

We serve a diversified and loyal base of customers, depending on the different types of services provided by us, our customers include (i) enterprise customers for our hosting and related services, spanning many different industries and ranging from internet companies to government entities, from blue-chip enterprises to small- to mid-sized enterprises and (ii) individual customers that signed for the Windows Azure, Office 365 and Dynamics 365 services.

Given the breadth of our customer base, the single largest customer accounted for less than 12% of our total net revenues in any of the past three years. Revenue from our top five customers accounted for approximately 22% of our total net revenues in 2019.

As of December 31, 2019, we had over 5,000 enterprise customers for our hosting and related services, among which 19 were local subsidiaries of a telecommunication carrier in China. Because we negotiate with, maintain and support each of these entities of telecommunication carriers as a separate customer due to the fact that each of them has a separate decision-making authority and services procurement budget, we count each of them as a separate customer. None of these telecommunication carrier customers on a stand-alone basis contributed more than 3% of our revenues in any given year but in the aggregate, they contributed 2%, 4% and 4% of our total revenues, respectively, in 2017, 2018 and 2019, respectively.

We have a loyal customer base, as evidenced by our low churn rate. Our average monthly hosting churn rate, based on our core IDC business, was 0.5%, 0.3% and 0.5% in 2017, 2018 and 2019, respectively. Our average monthly recurring revenue from our top 20 customers were RMB96.4 million, RMB105.9 million and RMB110.3 million (US\$15.8 million) in 2017, 2018 and 2019, respectively.

Our experience in serving market leaders in various sectors also provides us with industry knowledge, operational expertise and credibility that we can leverage in cross-selling additional services to our existing and potential customers.

The following table sets forth some of the industries we serve and the representative customers in each industry.

Search Engine/ Portal	Rich Media	eCommerce	Social Networking	Financial Industry	Azure and Office 365 customers	Enterprise VPN
Damai	iQIYI	Meituan	Lvmama	9fgroup.com	DongFeng-Renault	iKang
Fang	Chineseall	Zhaogang	Qunar	lianlianmoney	Cfwin	Shuttle
Baixing	Mgtv	Jiuxian	Renren	BANK OF XI'AN	Yungoal	Ryosan
58	Kuwo	Kongfz	Jiayuan	QINNONG BANK	Pactera	Cheetah Mobiles

[Table of Contents](#)**Our Customer Support**

We devote significant resources to provide customers support and services through our dedicated customer service team. We offer service level agreements on most of our services to our customers. Such agreements set the expectations on service level between our customers and us and drive our internal process to meet or exceed the customer's expectations. We believe we were the first data center service provider in China to offer 24/7 customer services. Our network operation center is staffed with skilled engineers trained in network diagnostics and engineering. We require our staff to respond to calls or request from customers within 15 minutes. For major customers, we have a dedicated team to offer specialized services tailored to their specific needs. Areas of customer support include design and improvement of our customers' IT infrastructure and network optimization.

Our customers may directly contact the customer service team to seek assistance or inquire about the status of a reported incident. The team actively follows up with our operations team to ensure that the problems are addressed in an effective and timely manner. Each of our customers is assigned a service manager who is responsible for ensuring that all our services are performed in a satisfactory manner.

Research and Development

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.

Consistent with our strong innovation culture, we devote significant resources to the research and development of our proprietary smart technology and cloud computing infrastructure service technologies. Our research and development efforts have yielded 70 patents, 45 patent applications and 72 software copyright registrations, all in China and related to different aspects of internet infrastructure services. We intend to continue to devote a significant amount of time and resources to carry out our research and development efforts.

Technology and Intellectual Property

We use our proprietary smart routing technology to optimize network connectivity and overcome the inherent inadequacies in China's telecommunication and internet infrastructure. Our smart routing technology continually monitors and analyzes the performance of all available routes and identifies the most appropriate pathway in real-time. In planning for and finding the optimized routing plan, our smart routing technology takes into consideration speed (latency), performance, route stability and packet losses and dynamically responds with intelligent route adjustments in order to ensure that data is traveling along the fastest and most reliable route.

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.

Sales and Marketing

We actively market our portfolio of services and solutions through our direct sales force. Our sales and marketing team is primarily based in Beijing, Shanghai, Shenzhen, Guangzhou, Hangzhou, Xi'an, Hong Kong and Taiwan. We also have dedicated teams for our key customers and provide them service offerings specially tailored to their needs. We up-sell and cross-sell our broad portfolio of services and solutions to our existing customer base. In addition, in an effort to better anticipate and respond to our customers' needs, we require and foster the collaboration between our sales team and research and development team to develop additional services and solutions that meet the customers' needs.

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Our strong brand recognition has been an important driving force for our sales. To strengthen our brand, we focus our marketing efforts on sponsoring seminars, conferences and special events to raise our profile with potential customers. Additionally, we collaborate with equipment suppliers, software developers, internet solution providers and other companies to market our services. We have a special marketing team responsible for generating demand for our services and solutions and work with our other teams to secure new customers.

Competition

We face competition from a wide range of data center service providers and other value-added service providers, including:

- *Carriers.* We face competition from state-owned telecommunication carriers, including China Telecom and China Unicom. According to IDC, carriers occupied 67.1% of the data center services market in 2018. In addition, both carriers operate their own networks. Competition is primarily focused on pricing, quality of services and geographic coverage. We believe we are well-positioned to compete with major carriers. Unlike China Telecom and China Unicom, which construct data centers primarily to help sell bandwidth, we provide connectivity to multiple networks in each of our carrier-neutral data centers, providing superior choice and performance. Our private network provides enhanced connectivity among different networks. In comparison, data centers operated by China Telecom and China Unicom generally provide access only to their own network and are often constrained by their networks' coverage. Due to inadequate interconnectivity among China's carriers' networks and among the same carrier's networks in different provinces, interconnectivity bottlenecks remain a major problem, contributing to slow transmission speeds across services and applications.
- *Carrier-neutral service providers.* We face competition from other carrier-neutral service providers, such as SINNET and GDS. Competition is primarily focused on pricing and the quality and breadth of service offerings. We distinguish ourselves by our superior interconnectivity, extensive data transmission network, large number of high-quality data centers, and superior operations, maintenance and other customer services. Due to the unique nature of data center services, where relocation of customer servers and equipment is operationally difficult, customers are highly selective in choosing their data center service provider. Our strong brand, superior reputation and extensive operating experience and expertise remain the key differentiator in attracting and retaining our customers.
- *In-house data centers.* Businesses may choose to house and maintain their own IT hardware, such as Baidu and Alibaba, and other large enterprises, particularly in the financial services sector. Due to their in-house capabilities, these customers may outsource fewer services to other third-party data center services providers including us, if at all. However, we believe our data centers, coupled with our superior network services, offer a unique combination of hosting services that would make us attractive to businesses with in-house data centers.
- *Cloud service providers.* Cloud services are a new and emerging market and therefore, we face competition from various market players who have entered into or plan to enter into the new market. While we compete with domestic Chinese cloud service providers, such as AWS and AliCloud, we offer Windows Azure, Office 365 and Dynamics 365, operated by 21Vianet. We believe our partnerships with Microsoft will make us attractive to potential customers, especially enterprise and government entity customers that have a strong demand for cloud services.
- *Other valued-added service providers.* We face competition from other value-added telecommunications service providers including VPN service providers, such as Citic Telecom CPC. As one of the leading service providers in each one of these value-added service markets, we believe our offerings not only complement our core hosting services, but also position us to capture additional growth opportunities.

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In addition, some companies may prefer to locate their core data centers in Hong Kong or other areas outside of the PRC partly due to concern of the PRC governmental control over the internet. We do not currently compete with data center service providers located in Hong Kong and overseas, but we may compete with them if we expand our service offerings beyond China. We believe that there are currently no foreign competitors with a significant presence in the data center services market in China, partly due to the regulatory barriers in China's telecommunications sector. As China represents a potentially lucrative market for foreign competitors, some foreign providers may seek to enter the Chinese market. We believe we have accumulated a deep understanding of the requirements of China's data center market through our extensive operational experience and have developed a comprehensive suite of services and solutions tailored to the unique characteristics of the internet market in China. As we expand our service offerings, such as cloud services, we expect to face more competitions in those areas as well.

Regulations

This section sets forth a summary of the most significant regulations or requirements that affect our business activities in China or our shareholders' rights to receive dividends and other distributions from us.

As China's internet and telecommunication industry is evolving, new laws and regulations may be adopted from time to time that will require us to obtain additional licenses and permits in addition to those that we currently have, and to address new issues that arise from time to time. As a result, substantial uncertainties exist regarding the interpretation and implementation of current and future Chinese laws and regulations applicable to the data center services industry. See "Risk Factors—Risks Related to Doing Business in China."

Regulations on Foreign Investment

On January 1, 2020, the Foreign Investment Law, as well as the Regulations for Implementation of the Foreign Investment Law, or the Implementation Regulations, came into effective, which replaced the trio of prior laws regulating foreign investment in China, namely, the Sino-foreign Equity Joint Venture Enterprise Law, the Sino-foreign Cooperative Joint Venture Enterprise Law and the Wholly Foreign-invested Enterprise Law, together with their implementation rules and ancillary regulations, and became the principal regulations governing foreign investment in China.

According to the Foreign Investment Law, "foreign investment" refer to investment activities directly or indirectly conducted by one or more natural persons, business entities, or otherwise organizations of a foreign country (collectively referred to as "foreign investor") within China, and the investment activities include the following situations: (i) a foreign investor, individually or collectively with other investors, establishes a foreign-invested enterprise within China; (ii) a foreign investor acquires stock shares, equity shares, shares in assets, or other like rights and interests of an enterprise within China; (iii) a foreign investor, individually or collectively with other investors, invests in a new project within China; and (iv) investments in other means as provided by laws, administrative regulations, or the State Council. According to the Foreign Investment Law, the State Council will publish or approve to publish a catalogue for special administrative measures, or the "negative list." The Foreign Investment Law grants national treatment to foreign invested entities, except for those foreign invested entities that operate in industries deemed to be either "restricted" or "prohibited" in the "negative list". The Foreign Investment Law provides that foreign invested entities operating in foreign restricted or prohibited industries will require market entry clearance and other approvals from relevant PRC governmental authorities. Furthermore, the Foreign Investment Law provides that foreign invested enterprises established according to the existing laws regulating foreign investment may maintain their structure and corporate governance within five years after January 1, 2020.

The Implementation Regulations further provides, among other, that (i) if a foreign-invested enterprise incorporated prior to January 1, 2020 fails to adjust its corporate governance structure and other matters to be in compliance with the Companies Law of the PRC or the Partnership Enterprises Law of the PRC, as the case may be, and complete registration for amendments before January 1, 2025, the relevant governmental authority may no longer accept any other registration matters of such foreign-invested enterprise; and (ii) as for any foreign-invested enterprise incorporated prior to January 1, 2020, the provisions regarding equity interest transfer and distribution of profits, as agreed in its joint venture contracts, may remain effective and binding after its adjustment of corporate governance structure and other matters in accordance with the Companies Law of the PRC or the Partnership Enterprises Law of the PRC, as the case may be.

[Table of Contents](#)**Regulations on Value-Added Telecommunications Business and Data Center Services**

Among all of the applicable laws and regulations, the Telecommunications Regulations implemented on September 25, 2000, as amended on July 29, 2014 and February 6, 2016, is the primary governing law, and sets out the general framework for the provision of telecommunication services by domestic PRC companies. Under the Telecom Regulations, telecommunications service providers are required to procure operating licenses prior to their commencement of operations. The Telecom Regulations distinguish “basic telecommunications services” from “value-added telecommunications services.” Value-added telecommunications services are defined as telecommunications and information services provided through public networks. A “Catalog of Telecommunications Business” or the Catalog, was issued as an attachment to the Telecom Regulations to categorize telecommunications services as either basic or value-added. Pursuant to the currently effective Catalog, which was most recently amended in June 2019, value-added telecommunications services are divided into type I value-added telecommunications services (i.e. services “mainly based on facilities and resources”) and type II value-added telecommunications services (i.e. services “mainly based on public platforms”) and they will be regulated accordingly. For example, value-added telecommunications services (e.g. internet data center services, content distribution network services, domestic internet protocol virtual private network services, and internet access services) which are primarily provided to enterprise users, closely attached to basic infrastructure and telecom resources, and have significant importance to national information security and public order, are categorized as type I value-added telecommunications services. Value-added telecommunications services (e.g. online data processing and transaction processing services and information services), which are mainly provided to the general public, have significant economic benefits, and are closely related to consumer rights and privacy protection are categorized as type II value-added telecommunications services.

Pursuant to the Telecom Regulations, value-added telecommunications services covering two or more provinces, autonomous regions, and/or municipalities directly administered by the central government shall be approved by the MIIT, and the providers of such cross-regional value-added telecommunications services are required to obtain the Cross-Regional VAT licenses. Value-added telecommunications services covering certain area within one province, autonomous region, and/or municipality directly administered by the central government shall be approved by the local telecommunications administration authority of such region and the providers of such value-added telecommunications services are required to obtain the VAT licenses. Pursuant to the Administrative Measures for Telecommunications Business Operating Licenses effective on July 3, 2017 and as amended from time to time, promulgated by the MIIT, Cross-Regional VAT licenses shall be approved and issued by the MIIT with five-year terms.

21Vianet Beijing holds a Cross-Regional VAT license issued by the MIIT on January 17, 2012 (which was most recently updated on August 26, 2019) with a term effective until January 23, 2022. It is permitted to carry out its (i) full data center business under the first category of “value-added telecommunications business” across two province-level municipalities and four cities in China; (ii) data center business (excluding internet resources coordination service) under the first category of “value-added telecommunications business” across two province-level municipalities and 18 cities in China; (iii) VPN services under the first category of “value-added telecommunications business” across China; (iv) internet access service under the first category of “value-added telecommunications business” across 13 province-level municipalities and provinces in China, and internet access service (solely providing services for website users) under the first category of “value-added telecommunications business” across six provinces in China; (v) domestic multi-party communications services under the second category of “value-added telecommunications business” across China; and (vi) domestic data transmission services through fixed network under the second category of “basic telecommunications business” across China. In addition, 21Vianet Beijing recently has been permitted to conduct data center business (excluding internet resources coordination service) under the first category of “value-added telecommunications business” in Zhengzhou and Wuhan in China, but we have not received the updated license as the renewal process of the MIIT has been delayed due to the outbreak of COVID-19.

BJ iJoy holds a Cross-Regional VAT License issued by the MIIT on October 23, 2019 with a term effective until May 6, 2024. It is permitted to carry out its (i) data center business (excluding internet resources coordination service) under the first category of “value-added telecommunications business” across two province-level municipalities and one city in China; (ii) VPN services under the first category of “value-added telecommunications business” across three province-level municipalities and provinces in China; (iii) internet access service under the first category of “value-added telecommunications business” across three province-level municipalities and provinces in China; and (iv) information service business (excluding internet information service) under the second category of “value-added telecommunications business” across China. In addition, pursuant to the VAT License issued to BJ iJoy by Beijing Communications Administration on November 20, 2019 with a term effective until October 8, 2023, BJ iJoy is permitted to carry out the information service business (limited to internet information service) under the second category of “value-added telecommunications business”.

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21Vianet Technology holds a Cross-Regional VAT License issued by the MIIT on December 3, 2019 with a term effective until June 20, 2023. It is permitted to carry out its internet access service under the first category of “value-added telecommunications business” across three province-level municipalities and provinces in China.

SH 21Vianet, a wholly-owned subsidiary of 21Vianet Technology, holds a VAT License issued by Shanghai Communications Administration on July 1, 2019 with a term effective until March 31, 2023. It is permitted to provide internet access service (providing services for website users and internet platforms) under the first category of “value-added telecommunications business” in Shanghai.

JS 21Vianet holds a Cross-Regional VAT License issued by the MIIT on November 4, 2019 with a term effective until November 4, 2024. It is permitted to carry out its (i) data center business (excluding internet resources coordination service) under the first category of “value-added telecommunications business” in Shanghai, Nanjing and Suzhou; and (ii) internet access service under the first category of “value-added telecommunications business” across two province-level municipalities and provinces in China.

SZ DYG holds a Cross-Regional VAT License issued by the MIIT on September 18, 2013 (which was updated on July 17, 2019) with a term effective until June 4, 2023. It is permitted to carry out (i) VPN services under the first category of “value-added telecommunications business” in China; (ii) call center business under the second category of “value-added telecommunications business” across China; (iii) data center business under the first category of “value-added telecommunications business” in Beijing, Shanghai and Shenzhen; (iv) data center business (solely internet resources coordination service) under the first category of “value-added telecommunications business”, which covers the services in six cities in China; (v) internet access service under the first category of “value-added telecommunications business” across three province-level municipalities and provinces in China; and (vi) internet access service (solely providing services for website users) under the first category of “value-added telecommunications business” across 28 province-level municipalities and provinces in China.

BJ Yilong holds a VAT License issued by Beijing Communications Administration on November 27, 2018 with a term effective until September 9, 2020. It is permitted to carry out its information service business (excluding internet information service) under the second category of “value-added telecommunications business” in Beijing. In addition, pursuant to the VAT License issued to BJ Yilong by Beijing Communications Administration on November 27, 2018 with a term effective until September 24, 2020, BJ Yilong is permitted to carry out the information service business (limited to internet information service) under the second category of “value-added telecommunications business”.

SH Blue Cloud holds a VAT License issued by Shanghai Communications Administration on October 20, 2017 (which was updated on October 25, 2019 to revise the categories of permitted business) with a term effective until October 20, 2022. It is permitted to carry out (i) information service business (limited to internet information service) under the second category of “value-added telecommunications business”; (ii) online data processing and transaction processing service (solely providing for e-commerce services) under the second category of “value-added telecommunications business”; and (iii) internet domain name resolution service under the second category of “value-added telecommunications business” in Shanghai. In addition, SH Blue Cloud obtained the Cross-Regional VAT License issued by the MIIT on January 21, 2020 with a term effective until January 21, 2025, pursuant to which SH Blue Cloud is permitted to carry out (i) data center business under the first category of “value-added telecommunications business” in Beijing and Shanghai; (ii) CDN service under the first category of “value-added telecommunications business” in Beijing and Shanghai; and (iv) internet access service under the first category of “value-added telecommunications business” in Beijing and Shanghai.

MIIT initiated a periodical pilot scheme for broadband access business by issuing the Notice on Liberalizing the Broadband Access Market to Private Capital on December 25, 2014, or the Broadband Notice, pursuant to which, the qualified private sector enterprises are encouraged, but not required, to apply to participate in the pilot scheme in broadband access business and the pilot scheme lasts for 3 years commencing on March 1, 2015. From 2015 to 2017, MIIT issued a series of notices in succession to expand the pilot scheme to all cities in nine provinces and several designated cities in other provinces. MIIT issued the Notice on Deepening the Pilot Scheme in Broadband Access Business on June 19, 2018 to extend the effective period of the pilot scheme to December 31, 2020 and further expand the pilot scheme to all cities in fourteen provinces and several designated cities in other provinces. As of the date of this annual report, we are qualified to provide broadband access services in Beijing.

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In addition, the MIIT and other relevant regulatory authorities recently published a series of new regulations, policies with respect to the construction, development and expansion of new and existing data centers. For example, on January 21, 2019, MIIT, National Government Office Administration and National Energy Administration jointly published the Guidance on Promotion of Green Data Center Construction, pursuant to which authorities encourage data centers to adhere to certain average levels of energy conservation and aim to reach several goals including, among others, maintaining the power usage effectiveness (PUE) of newly constructed large and extra-large data centers at or below 1.4 from the year 2022 onward. On September 6, 2018, the General Office of the People's Government of Beijing Municipality, or the GOPGB, issued the Beijing Municipality's Catalogue for the Prohibition and Restriction of Newly Increased Industries (2018 Edition), or the 2018 Catalogue, which is a revised edition of the catalogue GOPGB issued in 2015. The 2018 Catalogue prohibits new construction or expansion within Beijing's certain areas of (i) data centers which are involved in providing Internet data services or information processing and storage support services, except for cloud computing data centers with PUE lower than 1.4, and (ii) call centers. Furthermore, new construction or expansion of data centers which are involved in providing Internet data services or information processing and storage support services with PUE lower than 1.4 is also prohibited within the boundaries of Beijing's Dongcheng District, Xicheng District, Chaoyang District, Haidian District, Fengtai District, Shijingshan District and Tongzhou New Town. On January 2, 2019, Shanghai Municipal Commission of Economy and Information and Shanghai Municipal Development and Reform Commission jointly published the Guidance on Strengthening the Coordinated Construction of the Internet Data Center in Shanghai Municipality, pursuant to which, authorities encourage to effectively control the construction scale and energy consumption gross of Internet data centers and aim to reach several goals including, among others, the PUE of newly constructed Internet data center shall be strictly controlled below 1.3, and the PUE of reconstructed Internet data center shall be strictly controlled below 1.4, from the year 2020 onward. Pursuant to the Notice on Selection of Proposed Newly Constructed Internet Data Center Projects in Shanghai in 2020 issued by Shanghai Municipal Commission of Economy and Information on March 25, 2020, the overall scale of newly constructed internet data center projects in Shanghai in 2020 will be limited up to 30,000 racks, the total energy consumption of which will be capped at the amount equivalent to approximately 250,000 tons of standard coal.

Regulations on Foreign Investment in Telecommunications Enterprises

The PRC government imposes limitations on the foreign ownership of PRC companies that engage in telecommunications-related business. Under the Administrative Rules for Foreign Investments in Telecommunications Enterprises, or the Foreign Investment Telecommunications Rules, issued by the PRC State Council on December 11, 2001 and effective on January 1, 2002, which was further amended on February 6, 2016, a foreign investor is currently prohibited from owning more than 50% of the equity interest in a PRC company that engages in value-added telecommunications business, and the major foreign investor of a telecommunication business in China must also have experience and a sound track record in providing value-added telecommunications services overseas. Although the Guidance Catalog of Industries for Foreign Investment, as amended in 2017, and the Special Administrative Measures (Negative List) for Foreign Investment Access issued in 2019 allow a foreign investor to own more than 50% of the total equity interest in e-commerce business, domestic multi-party communications services, information storage and re-transmission services, and call center services, other requirements provided by the Foreign Investment Telecommunications Rules (such as the track record and experience requirement for a major foreign investor) still apply. Foreign investors that meet these requirements must obtain approvals from the MIIT, which retain considerable discretion in granting approvals. In addition, in February 2019, the State Council published its approval of Fully Promoting the Comprehensive Pilot Program for Expanding the Opening Up of Service Industry in Beijing, pursuant to which Beijing will lift foreign ownership limits on internet access service industry (only the service of providing users with internet access) in certain pilot zones in Beijing. Nevertheless, since this approval is recently published and the local authorities in Beijing has not promulgated any implementing rules or guidelines as of the date of this annual report, it remains uncertain as to the interpretation and implementation of this new policy in many aspects, such as whether the abovementioned requirements provided by the Foreign Investment Telecommunications Rules for a major foreign investor and the MIIT approval will still apply in Beijing.

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The Circular on Strengthening the Administration of Foreign Investment in and Operation of Value-Added Telecommunications Business issued by the MIIT on July 13, 2006, among others, requires a foreign investor to set up an FIE and obtain an operating permit in order to carry out any value-added telecommunications business in China. Under this circular, a domestic value-added telecommunications service operator that holds a VAT license is prohibited from leasing, transferring or selling such license to foreign investors, and from providing any assistance in the form of resources, sites or facilities to foreign investors that conduct value-added telecommunications business illegally in China. Furthermore, the relevant trademarks and domain names that are used in the value-added telecommunications business of domestic operators must be owned by such domestic operators or their shareholders. The circular further requires each VAT license holder to have the necessary facilities for its approved business operations and to maintain such facilities in the regions covered by its VAT license. In addition, all value-added telecommunications service operators are required to maintain network and information security in accordance with the standards set forth under relevant PRC regulations.

We conduct our businesses in China primarily through contractual arrangements among us, our wholly-owned PRC subsidiaries, our variable interest entities and their shareholders. In the opinion of Han Kun Law Offices, our PRC legal counsel, each of the contracts under the contractual arrangements is valid, legally binding and enforceable upon each party of such arrangements under PRC laws and regulations, and will not result in any violation of PRC laws or regulations currently in effect. However, there are substantial uncertainties regarding the interpretation and application of PRC laws and regulations. Accordingly, there can be no assurance that the PRC regulatory authorities may not in the future take a view that is contrary to the above opinion of our PRC legal counsel. If the PRC government finds that the arrangements that establish the structure for operating our business do not comply with PRC law and regulations restricting foreign investment in the telecommunications business, we could be subject to severe penalties.

In addition, the Circular on Strengthening the Administration of Foreign Investment in and Operation of Value-Added Telecommunications Business provides that domestic telecommunications companies that intend to be listed overseas must obtain the approval from the MIIT for such overseas listing. Up to the date of this annual report, the MIIT has not issued any definitive rule concerning whether offerings like ours would be deemed an indirect overseas listing of our PRC affiliates that engage in telecommunications business. If the MIIT subsequently requires that we obtain its approval, it may have a material adverse effect on the trading price of our ADSs.

Regulations on Internet Security

On November 7, 2016, the Standing Committee of the National People's Congress promulgated the Cyber Security Law, which became effective on June 1, 2017. In accordance with the Cyber Security Law, internet operators must comply with applicable laws and regulations and fulfill their obligations to safeguard network security in conducting business and providing services. Internet operators must take technical and other necessary measures as required by laws and regulations to safeguard the operation of networks, respond to network security effectively, prevent illegal and criminal activities, and maintain the integrity, confidentiality and usability of network data. In addition, the Cyber Security Law requires internet operators to formulate contingency plans for cyber security incidents, and initiate relevant contingency plans, take corresponding remedial measures and report to the competent departments upon occurrence of any incident endangering cyber security.

In September 2016, the General Office of MIIT issued a Trial Administrative Measures on the Use and Operation Maintenance of Internet Information Security Management System, which, among others, regulates the operation and maintenance of the information security management system established or run by an operator of telecommunication business such as IDC, ISP or CDN service. Pursuant to these administrative measures, the relevant telecommunication operator is obligated to monitor the information transmitted through its internet information security management system and take timely measures to deal with information that is prohibited to be published or transmitted. Moreover, it must preserve access log record with the internet information security management system according to relevant laws and industry standards, and provide the record for examination upon request from the authorities. It must also take necessary measures to maintain and safeguard the normal operation of its internet information security management system.

In November 2017, MIIT promulgated the Circular on Regulating the Use of Domain Names for Internet Information Services, which became effective on January 1, 2018. Pursuant to this circular, the ISP service provider must verify the identity of each internet information service provider. If the internet information service provider fails to provide its true and accurate identity information, the ISP service provider is prohibited from providing ISP services to it. In addition, the ISP service provider is required to regularly check the status of domain names used by the internet information service providers, and if relevant domain name is invalid and the real identity information of the user is absent, it should cease providing ISP services.

[Table of Contents](#)**Regulations on Foreign Exchange Registration of Overseas Investment by PRC Residents**

According to Circular 37, PRC residents are required to register with local SAFE branches in connection with their direct establishment or indirect control of an offshore entity for the purposes of overseas investment and financing, with such PRC residents' legally owned assets or equity interests in domestic enterprises or offshore assets or interests, referred to in Circular 37 as a "special purpose vehicle." The term "control" under Circular 37 is broadly defined as the operation rights, beneficiary rights or decision-making rights acquired by the PRC residents in the offshore special purpose vehicles or PRC companies by such means as acquisition, trust, proxy, voting rights, repurchase, convertible bonds or other arrangements. Circular 37 further requires amendment to the registration in the event of any changes with respect to the basic information of the special purpose vehicle, such as changes in a PRC resident individual shareholder, name or operation period; or any significant changes with respect to the special purpose vehicle, such as increase or decrease of capital contributed by PRC individuals, share transfer or exchange, merger, division or other material event. If the shareholders of the offshore holding company who are PRC residents do not complete their registration with the local SAFE branches, the PRC subsidiaries may be prohibited from distributing their profits and proceeds from any reduction in capital, share transfer or liquidation to the offshore company, and the offshore company may be restricted in its ability to contribute additional capital to its PRC subsidiaries. Moreover, failure to comply with SAFE registration and amendment requirements described above could result in liability under PRC law for evasion of applicable foreign exchange restrictions. On February 13, 2015, SAFE promulgated the SAFE Notice 13, which took effect on June 1, 2015. SAFE Notice 13 has delegated to the qualified banks the authority to register all PRC residents' investment in "special purpose vehicle" pursuant to the Circular 37, except that those PRC residents who have failed to comply with Circular 37 will remain to fall into the jurisdiction of the local SAFE branches and must make their supplementary registration application with the local SAFE branches.

See "Risk Factors—Risks Related to Doing Business in China—PRC regulations relating to the establishment of offshore special purpose vehicles by PRC residents may subject our PRC resident beneficial owners to personal liability and limit our ability to acquire PRC companies, to inject capital into our PRC subsidiaries, limit our PRC subsidiaries' ability to distribute profits to us, or otherwise materially and adversely affect us."

Regulations on Employee Stock Option Granted by Listed Companies

On December 25, 2006, the People's Bank of China, issued the Administration Measures on Individual Foreign Exchange Control, which became effective on February 1, 2007 and its Implementation Rules was issued by SAFE on January 5, 2007 and was amended on May 29, 2016. Under these regulations, all foreign exchange matters involved in employee share ownership plans, share option plans and other equity incentive plans participated by PRC individuals shall be transacted upon the approval from the SAFE or its authorized branch.

On February 15, 2012, the SAFE promulgated SAFE Notice 7, replacing the Application Procedure of Foreign Exchange Administration for PRC Residents Participating in Employee Stock Holding Plan or Stock Option Plan of Overseas-Listed Company promulgated in March 2007. SAFE Notice 7 is applicable to domestic directors, supervisors, senior management and other employees of an overseas-listed domestic company, PRC subsidiaries or branches of an overseas-listed company and any PRC entities which are directly or indirectly controlled by an overseas-listed company, or Domestic Company, including PRC citizens and foreign citizens who have resided in the PRC for one year or more, or PRC Residents. Under SAFE Notice 7, PRC Residents who participate in a share incentive plan of an overseas publicly listed company are required, through the Domestic Company or a PRC agent, or Domestic Agent, to complete certain procedures and transactional foreign exchange matters under the stock incentive plan upon the examination by, and the approval of, SAFE or its authorized local counterparts; the Domestic Agent is required to register relevant information of the stock incentive plan with the authorized local counterparts of SAFE within three business days of each quarter and is also required to complete foreign exchange cancellation procedures within twenty business days after termination of the stock incentive plan.

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On July 16, 2010, our board of directors adopted our 2010 Plan which was subsequently amended 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 by unanimous written approval of our board of directors. Under the 2010 Plan and 2014 Plan, we may issue employee stock options to our qualified employees and directors on a regular basis. We have advised our employees and directors participating in the 2010 Plan and 2014 Plan to handle foreign exchange matters in accordance with SAFE Notice 7. However, we cannot assure you that our PRC individual beneficiary owners and the stock options holders can successfully register with the SAFE in full compliance with SAFE Notice 7. PRC individuals and PRC companies in violation of SAFE Notice 7 will be punished by the SAFE, according to the Regulation of the People's Republic of China on Foreign Exchange Administration, Detailed Rules for the Implementation of the Measures for the Administration of Individual Foreign Exchange and other regulations.

Regulations on Foreign Currency Exchange

Pursuant to applicable PRC regulations on foreign currency exchange, Renminbi is freely convertible only to the extent of current account items, such as trade-related receipts and payments, interest and dividends. Capital account items, such as direct equity investments, loans and repatriation of investment, unless expressly exempted by laws and regulations, require the prior registration at the designated foreign exchange banks for conversion of Renminbi into a foreign currency, such as U.S. dollars. Payments for transactions that take place within the PRC must be made in Renminbi. Domestic companies or individuals can repatriate foreign currency payments received from abroad, or deposit these payments abroad subject to the requirement that such payments shall be repatriated within a certain period of time. Foreign-invested enterprises may retain foreign exchange in accounts with designated foreign exchange banks. Foreign currencies received for current account items can be either retained or sold to financial institutions that have foreign exchange settlement or sales business without prior approval from the SAFE, subject to certain regulations. Foreign exchange income under capital account can be retained or sold to financial institutions that have foreign exchange settlement and sales business, with prior approval from the SAFE, unless otherwise provided.

In addition, in March 2015, SAFE promulgated the Circular on Reforming the Administration Approach Regarding the Foreign Exchange Capital Settlement of Foreign-invested Enterprises, or SAFE Circular No. 19, which was amended on December 30, 2019. SAFE Circular No. 19 provides that, among other things, a foreign-invested enterprise may convert up to 100% of the foreign currency in its capital account into RMB on a discretionary basis according to the actual needs. On June 9, 2016, SAFE further issued the Circular of the State Administration of Foreign Exchange on Reforming and Regulating Policies on the Control over Foreign Exchange Settlement of Capital Accounts, or SAFE Circular No. 16, to further expand and strengthen such discretionary conversion reform under SAFE Circular No. 19. SAFE Circular No. 16 provides an integrated standard for conversion of foreign exchange under capital account items on a discretionary basis which applies to all enterprises registered in the PRC. Pursuant to SAFE Circular No. 16, in addition to foreign currency capital, the discretionary conversion policy expands to foreign currency debts borrowed by an enterprise (except financial institutions) and repatriated funds raised through overseas listing. In addition, SAFE Circular No. 16 has narrowed the scope of purposes for which an enterprise must not use the RMB funds so converted, which include, among others, (i) payment for expenditure beyond its business scope or otherwise as prohibited by the applicable laws and regulations; (ii) investment in securities or other financial products other than banks' principal-secured products; (iii) provision of loans to non-affiliated enterprises, except where it is expressly permitted in the business scope of the enterprise; and (iv) construction or purchase of non-self-used real properties, except for the real estate developer.

In November 2012, SAFE promulgated the Circular of Further Improving and Adjusting Foreign Exchange Administration Policies on Foreign Direct Investment, as most recently amended on December 30, 2019, which substantially amends and simplifies the current foreign exchange procedure. Pursuant to this circular, the opening of various special purpose foreign exchange accounts (e.g. pre-establishment expenses account, foreign exchange capital account, guarantee account), the reinvestment of lawful incomes derived by foreign investors in the PRC (e.g. profit, proceeds of equity transfer, capital reduction, liquidation and early repatriation of investment), and purchase and remittance of foreign exchange as a result of capital reduction, liquidation, early repatriation or share transfer in an FIE no longer require SAFE approval, and multiple capital accounts for the same entity may be opened in different provinces, which was not possible before. In addition, SAFE promulgated the Circular on the Provisions on Foreign Exchange Administration over Domestic Direct Investment by Foreign Investors and the Supporting Documents in May 2013, as most recently amended on December 30, 2019, which specifies that the administration by SAFE or its local branches over direct investment by foreign investors in the PRC shall be conducted by way of registration and banks shall process foreign exchange business relating to the direct investment in the PRC based on the registration information provided by SAFE and its branches.

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In addition, SAFE Notice 13 delegates the authority to enforce the foreign exchange registration in connection with the inbound and outbound direct investment under relevant SAFE rules to certain banks and therefore further simplifies the foreign exchange registration procedures for inbound and outbound direct investment.

On October 23, 2019, the SAFE issued the Circular on Further Advancing the Facilitation of Cross Border Trade and Investment, or SAFE Circular 28. SAFE Circular 28 provides, among others, that the foreign-invested enterprises can use RMB converted from foreign currency denominated capital for equity investment in China, provided that the equity investments are genuine and in compliance with the applicable foreign investment-related laws and regulations. In addition, SAFE Circular 28 further provides that qualified enterprises in certain pilot areas may use the capital income from their registered capital, foreign debt or overseas listing for domestic payments, without providing authenticity certifications to the relevant banks in advance for those domestic payments.

Regulations on Dividend Distribution

Under applicable PRC laws and regulations, FIEs in China may pay dividends only out of their accumulated profits, if any, determined in accordance with PRC accounting standards and regulations. In addition, FIEs in China are required to allocate at least 10% of their respective accumulated profits each year, if any, to fund statutory reserve funds unless these reserves have reached 50% of the registered capital of the respective enterprises. These reserves are not distributable as cash dividends.

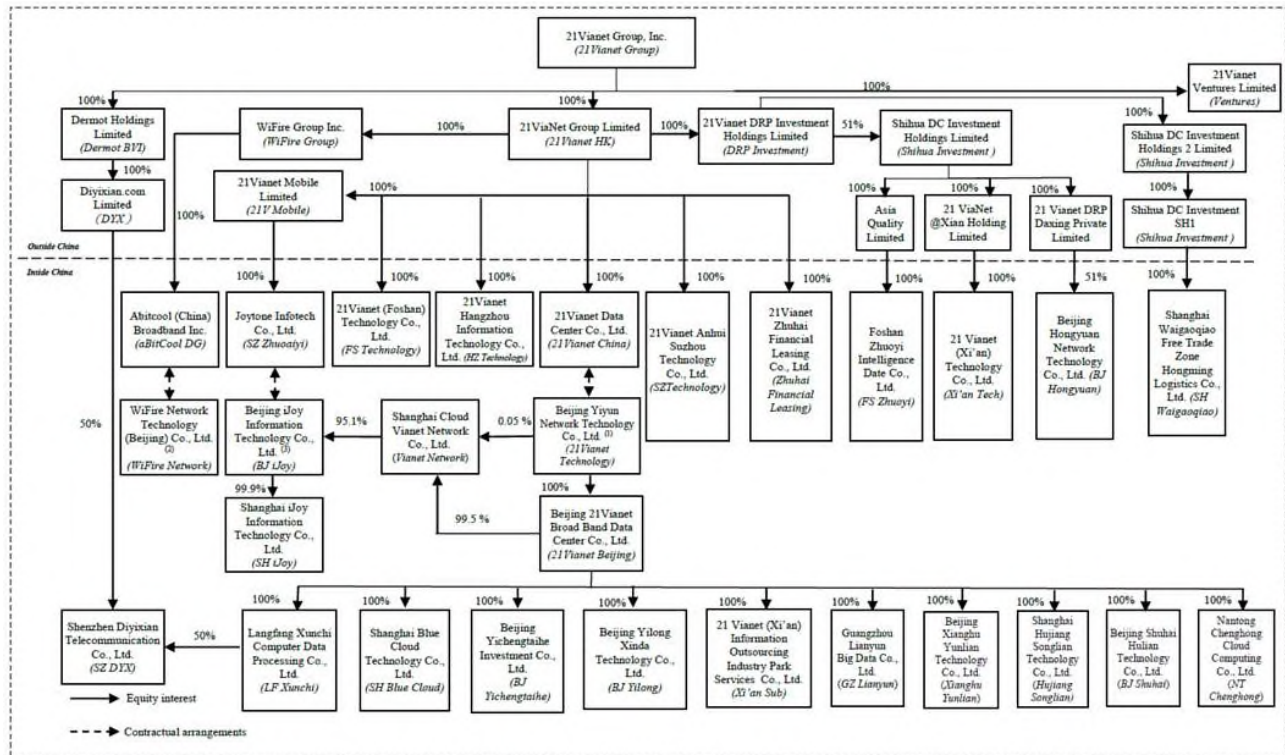
C. Organizational Structure

We commenced operations in 1999, and through a series of corporate restructurings, established a holding company, AsiaCloud, in October 2009 under the laws of the Cayman Islands. AsiaCloud was formerly a wholly-owned subsidiary of aBitCool, a company incorporated under the laws of the Cayman Islands. In October 2010, AsiaCloud effected a repurchase and cancellation of all its outstanding shares held by aBitCool and the issuance of ordinary shares and preferred shares to the shareholders of aBitCool so that they maintained their respective ownership interests in AsiaCloud directly. In connection with the restructuring, AsiaCloud changed its name to 21Vianet Group, Inc.

Due to restrictions under PRC law on foreign ownership of entities engaged in data center and telecommunications value-added services, we conduct our operations in China through contractual arrangements among us, our wholly-owned PRC subsidiaries, our variable interest entities and their shareholders. As a result of these contractual arrangements, we control our variable interest entities and have consolidated the financial statements of our consolidated affiliated entities in our consolidated financial statements.

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The following diagram illustrates our current corporate structure of our principal operating entities:



Notes:

- (1) Mr. Sheng Chen and Mr. Jun Zhang, our co-founders, hold 70% and 30% of the equity interests in 21Vianet Technology, respectively, and are parties to the contractual agreements through which we conduct our operations in China.
- (2) Mr. Sheng Chen and Mr. Jun Zhang, our co-founders, hold 95% and 5% of the equity interests in WiFire Network, respectively, and are parties to the contractual agreements through which we conduct our operations in China.
- (3) Mr. Yang Peng and Vianet Network hold 4.9% and 95.1% of the equity interests in BJ Jiyi, respectively, and are parties to the contractual agreements through which we conduct our operations in China. Vianet Network is ultimately controlled by Mr. Sheng Chen and Mr. Jun Zhang, our co-founders.

Contractual Arrangements with Our Variable Interest Entities and Their Shareholders

PRC laws and regulations currently restrict foreign ownership of telecommunications value-added business. Because we are a Cayman Islands company, we are classified as a foreign enterprise under PRC laws and regulations and our wholly-owned PRC subsidiaries, 21Vianet China, SZ Zhuoaiyi and aBitCool DG, are considered as wholly-owned FIEs. To comply with PRC laws and regulations, we conduct our operations in China through a series of contractual arrangements among us, our wholly-owned PRC subsidiaries, our variable interest entities and their shareholders. The shareholders of our variable interest entities are founders, directors, executive officers, employees or shareholders of our company or entities ultimately controlled by our founders. They are also PRC citizens or PRC domestic companies and therefore, our variable interest entities are considered as domestic companies under the PRC laws. For the years ended December 31, 2017, 2018 and 2019, our consolidated affiliated entities contributed most of our total net revenues.

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We have relied and expect to continue to rely, on our consolidated affiliated entities to operate our telecommunications value-added business in China as long as PRC laws and regulations do not allow us to directly operate such business in China. Our contractual arrangements with our variable interest entities and their shareholders enable us to:

- exercise effective control over our variable interest entities;
- receive substantially all of the economic benefits of our variable interest entities in consideration for the services provided by our wholly-owned PRC subsidiaries; and
- have an exclusive option to purchase all of the equity interest in our variable interest entities when permissible under PRC laws.

Accordingly, under U.S. GAAP, we consolidate 21Vianet Technology, BJ iJoy and WiFire Network as our “variable interest entities” in our consolidated financial statements.

Our contractual arrangements with our variable interest entities and their shareholders are described in further detail as follows:

Agreements that Provide Us Effective Control

Share Pledge Agreements. On February 23, 2011, 21Vianet China entered into a share pledge agreement with 21Vianet Technology and each of its shareholders. Pursuant to the share pledge agreement, each of the shareholders pledged his shares in 21Vianet Technology to 21Vianet China in order to secure the shareholders’ payment obligations under the loan agreement. Each shareholder also agreed not to transfer or create any other security or restriction on the shares of 21Vianet Technology without the prior consent of 21Vianet China. 21Vianet China, at its own discretion, is entitled to acquire each shareholder’s equity interests in 21Vianet Technology as permitted by PRC laws. We have registered the pledges of the equity interests in 21Vianet Technology with the local branch of the State Administration for Industry and Commerce, and currently known as State Administration for Market Regulation.

Irrevocable Power of Attorney. Each shareholder of 21Vianet Technology has executed an irrevocable power of attorney. Pursuant to the irrevocable power of attorney, each shareholder appointed 21Vianet China or a person designated by 21Vianet China as his/her attorney-in-fact to attend shareholders’ meeting of 21Vianet Technology, exercise all the shareholder’s voting rights, including but not limited to, sale transfer, pledge or dispose of his/her equity interests in 21Vianet Technology. The power of attorney remains valid and irrevocable from the date of execution, so long as each shareholder remains the shareholder of 21Vianet Technology. The above irrevocable power of attorney was subsequently assigned to 21Vianet Group, Inc.

Optional Share Purchase Agreements. The optional share purchase agreement is entered into among 21Vianet China, 21Vianet Technology, 21Vianet Beijing and the shareholders of 21Vianet Technology on December 19, 2006. Pursuant to the agreement, the shareholders irrevocably grant 21Vianet China or its designated persons the sole option to acquire from the shareholders or 21Vianet Technology all or any part of the equity interests in 21Vianet Technology and 21Vianet Beijing when permissible under PRC laws. 21Vianet Technology and 21Vianet Beijing made certain covenants to maintain the value of the equity interests, including but not limited to, engage in the ordinary course of business and refrain from making loans and entering into agreements exceeding the value of RMB200,000 with the exception of transactions made in the ordinary course of business. The initial term of 10 years has expired on December 18, 2016. The parties to this agreement have entered into a supplemental agreement on December 19, 2016, pursuant to which the term of this agreement is extended for 10 years and will be automatically renewed at the end of each 10-year term, unless otherwise terminated at the option of 21Vianet China with a 30-day advance written notice.

[Table of Contents](#)**Agreements that Transfer Economic Benefits from our Variable Interest Entity to Us or Absorb Losses**

Loan Agreements and Financial Support Letter. 21Vianet China and the shareholders of 21Vianet Technology entered into a loan agreement on January 28, 2011. Pursuant to the agreements, 21Vianet China has provided interest-free loan facilities of RMB7.0 million and RMB3.0 million, respectively, to the shareholders of 21Vianet Technology, Sheng Chen and Jun Zhang, which was used to provide capital to 21Vianet Technology to develop our data center and telecommunications value-added business and related businesses. There is no fixed term for the loan. To repay the loans, the shareholders of 21Vianet Technology are required to transfer their shares in 21Vianet Technology to 21Vianet China or any entity or person designated by 21Vianet China, as permitted under PRC laws. The shareholders of 21Vianet Technology also undertake not to transfer all or part of their equity interests in 21Vianet Technology to any third party, or to create any encumbrance, without the written permission from 21Vianet China. In addition, we will 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.

Exclusive Technical Consulting and Services Agreements. On July 15, 2003, 21Vianet China and 21Vianet Technology entered into an exclusive service agreement, which was superseded by a new exclusive technical consulting and service agreement entered into among 21Vianet China, 21Vianet Technology and 21Vianet Beijing on December 19, 2006. 21Vianet China agreed to provide 21Vianet Technology and 21Vianet Beijing with exclusive technical consulting and services, including internet technology services and management consulting services. 21Vianet Technology and 21Vianet Beijing agreed to pay an hourly rate of RMB1,000 and the rate is subject to adjustment at the sole discretion of 21Vianet China. 21Vianet Technology and 21Vianet Beijing agreed that they will not accept similar or comparable service arrangements that may replace the services provided by 21Vianet China without prior written consent of 21Vianet China. 21Vianet China is entitled to have sole and exclusive ownership of all rights, title and interests to any and all intellectual property rights arising from the provision of services. The initial term of 10 years has expired on December 18, 2016. The parties to this agreement have entered into a supplemental agreement on December 19, 2016, pursuant to which the term of this agreement is extended for 10 years and will be automatically renewed at the end of each 10-year term, unless otherwise terminated at the option of 21Vianet China with a 30-day advance written notice.

In April 2013, we completed acquisition of 100% equity interests in iJoy Holding Limited, or iJoy BVI, and its subsidiaries (collectively known as “iJoy”). In June 2014, we established aBitCool DG, which controls 100% of the equity interests in WiFire Network through contractual arrangements entered into in July 2014. The key terms of the contractual arrangements in relation to BJ iJoy and WiFire Network are similar to the contractual arrangements in relation to 21Vianet Technology, pursuant to which iJoy BVI and WiFire Group Inc., or WiFire Group, were considered as the primary beneficiaries of BJ iJoy and WiFire Network, respectively.

In the opinion of Han Kun Law Offices, our PRC legal counsel, each of the contracts under the contractual arrangements among us, our wholly-owned PRC subsidiaries, our variable interest entities and their shareholders governed by PRC law is valid, legally binding and enforceable to each party of such agreements under PRC laws and regulations, and will not result in any violation of PRC laws or regulations currently in effect.

We have been advised by our PRC legal counsel, however, that there are substantial uncertainties regarding the interpretation and application of current and future PRC laws and regulations. Accordingly, there can be no assurance that the PRC regulatory authorities, in particular the MIIT, which regulates providers of telecommunications value-added services and other participants in the PRC telecommunications industry, and the MOC, will not in the future take a view that is contrary to the above opinion of our PRC legal counsel. We have been further advised by our PRC legal counsel that if the PRC government finds that the agreements that establish the structure for operating our value-added services in China do not comply with PRC government restrictions on foreign investment in the telecommunications industry, we could be subject to severe penalties including being prohibited from continuing our operations. See “Risk Factors—Risks Related to Our Corporate Structure—If the PRC government finds that the arrangements that establish the structure for operating our business do not comply with PRC government restrictions on foreign investment in the telecommunications business or if these regulations or the interpretation of existing regulations change in the future, we could be subject to severe penalties or be forced to relinquish our interests in those operations.” In addition, these contractual arrangements may not be as effective in providing us with control over our variable interest entities as would direct ownership of our variable interest entities. See “Risk Factors—Risks Related to Our Corporate Structure—We rely on contractual arrangements with our variable interest entities and their shareholders for our China operations, which may not be as effective as direct ownership in providing operational control.”

[Table of Contents](#)**D. Property, Plants and Equipment**

Our headquarters are located at Guanjie Building Southeast, 1st Floor, 10# Jiuxianqiao East Road, Chaoyang District, Beijing, the People's Republic of China. We lease facilities for our office space in Beijing, Shanghai, Guangzhou, Shenzhen, Xi'an, Ningbo, Foshan, Dongguan, Hangzhou, Suzhou, Hong Kong and Taiwan. Our office leases generally have terms ranging from one to ten years and may be renewed upon expiration of the lease terms. As of December 31, 2019, our offices occupied an aggregate of 29,107 square meters of leased space.

In Beijing, we also lease facilities for our self-built data centers located: (i) in the Chaoyang District, through two lease agreements with Beijing Yinghe Century Land Co., Ltd., four lease agreements with Beijing Seven Star Technology Group Co., Ltd., one lease agreement with Telehouse Beijing BEZ Data Centre, and one lease agreement with China Youth Printing Factory, (ii) in the Beijing Economic and Technological Development Zone, through a lease agreement with Beijing Tengfei Boda Real Estate Development Co., Ltd., (iii) in the Daxing District, through a lease agreement with Beijing Xingguang Tuocheng Investment Co., Ltd., (iv) in the Xiangshan District, through a lease agreement with Beijing Tuspark Harmonious Investment Development Co., Ltd., or Beijing Tuspark, and (v) in the Tongzhou New Town, through a lease with Beijing BOHS Colour Printing Co., Ltd.. These leases provide an aggregate of approximately 119,639 square meters of leased space and host a total of 15,446 cabinets as of December 31, 2019. Each of the two leases with Beijing Yinghe Century Land Co., Ltd. has a term of two years expiring on August 31, 2021. Each of the four leases with Beijing Seven Star Technology Group Co., Ltd. has a term of five years and will expire on January 6, 2022, August 14, 2022, October 4, 2023 and October 15, 2023, respectively. The lease with Telehouse Beijing BEZ Data Center has a term of 10 years expiring on March 31, 2027. The lease may be renewed upon mutually agreed-upon terms before they expire. The lease with China Youth Printing Factory has a term of five years expiring on March 31, 2023, and we have the pre-emptive right to purchase the property upon any change of control circumstance in the property owner. The lease with Beijing Tengfei Boda Real Estate Development Co., Ltd. has a term of ten years expiring on August 31, 2021, subject to our pre-emptive right to renew the lease. The lease with Beijing Xingguang Tuocheng Investment Co., Ltd. has a term of twenty years expiring on February 28, 2033, subject to our pre-emptive right to renew the lease. The lease with Beijing Tuspark has a term of 20 years expiring on September 27, 2038 and will extend for another 20 years upon signing of a renewal agreement prior to 6 months before the expiration of the term. The lease with Beijing BOHS Colour Printing Co., Ltd. has a term of 8 years and 10 months expiring on September 30, 2028 and will automatically extend for another 26 years, and we have the pre-emptive right to purchase the property upon any change of control circumstance in the property owner.

In Shenzhen, we also lease facilities for our self-built data centers located in the Nanshan District, through two lease agreements with Shenzhen Merchants Property Development Co., Ltd., a lease agreement with Shenzhen Toukong Industrial Park Development and Operation Co., Ltd., and three lease agreements with Shenzhen Bay Technology Development Co., Ltd. These leases provide an aggregate of approximately 4,867 square meters of leased space and hosted a total of 770 cabinets as of December 31, 2019. The two leases with Shenzhen Merchants Property Development Co., Ltd. both have a term of 47 months expiring on September 30, 2015, which have been extended to September 30, 2020. The lease with Shenzhen Toukong Industrial Park Development and Operation Co., Ltd. has a term of eight years expiring on November 1, 2022. Two of the three leases with Shenzhen Bay Technology Development Co., Ltd. have a term of six years expiring on December 14, 2021, and the remaining one of the three leases with Shenzhen Bay Technology Development Co., Ltd. expired on February 29, 2020 and we are currently in the process of renewing it for one year with Shenzhen Bay Technology Development Co., Ltd.

In Shanghai, we also lease facilities for our self-built data centers located in the Baoshan District, through a lease agreement with Shanghai Cloud Century Co., Ltd., which provides an aggregate of 12,151 square meters of leases space and hosted a total of 1,412 cabinets as of December 31, 2019. The lease has a term of 20 years expiring on December 5, 2030. We also lease facilities for our self-built data centers located in the Pudong District, through a lease agreement with Shanghai Gosun Data System Co., Ltd., which provides an aggregate of 5,952 square meters of leases space and hosts a total of 1,194 cabinets as of December 31, 2019. The lease has a term of 8 years expiring on August 31, 2026.

In Hangzhou, we also lease facilities for our self-built data centers, offices and research centers located in Hangzhou Economic Development Zone, through a lease agreement with Hangzhou Economic and Development Zone Qiantang Real Estate Development Co., Ltd., which provides an aggregate of 11,020 square meters of leased space and hosted a total of 1,063 cabinets as of December 31, 2019. The lease has a term of twenty years expiring on July 31, 2031, subject to our pre-emptive right to renew the lease.

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In Guangzhou, we also lease facilities for our self-built data centers located in Guangzhou Economic and Technological Development Zone, through a lease agreement with Elec & Eltek International Company Limited, which provides an aggregate of 52,264 square meters of leases space and hosted a total of 2,267 cabinets as of December 31, 2019. The lease has a term of 10 years expiring on December 31, 2024, subject to our pre-emptive right to renew the lease.

In Ningbo, we also lease facilities for our self-built data centers located in Ningbo High Tech Zone, through a lease agreement with Ningbo Software and Service Outsourcing Industrial Park Management Service Center, which provides an aggregate of 1,200 square meters of leases space and hosted a total of 276 cabinets as of December 31, 2019. The lease has an initial term of 10 years which expired on December 31, 2019, and has been renewed with another three years expiring on December 31, 2022, subject to our pre-emptive right to renew the lease.

We have also built our own data centers in our self-owned buildings in Beijing, Xi'an, Shanghai, Foshan, Guangzhou, Suzhou, and Sichuan, housing 9,619 cabinets.

ITEM 4A. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 5. 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 "Item 3. Key Information—D. Risk Factors" or in other parts of this annual report on Form 20-F.

A. Operating Results

Overview

We are a leading carrier-neutral and cloud-neutral internet data center services provider in China. We host our customers' servers and networking equipment and provide interconnectivity to improve the performance, availability and security of their internet infrastructure. We also provide complementary value-added services, such as cloud services, VPN services and hybrid IT services. We started offering public cloud services in 2013, private cloud and hybrid services in 2014, and partnered with numerous cloud providers to support our comprehensive cloud-neutral platform. We believe that the scale of our data center and networking assets as well as our carrier-neutrality position us well to capture opportunities and become a leader in the rapidly emerging market for cloud computing infrastructure services in China.

We have benefited from our premium data centers and extensive interconnected nationwide data transmission network, diversified and loyal customer base and our strong focus on customer satisfaction and technological innovation. Going forward, we expect that we will continue to benefit from the growth of China's data center services market. However, we also face risks and uncertainties, including those relating to our integration of acquired businesses, our competition with, and dependency on, China Telecom and China Unicom, our ability to attract new customers and retain existing customers and our ability to control both business costs and costs as a result of being a public company. In particular, we plan to significantly increase the aggregate number of cabinets under management in both of our self-built data centers and partnered data centers.

We used to provide managed network services to enable customers to deliver data across the internet in a faster and more reliable manner through our data transmission network. In 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, in order to focus more on expanding our core IDC business and capturing the growing demand in this market. Following completion of the disposal, we have transferred all of our equity interests in Aipu Group and continue to hold 33.3% equity interests in the WiFire Entities.

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Our total net revenues generated from providing hosting and related services increased from RMB2,975.2 million in 2017 to RMB3,401.0 million in 2018 and further to RMB3,789.0 million (US\$544.3 million) in 2019, representing a CAGR of 12.9% from 2017 to 2019. The total number of cabinets under our management increased from 29,080 as of December 31, 2017 to 30,654 as of December 31, 2018 and to 36,291 as of December 31, 2019. Our average monthly recurring net revenues from hosting and related services increased from RMB235.9 million in 2017 to RMB275.4 million in 2018 and further to RMB289.1 (US\$41.5 million) in 2019. We recorded a net loss of RMB917.6 million, RMB186.7 million and RMB181.2 million (US\$26.0 million) in 2017, 2018 and 2019, respectively, which reflected share-based compensation expenses of RMB47.1 million, RMB59.5 million and RMB43.9 million (US\$6.3 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. We have benefited from the rapid growth of China's data center services market during the recent years. According to IDC, the total China internet data center services market was US\$8.8 billion in 2018, a 34.6% year over year growth rate, and is expected to reach US\$24.8 billion in 2023, representing a five-year CAGR of 23.1%. 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 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 29,080, 30,654 and 36,291 cabinets under management as of December 31, 2017, 2018 and 2019, respectively. Our annualized average monthly cabinet utilization rates were 75.3%, 70.6% and 66.0% in 2017, 2018 and 2019, respectively. We calculate the annualized cabinet utilization rate in a year as the average of the four quarterly cabinet utilization rates in that year, and we calculate quarterly cabinet utilization rate by dividing our weighted average billable cabinets by weighted average cabinet capacity in that quarter. Our quarterly and annualized cabinet utilization rates fluctuate due to the continuous changes in both our weighted average billable cabinets and weighted 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 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 may 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 over-estimate 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 business is based on a recurring revenue model of our hosting and related services. We consider these services recurring as our customers are generally billed and revenue recognized on a fixed and recurring basis each month for the duration of their contract, which is generally one to three years in length. Our non-recurring revenues are primarily comprised of fees charged for installation services, additional bandwidth used by customers beyond 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.

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We use “monthly recurring revenues” to measure those revenues recognized on a fixed and recurring basis each month. Recurring revenues from hosting and related services have comprised more than 90% of our net revenues from hosting and related services during the past three years. Our average monthly recurring revenues from hosting and related services increased from RMB235.9 million in 2017 to RMB275.4 million in 2018 and further to RMB289.1 million (US\$41.5 million) in 2019.

We use “churn rate” to measure the reduction of monthly revenues that are attributable to the termination of customer contracts as a percentage of total monthly recurring revenues of the previous month. Our average monthly hosting churn rate, based on our core IDC business, was 0.5% in 2017, 0.3% in 2018 and 0.5% in 2019.

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 in our data centers, but not the bulk of their needs. 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 new business areas that complement our core data center service offerings.

- *Cloud computing services.* Cloud computing services, largely through our partnerships with Microsoft, IBM and others, have contributed to our results of operations for the past three years. Our partnership with IBM expired in December 2019. 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 of 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.
- *Enterprise VPN services.* As one of the largest enterprise VPN service providers in the Asian Pacific region following our acquisition of Dermot Entities in August 2014, we have experienced and expect continued 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 refer to expenses associated with acquiring bandwidth and related resources from carriers for our data centers. Telecommunications costs also cover rentals, utilities and other costs in connection with the cabinets we lease from our partnered data centers. Other costs include utilities and rental expenses for our self-built data centers, payroll, depreciation and amortization of our property and equipment, and other related costs. These costs increase as the number of our cabinets under management increases, likewise as we increase our headcount.

The mix of the self-built data centers and partnered data centers also affects our cost structure. Gross margin for cabinets located in our partnered data centers is generally lower than cabinets located in our self-built data centers. This is because telecommunication carriers who lease cabinet spaces to us for our partnered data centers would 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 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 relatively to partnered data centers, we may not be able to improve our gross margins.

[Table of Contents](#)**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 years ended December 31, 2015 and 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 revenues by segment, both in an absolute amount and as a percentage of total net revenues, for the periods presented.

	2017		For the Years Ended December 31,			
	RMB	%	RMB	%	RMB	USD
	(in thousands, except percentages)					
Net revenues:						
Hosting and related services	2,975,178	87.7	3,401,037	100.0	3,788,967	544,251
Managed network services	417,527	12.3	—	—	—	—
Total net revenues	3,392,705	100.0	3,401,037	100.0	3,788,967	544,251

Hosting and Related Services

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 interconnectivity services, cloud services, value-added services and VPN services as part of our hosting and related services business. Revenues from our hosting and related services were RMB2,975.2 million, RMB3,401.0 million and RMB3,789.0 million (US\$544.3 million) in 2017, 2018 and 2019, respectively, representing 87.7%, 100% and 100% of our total net revenues in the respective periods.

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 services they used in the previous month.

Managed Network Services

Revenues from our managed network services were RMB417.5 million in 2017. In September 2017, we completed the disposal of the managed network services business segment and deconsolidated the financial results related to managed network services segment since then.

[Table of Contents](#)**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,					
	2017		2018		2019	
	RMB	%	RMB	%	RMB	USD
	(in thousands, except percentages)					
Cost of revenues:						
Telecommunications costs	1,533,615	42.5	1,332,280	39.2	1,570,825	225,635
Others	1,100,680	35.1	1,123,886	33.0	1,278,693	183,673
Total cost of revenues	2,634,295	77.6	2,456,166	72.2	2,849,518	409,308

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, payroll and other compensation costs and other miscellaneous items related to our service offerings.

The following table sets forth, for the periods indicated, our cost of revenues by segment, in absolute amounts and as a percentage of the net revenues of the relevant segment:

	For the Years Ended December 31,					
	2017		2018		2019	
	RMB	%	RMB	%	RMB	USD
	(in thousands, except percentages)					
Cost of revenues:						
Hosting and related services	2,130,279	71.6	2,456,166	72.2	2,849,518	409,308
Managed network services	504,016	120.7	—	—	—	—

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,					
	2017		2018		2019	
	RMB	% Net of Revenues	RMB	% Net of Revenues	RMB	USD
	(in thousands, except percentages)					
Operating expenses:						
Sales and marketing expenses ⁽¹⁾	256,682	7.6	172,176	5.1	206,309	29,634
Research and development expenses ⁽¹⁾	149,143	4.4	92,109	2.7	88,792	12,754
General and administrative expenses ⁽¹⁾	519,950	15.3	462,637	13.5	415,277	59,651
Allowance/(reversal) for doubtful debt	37,427	1.1	(598)	(0.0)	1,557	224
Changes in the fair value of contingent purchase consideration payable	937	0.0	(13,905)	(0.4)	—	—
Impairment of long-lived assets	401,808	11.8	—	—	—	—
Impairment of goodwill	766,440	22.6	—	—	—	—
Impairment of receivables from equity investees	—	—	—	—	52,142	7,490
Other operating income	(5,439)	(0.2)	(5,027)	(0.1)	(6,862)	(986)
Total Operating Expenses ⁽¹⁾	2,126,948	62.6	707,392	20.8	757,215	108,767

Note:

(1) Includes share-based compensation expense as follows:

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	2017	2018	2019	
	RMB	RMB	RMB	US\$
	(in thousands)			
Allocation of share-based compensation expenses:				
Sales and marketing expenses	(681)	2,139	354	51
Research and development expenses	142	1,385	1,177	169
General and administrative expenses	47,945	53,346	40,501	5,817
Total share-based compensation expenses	47,406	56,870	42,032	6,037

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 and 2014 Plan. As of February 29, 2020, options to purchase 931,254 ordinary shares and 3,271,135 RSUs have been granted to our employees, directors and consultants. We recorded share-based compensation expenses in the amount of RMB47.4 million, RMB56.9 million and RMB42.0 (US\$6.0 million) for the year ended December 31, 2017, 2018 and 2019, 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.

[Table of Contents](#)***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, 2017, 2018 and 2019. 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 17%, 20% and 20% for the years ended December 31, 2017, 2018 and 2019, 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 for 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, which will expire in October 2020. 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, 2017, 2018 and 2019, 21Vianet Beijing enjoyed a preferential tax rate of 15%.

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, 2017, 2018 and 2019, the tax rate for Xi'an Sub was 25%, 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 year ended December 31, 2018 and 2019, 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 effective for three consecutive years. The HNTE certificate has been renewed in October 2018, which will expire in October 2021. For the years ended December 31, 2017, 2018 and 2019, SH Blue Cloud enjoyed a preferential tax rate of 15%.

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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, which will expire in November 2022. For the years ended December 31, 2017, 2018 and 2019, 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, 2019, 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 is 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.

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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 and other value-added services ("Hosting services"), virtual private network services providing encrypted secured connection to public internet ("VPN services") and public cloud service through strategic partnership with Microsoft ("Cloud services").

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.

We derive revenue primary from the delivery of Hosting services, VPN services and Cloud services.

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 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. 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.

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Cloud services allow businesses to run their applications over the internet using the IT infrastructure. Revenue from Cloud services consisted of incentive revenue from Microsoft upon completion of certain conditions and a fixed percentage amount based on gross sales price generated from Cloud services provided to end customers. Cloud services are generally provided to end customers for a fixed amount over the contract period and the related revenues are recognized on a straight-line basis over the contract period. For certain contracts where considerations are based on the usage of the cloud resources, the related revenues are recognized based on the consumption at the predetermined rate as the services are rendered throughout the contract term. We record revenue for Cloud service on a net basis.

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 sheet, 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 represents 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, 2018 and 2019, we have deferred revenue amounting up to RMB57.8 million and RMB57.6 million (US\$8.3 million), respectively. The decrease in deferred revenue as compared to the year ended December 31, 2018 is a result of the decrease in consideration received from the customers. Revenue recognized from opening deferred revenue balance was RMB47.0 million (US\$6.8 million) for the year ended December 31, 2019.

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 bank borrowings, available-for-sale investments, liability classified restricted share units ("RSU"). Other than the bonds payable and long-term bank borrowings, 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 bank borrowings approximate their fair values since they bear interest rates which approximate market interest rates.

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. See "—C. Organizational Structure". 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; and (ii) amongst WiFire Group, aBitCool DG, WiFire Network and its shareholders; and similar conclusion has been reached respect to the variable interest entity structure with iJoy BVI and WiFire Group as the primary beneficiaries of BJ iJoy and WiFire Network, respectively. 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.

[Table of Contents](#)**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.

Long-term Investments

Our long-term investments consist of equity investments without readily determinable fair value, equity method investments and available-for-sale debt investments.

Prior to adopting ASC Topic 321, *Investments—Equity Securities* (“ASC 321”) on January 1, 2018, we carries at cost its investments in investees that do not have readily determinable fair value and over which we do not have significant influence, in accordance with ASC Subtopic 325-20, *Investments-Other: Cost Method Investments* (“ASC 325-20”). We only adjust the carrying value of such investments for other-than-temporary decline in fair value and for distribution of earnings that exceed our share of earnings since its investment.

Management regularly evaluates the impairment of equity investments without readily determinable fair value based on the performance and financial position of the investee as well as other evidence of market value. Such evaluation includes, but is not limited to, reviewing the investee’s cash position, recent financing, projected and historical financial performance, cash flow forecasts and financing needs. An impairment loss is recognized in earnings equal to the excess of the investment’s cost over its fair value at the balance sheet date of the reporting period for which the assessment is made. The fair value would then become the new cost basis of the investment.

We adopted ASC 321 on January 1, 2018 and the cumulative effect of adopting the new standard on opening retained deficit is nil. Pursuant to 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.

Pursuant to ASC 321, 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.

Available-for-sale debt investments are convertible debt instruments issued by private companies, which are measured at fair value, with unrealized gains or losses recorded in accumulated other comprehensive income.

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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.

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, we 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. In 2017, there were two reporting units consisting of two service lines namely hosting and related services and managed network services. The goodwill was reassigned to the two reporting units using a relative fair value allocation approach.

After the disposal of WiFire Entities and Aipu Group in September 2017, we determined that there is only hosting and related services remained and hence our company as a whole is one reporting unit as of December 31, 2018 and 2019.

We early adopted ASU No. 2017-04, *Simplifying the Test for Goodwill Impairment* ("ASU 2017-04"), which simplifies the accounting for goodwill impairment by eliminating Step two from the goodwill impairment test. Under the new guidance, if a reporting unit's carrying amount exceeds its fair value, an entity will record an impairment charge based on that difference. The impairment charge will be limited to the amount of goodwill allocated to that reporting unit. Fair value is primarily determined by computing the future discounted cash flows expected to be generated by the reporting unit.

Immediately before the disposal of WiFire Entities and Aipu Group in September 2017, we completed the impairment test for goodwill in managed network services. We determined the fair value of the reporting unit using the income approach based on the discounted expected cash flows associated with the reporting unit. The discounted cash flows for the reporting unit were based on five-year projections. Cash flow projections were based on past experience, actual operating results and management best estimates about future developments as well as certain market assumptions. Cash flows after five years were estimated using a terminal value calculation, which considered terminal value growth at 3%, considering the long-term revenue growth for entities in a similar industry in the PRC. The discount rate of approximately 13% was derived and used in the valuations which reflect the market assessment of the risks specific to us and our industry and is based on its weighted average cost of capital. The resulting fair value of the reporting unit significant lower than its carrying value, we fully impaired goodwill in managed network services and recorded an amount of RMB766 million for impairment loss of goodwill as of December 31, 2017.

Pursuant to ASC 350, in 2018 and 2019, we performed a qualitative assessment for hosting and related services and completed our annual impairment test for goodwill that has arisen out of our acquisitions. We evaluated all relevant factors including, but not limited to, macroeconomic conditions, industry and market conditions, financial performance, and the share price of us. We 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 and 2019.

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Impairment of long-lived assets

We evaluate our long-lived assets or asset group, including intangible assets with finite lives, for impairment whenever events or changes in circumstances (such as a significant adverse change to market conditions that will impact the future use of the assets) indicate that the carrying amount of an asset or a group of long-lived assets may not be recoverable. When these events occur, we evaluate for impairment by comparing the carrying amount of the assets to future undiscounted net cash flows expected to result from the use of the assets and their eventual disposition. If the sum of the expected undiscounted cash flow is less than the carrying amount of the assets, we would recognize an impairment loss based on the excess of the carrying amount of the asset group over its fair value. Fair value is generally determined by discounting the cash flows expected to be generated by the assets, when the market prices are not readily available for the long-lived assets.

In 2016, due to the deterioration of the operating results of one of our asset group, we recognized an impairment loss based on the excess of the carrying amount of the asset group over its fair value. We determined the fair value of the asset group using the income approach based on the discounted expected cash flows associated with the asset group. The discounted cash flows for the asset group were based on eight year projections which is consistent with the remaining useful lives of its principal assets. Cash flow projections were based on past experience, actual operating results and management best estimates about future developments as well as certain market assumptions. The discount rate of approximately 13% was derived and used in the valuations which reflect the market assessment of the risks specific to us and our industry and is based on its weighted average cost of capital.

As of December 31, 2017, due to continued operational losses, we recorded the long-lived assets impairment amounting to RMB170.7 million and RMB231.1 million for the asset groups of Aipu Group and WiFire Entities, respectively, resulting from excess of the carrying amount of the asset groups over their fair values of the two asset groups, respectively.

We determined the fair value of the asset groups using the income approach based on the discounted expected cash flows associated with the respective asset groups. The discounted cash flows for the asset groups were based on seven year projections for Aipu and five years for WiFire Entities, which are consistent with the remaining useful lives of its principal assets. Cash flow projections were based on the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. The discount rate of approximately 13% was derived and used in the valuations which reflect the market assessment of the risks specific to us and our industry and is based on its weighted average cost of capital. No impairment was recognized in other assets groups as there was no impairment indicator identified.

The impairment loss reduced the carrying amount of the long-lived assets of a group on a pro-rata basis using the relative carrying amount of those assets.

In 2018 and 2019, we performed a qualitative assessment for impairment on whether events or changes in circumstances indicate that the carrying amount of an asset or a group of long-lived assets might not be recoverable. No impairment was recognized for the year ended December 31, 2018 and 2019 as there was no impairment indicator identified.

We recorded impairment charges associated with our long-lived assets and acquired intangibles as follows:

	Years ended December 31,			
	2017	2018	2019	
	RMB'000	RMB'000	RMB'000	US\$'000
Impairment of property and equipment	237,956	—	—	—
Impairment of intangible assets	163,852	—	—	—

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.

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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. We record a valuation allowance against deferred tax assets if, based on the weight of available evidence, it is more-likely-than-not that some portion, or all, of the deferred tax assets will not be realized. The effect on deferred taxes of a change in tax rates is recognized in income in the period that includes the enactment date.

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.

For the performance bonuses that the employees can elect to settle in cash and/or restricted shares of the us ("Share-Settled Bonus"), we estimate the portion of the arrangement to be settled in shares based on its past settlement practices and classifies such portion as a liability in accordance with ASC Topic 480, *Distinguishing Liabilities from Equity* ("ASC 480") as we can only settle the Share-Settled Bonus by issuing variable number of shares until the settlement date. We remeasure the fair value of such liability at each reporting period end through earnings until the underlying shares were approved and granted to the employees and accounted for the granted restricted shares unit as equity award. The original cash bonus amount continues to be classified as a liability within "Accrued expenses and other payables" in the consolidated balance sheets.

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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.

In January 2017, we made revisions to the Share-Settled Bonus to remove the option to settle bonus accrued in 2017. For the Share-Settled Bonus accrued in 2016 which were elected to be settled in shares, we issued shares to settle all the Share-Settled Bonus as of December 31, 2017.

Segment Reporting

In accordance with ASC Topic 280, *Segment Reporting* ("ASC 280"), we historically had two reportable segment since our chief executive officer, who has been identified as our chief operating decision-maker ("CODM") formerly relied on the results of operations of hosting and related services and managed network services separately when making decisions on allocating resources and assessing performance of us. Hosting and related services business focuses primarily on colocation, interconnectivity, cloud, VPN, hybrid IT and other value-added services. Managed network services focuses on businesses that primarily utilize bandwidth such as content delivery network ("CDN") service, hosting area network services and last-mile wired broadband service.

In September 2017, we disposed WiFire Entities and Aipu Group, which are primarily engaged in the managed network services. After the disposal, we have only one hosting and related services remained and the CODM reviews the operation result of the company as a whole. As of December 31, 2018 and 2019, we only had one reporting segment.

[Table of Contents](#)**Recently Issued Accounting Pronouncements**

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments — Credit Losses* (Topic 326), Measurement of Credit Losses on Financial Instruments (“ASU 2016-13”). ASU 2016-13 changes the impairment model for most financial assets and certain other instruments. The standard will replace “incurred loss” approach with an “expected loss” model for instruments measured at amortized cost. For available-for-sale debt securities, entities will be required to record allowances rather than reduce the carrying amount, as they do today under the other-than-temporary impairment model. The standard is effective for public business entities for annual periods beginning after December 15, 2019, and interim periods therein. We do not currently anticipate the adoption of this ASU to have a material impact on our consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement* (“ASU 2018-13”). ASU 2018-13 modifies the disclosure requirements for fair value measurements by removing, modifying, or adding certain disclosures. The amendments in ASU 2018-13 will be effective for us beginning after January 1, 2020 including interim periods within the year. Early adoption is permitted. An entity is permitted to early adopt any removed or modified disclosures upon issuance of ASU No. 2018-13 and delay adoption of the additional disclosures until their effective date. We do not expect the amendments of this guidance to have a material impact on our consolidated financial statements.

In December 2019, the FASB issued ASU 2019-12, *Income Taxes* (Topic 740): *Simplifying the Accounting for Income Taxes*. This update simplifies the accounting for income taxes as part of the FASB’s overall initiative to reduce complexity in accounting standards. The amendments include removal of certain exceptions to the general principles of ASC 740, Income taxes, and simplification in several other areas such as accounting for a franchise tax (or similar tax) that is partially based on income. The update is effective in fiscal years beginning after December 15, 2020, and interim periods therein, and early adoption is permitted. Certain amendments in this update should be applied retrospectively or modified retrospectively, all other amendments should be applied prospectively. We do not expect the amendments of this guidance to have a material impact on our consolidated financial statement.

Inflation

In the last 3 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 2017, 2018 and 2019 were 1.6%, 2.1% and 2.9%, respectively. The year-over-year percent changes in the consumer price index for January 2018, 2019 and 2020 were increases of 1.5%, 1.7% and 5.4%, 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.

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	For the Years Ended December 31,					
	2017		2018		2019	
	RMB	%	RMB	%	RMB	USD
	(in thousands, except percentages)					
Consolidated Statements of Operations Data:						
Net revenues	3,392,705	100.0	3,401,037	100.0	3,788,967	544,251
Hosting and related services	2,975,178	87.7	3,401,037	100.0	3,788,967	544,251
Managed network services	417,527	12.3	—	—	—	—
Cost of revenues	(2,634,295)	(77.6)	(2,456,166)	(72.2)	(2,849,518)	(409,308)
Hosting and related services	(2,130,279)	(62.7)	(2,456,166)	(72.2)	(2,849,518)	(409,308)
Managed network services	(504,016)	(14.9)	—	—	—	—
Gross profit	758,410	22.4	944,871	27.8	939,449	134,943
Operating (expenses) income:						
Sales and marketing expenses	(256,682)	(7.6)	(172,176)	(5.1)	(206,309)	(29,634)
Research and development expenses	(149,143)	(4.4)	(92,109)	(2.7)	(88,792)	(12,754)
General and administrative expenses	(519,950)	(15.3)	(462,637)	(13.5)	(415,277)	(59,651)
(Allowance)/reversal for doubtful debt	(37,427)	(1.1)	598	0.0	(1,557)	(224)
Changes in the fair value of contingent purchase consideration payables	(937)	(0.0)	13,905	0.4	—	—
Impairment of long-lived assets	(401,808)	(11.8)	—	—	—	—
Impairment of goodwill	(766,440)	(22.6)	—	—	—	—
Impairment of receivables from equity investees	—	—	—	—	(52,142)	(7,490)
Other operating income	5,439	0.2	5,027	0.1	6,862	986
Total operating expenses	(2,126,948)	(62.6)	(707,392)	(20.8)	(757,215)	(108,767)
Operating (loss) profit	(1,368,538)	(40.2)	237,479	7.0	182,234	26,176
Interest income	32,925	1.0	45,186	1.3	54,607	7,844
Interest expense	(185,313)	(5.5)	(236,066)	(6.9)	(345,955)	(49,693)
Impairment of long-term investment	(20,258)	(0.6)	—	—	—	—
Gain on disposal of subsidiaries	497,036	14.7	4,843	0.1	—	—
Loss on debt extinguishment	—	—	—	—	(18,895)	(2,714)
Other income	16,764	0.5	58,033	1.7	36,380	5,226
Other expenses	(17,060)	(0.5)	(4,103)	(0.1)	(5,632)	(809)
Foreign exchange loss	(17,153)	(0.5)	(81,055)	(2.4)	(27,995)	(4,021)
(Loss) income before income taxes and gain (loss) from equity method investments	(1,061,597)	(31.1)	24,317	0.7	(125,256)	(17,991)
Income tax benefits (expense)	90,170	2.7	(24,411)	(0.7)	(5,437)	(781)
Gain (loss) from equity method investments	53,783	1.6	(186,642)	(5.5)	(50,553)	(7,261)
Consolidated net loss	(917,644)	(26.8)	(186,736)	(5.5)	(181,246)	(26,033)
Net loss (income) attributable to non-controlling interest	144,914	4.3	(18,329)	(0.5)	(1,046)	(150)
Net loss attributable to the Company's ordinary shareholders	(772,730)	(22.5)	(205,065)	(6.0)	(182,292)	(26,183)

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018**Net Revenues**

Our net revenues in 2019 increased from RMB3,401.0 million in 2018 to RMB3,789.0 million (US\$544.3 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.

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Revenues from our hosting and related services amounted to RMB3,789.0 million (US\$544.3 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 (US\$409.3 million) in 2019. Our telecommunication costs increased by 17.9% from RMB1,332.3 million in 2018 to RMB1,570.8 million (US\$225.6 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 (US\$134.9 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 (US\$108.8 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 (US\$29.6 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 (US\$12.8 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 (US\$59.7 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 (US\$7.5 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 (US\$7.8 million) in 2019, primarily due to an increase in interest income generated from short-term investments.

[Table of Contents](#)*Interest Expense*

Our interest expense increased from RMB236.1 million in 2018 to RMB346.0 million (US\$49.7 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 (US\$5.2 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 (US\$0.8 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 (US\$2.7 million) 2019.

Foreign Exchange Loss

We had a foreign exchange loss of RMB28.0 million (US\$4.0 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 (US\$0.8 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 (US\$3.7 million) in 2019;
- Loss incurred outside China reduces the income tax benefit by RMB77.1 million (US\$11.1 million) in 2019; and
- Current and deferred tax rate differences leads to an income tax expense in the amount of RMB8.7 million (US\$1.3 million) in 2019.

Consolidated Net Loss

As a result of the above, we recorded a net loss of RMB181.2 million (US\$26.0 million) in 2019, as compared to a net loss of RMB186.7 million in 2018.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017*Net Revenues*

Our net revenues in 2018 increased from RMB3,392.7 million in 2017 to RMB3,401.0 million in 2018. The increase was primarily attributable to the growing demand for data centers and cloud services in the domestic market, partially offset by the disposal of WiFire Entities and Aipu Group.

Revenues from our hosting and related services amounted to RMB3,401.0 million in 2018, increasing by 14.3% from RMB2,975.2 million in 2017. 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 29,080 as of December 31, 2017 to 30,654 as of December 31, 2018.

[Table of Contents](#)*Cost of Revenues*

Our cost of revenues decreased by 6.8% from RMB2,634.3 million in 2017 to RMB2,456.2 million in 2018. Our telecommunication costs decreased by 13.1% from RMB1,533.6 million in 2017 to RMB1,332.3 million in 2018. The decrease in our cost of revenues was primarily due to our improved cost efficiency of hosting and related services and disposal of WiFire Entities and Aipu Group.

Gross Profit

Our gross profit increased by 24.6% from RMB758.4 million in 2017 to RMB944.9 million in 2018. As a percentage of net revenues, our gross profit increased from 22.4% in 2017 to 27.8% in 2018. The increase of gross profit and gross margin was primarily due to our improved cost efficiency of hosting and related services and disposal of WiFire Entities and Aipu Group.

Operating Expenses

Our operating expenses decreased by 66.7% from RMB2,126.9 million in 2017 to RMB707.4 million in 2018. Our operating expenses as a percentage of net revenues decreased from 62.6% in 2017 to 20.8% in 2018. The decrease of our operating expenses was primarily due to the successful implementation of the Company's efficiency enhancement initiatives and the decrease in labor cost as a result of the disposal of WiFire Entities and Aipu Group.

Sales and Marketing Expenses. Our sales and marketing expenses decreased by 32.9% from RMB256.7 million in 2017 to RMB172.2 million in 2018, primarily due to a decrease in labor cost as a result of the disposal of WiFire Entities and Aipu Group. As a percentage of net revenues, our sales and marketing expenses was 7.6% and 5.1% in 2017 and 2018, respectively.

Research and Development Expenses. Our research and development expenses decreased from RMB149.1 million in 2017 to RMB92.1 million in 2018. As a percentage of net revenues, our research and development expenses decreased from 4.4% in 2017 to 2.7% in 2018.

General and Administrative Expenses. Our general and administrative expenses decreased by 11.0% from RMB520.0 million in 2017 to RMB462.6 million in 2018, primarily due to a decrease in labor cost as a result of the disposal of WiFire Entities and Aipu Group. As a percentage of net revenues, our general and administrative expenses decreased from 15.3% in 2017 to 13.5% in 2018.

Changes in the Fair Value of Contingent Purchase Consideration Payable. We recorded a gain from the changes of the fair value of contingent purchase consideration payable in the amount of RMB13.9 million in 2018 in connection with our acquisition, which was attributable to the seller's waiver of its rights to receive contingent purchase consideration in this transaction.

Impairment of long-lived assets. We incurred nil in impairment of long-lived assets in 2018.

Impairment of goodwill. We incurred nil in impairment of goodwill in 2018.

Interest Income

Our interest income increased from RMB32.9 million in 2017 to RMB45.2 million in 2018, primarily due to an increase in interest income generated from short-term investments.

Interest Expense

Our interest expense increased from RMB185.3 million in 2017 to RMB236.1 million in 2018, primarily due to interest expense recognized for the 2020 Notes.

[Table of Contents](#)*Other Income*

Our other income increased from RMB16.8 million in 2017 to RMB58.0 million in 2018. Other income in 2018 was primarily attributable to disposal gain on an equity method investment and equity investment without readily determinable fair value.

Other Expenses

Our other expenses decreased from RMB17.1 million in 2017 to RMB4.1 million in 2018. 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 incurred nil in loss on debt extinguishment in 2018.

Foreign Exchange Gain

We had a foreign exchange loss of RMB81.1 million in 2018, primarily due to the appreciation of U.S. dollar against Renminbi in 2018.

Income Tax (Expense) Benefits

We recorded income tax expense in the amount of RMB24.4 million in 2018, compared with income tax benefits of RMB90.2 million in 2017, with the effective tax rates 15.0%. This is primarily due to:

- Change in valuation allowance leads to an increase in the income tax expense in the amount of RMB79.7 million in 2018;
- Loss incurred outside China reduces the income tax benefit by RMB63.5 million in 2018; and
- Current and deferred tax rate differences leads to an income tax benefit in the amount of RMB37.9 million in 2018.

Consolidated Net Loss

As a result of the above, we recorded a net loss of RMB186.7 million in 2018, as compared to a net loss of RMB917.6 million in 2017.

B. Liquidity and Capital Resources

As of December 31, 2019, we had RMB1,808.5 million (US\$259.8 million) in cash and cash equivalents, RMB548.7 million (US\$78.8 million) in restricted cash (current and non-current portion) and RMB363.9 million (US\$52.3 million) in short-term investments.

As of December 31, 2019, we had short-term bank borrowings and long-term bank borrowings (current portions) from various commercial banks with an aggregate outstanding balance of RMB267.0 million (US\$38.4 million), and long-term bank borrowings (excluding current portions) from various commercial banks with an aggregate outstanding balance of RMB79.5 million (US\$11.4 million). The short-term bank borrowings bore weighted average interest rates of 4.04%, 4.05% and 4.56% per annum, respectively, in 2017, 2018 and 2019. 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 bank borrowing arrangements since 2013 with maturity terms of two to five years. The long-term bank borrowing (including current portion) outstanding as of December 31, 2017, 2018 and 2019 bore weighted-average interest rates of 5.50%, 5.31% and 5.28% per annum, respectively, in 2017, 2018 and 2019 and have certain financial covenants.

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In August 2017, we issued the Original Notes. In September 2017, we issued the Notes. The Notes were priced at a slight premium of 100.04, with an effective yield of 6.98%. The Notes constitute a further issuance of, and were consolidated to form a single series with, the Original Notes. 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 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 50.28% 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, with US\$131,161,000 of the principal amount of the 2020 Notes remains outstanding as of December 31, 2019. 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) restrictive covenant that restricts our ability in consolidation, merger and sale of assets to a certain extent; (ii) 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) dividend payment restriction covenant; and (iv) 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 have unused credit line in the amount of RMB326.1 million (US\$46.8 million) as of December 31, 2019, pursuant to credit agreements entered into with six banks. A total of RMB750.0 million (US\$107.7 million) credit line was granted to us under seven credit agreements, of which we have used RMB423.9 million (US\$60.9 million). There are no material covenants that restrict our ability to undertake additional financing associated with the used credit line. No terms and conditions of the unused credit line 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, 2019 is sufficient for our present requirements.

As of December 31, 2019, we had total outstanding debts of RMB3,318.4 million (US\$476.7 million). The growth of our business relies on the construction of new data centers. In additions, we also intend to acquire or invest in companies that are complementary to our business. Therefore, we intend to use the proceeds of our outstanding debt mainly to add new data centers and fund acquisitions. For example, as of December 31, 2019, we have purchase commitments (commitments related to acquisition of machinery, equipment, construction in progress, bandwidth and cabinet capacity) of RMB826.1 million (US\$118.7 million) coming due during the 12-month period, and we intend to use a portion of the proceeds to fund the purchase commitments.

As of December 31, 2019, the amount of outstanding debt inside and outside of the PRC was RMB346.5 million (US\$49.8 million) and RMB2,971.9 million (US\$426.9 million), respectively. We believe we have sufficient financial resources to meet both of our onshore and offshore debt obligations when due.

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, 2019, the total amount of cash and cash equivalents, restricted cash and short-term investments was RMB2,721.0 million (US\$390.9 million), of which RMB918.5 million (US\$132.0 million), RMB252.5 million (US\$36.3 million) and RMB1,550.0 million (US\$222.6 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 "Item 3. Key Information—D. Risk Factors—Risks Related to Doing Business in China—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.

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The following table sets forth a summary of our cash flows for the periods indicated:

	For the Years Ended December 31,			
	2017 ⁽¹⁾	2018 ⁽¹⁾	2019	
	RMB	RMB	RMB	US\$
		(in thousands)		
Net cash generated from operating activities	487,202	704,966	802,922	115,332
Net cash used in investing activities	(833,307)	(304,846)	(1,611,983)	(231,550)
Net cash (used in) generated from financing activities	(612,651)	(19,901)	461,557	66,302
Effect on foreign exchange rate changes on cash and cash equivalents and restricted cash	(140,298)	85,333	43,660	6,271
Net (decrease) increase in cash and cash equivalents and restricted cash	(1,099,054)	465,552	(303,844)	(43,645)
Cash and cash equivalents and restricted cash at beginning of the year	3,294,523	2,195,469	2,661,021	382,232
Cash and cash equivalents and restricted cash at end of the year	2,195,469	2,661,021	2,357,177	338,587
Cash and cash equivalents, restricted cash and short-term investments at end of the year	2,744,359	2,906,035	2,721,033	390,852

Note:

- (1) The FASB issued new guidance in August 2016 and further updated in November 2016, which requires that amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning of period and end of period total amount shown on the statement of cash flows. This guidance has been adopted and applied retrospectively by us to the prior periods of 2017 presented herein.

Operating Activities

Net cash generated from operating activities was RMB802.9 million (US\$115.3 million) in 2019, compared to net cash generated from operating activities of RMB705.0 million in 2018.

Net cash generated from operating activities in 2019 primarily resulted from a net loss of RMB181.2 million (US\$26.0 million), positively adjusted for certain items such as

(i) depreciation and amortization of RMB772.2 million (US\$110.9 million), (ii) the increase in advances from customers of RMB398.7 million (US\$57.3 million), and (iii) loss from equity method investments of RMB50.6 million (US\$7.3 million), partially offset by certain item such as the increase in prepaid expenses and other current assets of RMB328.2 million (US\$47.1 million).

Net cash generated from operating activities in 2019 primarily reflected payments of RMB3,795.1 million (US\$545.1 million) received from our customers, partially offset by our payments for telecommunication costs of RMB859.1 million (US\$123.4 million) in 2019, payment for taxes of RMB71.3 million (US\$10.2 million) and payment to employees of RMB688.6 million (US\$98.9 million).

Net cash generated from operating activities was RMB705.0 million in 2018, compared to net cash generated from operating activities of RMB487.2 million in 2017.

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Net cash generated from operating activities 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.

Net cash generated from operating activities in 2018 primarily reflected payments of RMB3,611.8 million received from our customers, partially offset by our payments for telecommunication costs of RMB852.0 million in 2018, payment for taxes of RMB86.3 million and payment to employees of RMB670.1 million.

Investing Activities

Net cash used in investing activities was RMB1,612.0 million (US\$231.6 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 (US\$179.4 million), our payments for long-term investments in the amount of RMB9.3 million (US\$1.3 million), our payment for short-term investments in the amount of RMB436.7 million (US\$62.7 million), offset by proceeds received from maturity for short-term investments in the amount of RMB312.2 million (US\$44.8 million), proceeds from disposal of long-term investments in the amount of RMB19.0 million (US\$2.7 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 RMB461.6 million (US\$66.3 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 (US\$289.0 million) and the proceeds from short-term bank borrowings of RMB234.5 million (US\$33.7 million), partially offset by payment for purchase of property and equipment through finance leases of RMB333.6 million (US\$47.9 million), the repayment of long-term bank borrowings of RMB85.1 million (US\$12.2 million) and the repurchase of 2020 Notes of RMB1,148.1 million (US\$164.9 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 notes of RMB95.6 million.

Capital Expenditures

We had capital expenditures relating to the addition of property and equipment of RMB396.0 million, RMB435.2 million and RMB1,248.8 million (US\$179.4 million) in 2017, 2018 and 2019, respectively, representing 11.8%, 12.8% and 33.0%, 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 2020 will be within the range of RMB2.4 billion to RMB2.8 billion, which will be primarily used to build self-built data centers, purchase network equipment, servers and other equipment to expand our business. We may have 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 2020 with cash from the proceeds from our operations, overseas offerings, operations and additional bank borrowings, if available.

[Table of Contents](#)**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**

Our strong research and development capabilities support and enhance our service offerings. We believe that we have one of the most experienced research and development teams in the internet infrastructure sector in China. We 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. Over 65% of the work force on our research and development team are engineers. Many of our engineers have more than 10 years of relevant industry experience. In 2017, 2018 and 2019, our research and development expenses were RMB149.1 million, RMB92.1 million and RMB88.8 million (US\$12.8 million), respectively.

Consistent with our strong culture of innovation, we devote significant resources to the research and development of our smart routing technology, cloud computing infrastructure service technologies. Our research and development efforts have yielded 70 patents, 45 patent applications and 72 software copyright registrations, all in China and related to different aspects of internet infrastructure services. We intend to continue to devote a significant amount of time and resources to carry out our research and development efforts.

Intellectual Property

We use our proprietary smart routing technology to optimize network connectivity and overcome the inherent inadequacies in China's telecommunication and internet infrastructure. Our smart routing technology continually monitors and analyzes the performance of all available routes and identifies the most appropriate pathway in real-time. In planning for and finding the optimized routing plan, our smart routing technology takes into consideration speed (latency), performance, route stability and packet losses and dynamically responds with intelligent route adjustments in order to ensure that data is traveling along the fastest and most reliable route.

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, 2019 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.

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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, 2019:

	Payment Due by Period				
	Total	Less than 1 year	1-3 years (in thousands of RMB)	3-5 years	More than 5 years
Short-term borrowings ⁽¹⁾	234,500	234,500	—	—	—
Long-term borrowings ⁽¹⁾⁽²⁾	112,000	32,500	79,500	—	—
Notes payable ⁽³⁾	3,007,865	915,005	2,092,860	—	—
Operating lease obligations ⁽⁴⁾	1,782,797	466,670	534,196	134,512	647,419
Purchase commitments ⁽⁵⁾	933,926	826,082	105,570	365	1,909
Finance lease minimum lease payment ⁽⁶⁾	3,252,962	364,729	763,591	243,955	1,880,687
Total	9,324,050	2,839,486	3,575,717	378,832	2,530,015

Notes:

- (1) As of December 31, 2019, our short-term bank borrowings bore a weighted average interest rate of 4.56% and have original maturity terms of one year. Our unused short-term and long-term bank borrowing facilities amounted to RMB326.1 million (US\$46.8 million). We have pledged land use rights with the net book value of RMB16.0 million (US\$2.3 million), property with the net book value of RMB137.6 million (US\$19.8 million), and leasehold improvements with the net book value of RMB66.2 million (US\$9.5 million) for our bank borrowings.
- (2) Long-term bank borrowings (including the current portions) outstanding as of December 31, 2019 bear a weighted-average interest rate of 5.28% per annum, and are denominated in Renminbi. These loans were obtained from financial institutions located in the PRC.
- (3) The 2020 Notes with US\$131.2 million of the principal amount outstanding due 2020 at an interest rate of 7.000% per annum and 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, 2019, we had commitments of approximately RMB225.5 million (US\$32.4 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 RMB708.4 million (US\$101.8 million).
- (6) Related to finance leases for electronic equipment, optic fibers and property.

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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. Among other things, the sections titled “Item 3. Key Information—Risk Factors,” “Item 4. Information on the Company,” and “Item 5. Operating and Financial Review and Prospects” 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.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEESA. [Directors and Senior Management](#)

The following table sets forth information regarding our directors and executive officers as of the date of this annual report.

Directors and Executive Officers	Age	Position/Title
Sheng Chen	51	Chairman of the Board of Directors
Yoshihisa Ueno	57	Independent Director
Kenneth Chung-Hou Tai	69	Independent Director
Sean Shao	63	Independent Director
Erhfei Liu	62	Independent Director
Yao Li	56	Independent Director
Wenbin Chen	49	Director
Tao Zou	44	Director
Shiqi Wang	44	Chief Executive Officer and President
Sharon Xiao Liu	39	Chief Financial Officer
Chunfeng Cai	37	Chief Operating Officer
Wing-Dar Ker	59	Senior Vice President
Chenggang Shen	38	Senior Vice President
Liang Zhao	44	Senior Vice President
Qihang Liu	48	President of Cloud Business Unit
Feng Liu	48	Vice President

Mr. Sheng Chen is one of our co-founders and has served as the executive chairman of our board of directors since our inception. He has been our chief executive officer since our inception to October 2015. Mr. Chen has been instrumental to the development and success of our business. Mr. Chen provides vision, overall management, and strategic decision-making relating to marketing, investment planning, and corporate development. Mr. Chen has more than 20 years’ experience in the internet infrastructure industry in China and started his entrepreneur career in 1990 when he was a sophomore at Tsinghua University. In 1999, Mr. Chen founded our business and started the first carrier-neutral data center in China. Mr. Chen currently also serves as a director of Cloud Tech Services Limited. Mr. Chen received his bachelor’s degree in electrical engineering from Tsinghua University in 1991. Mr. Chen is a member of the Tsinghua Entrepreneur & Executive Club and a managing director of the Internet Society of China.

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Mr. Yoshihisa Ueno has served as our director since October 2010. Mr. Ueno is a serial entrepreneur & venture capitalist with operation & industrial expertise in the US, Europe, Japan and China and over 35 years of incubation investment experience in emerging technology startups. Mr. Ueno has been our lead investor and board member of several of our affiliated companies since 2006. Mr. Ueno has been the founding partner of Synapse Company Limited & Synapse Partners Limited since December 2002, Synapse Holdings Limited since October 2013 and SMC Synapse Partners Limited from December 2010 to September 2015. Mr. Ueno has also been a director of several start-up portfolios such as Hivelocity Inc. from March 2015 and Catalyst Group Limited (Exicon Limited) from March 2015. Mr. Ueno has also served as director of BeyondSoft Group Holding Limited (SZSE: 2649) from September 2005 to May 2010, CDS GS Japan Ltd. (a joint venture with CDC Corp. NASDAQ: CHINA) from June 2011 to April 2012, and Insource (HK) Ltd. (a JV with Insource Co., Ltd. TSE: 6200) from December 2011 to September 2014. Mr. Ueno has managed several venture funds such as the Japan-China Bridge Fund from March 2005 to February 2011, Intellectual Property Bank (IPB) Partners Fund #1 in Japan from March 2006 to March 2010 and IPB Holding LLC in the United States from March 2006 to July 2007. Mr. Ueno also served as the chief executive officer at Cycolor, Inc., in the US from September 1998 to June 2003, until Cycolor was acquired by Eastman Kodak in early 2003. Mr. Ueno worked for Fujitec from April 1985 to May 1997 in various managerial capacities in Japan, China, the United Kingdom, Spain and Hong Kong. Mr. Ueno received his bachelor's degree in business administration from Takushoku University.

Mr. Kenneth Chung-Hou Tai has served as our director since October 2012. Mr. Tai is a prominent figure in the Taiwanese technology sector with over 40 years of industry experience with leading technology and hardware companies in Taiwan and the United States. Mr. Tai co-founded Acer Computer in 1976, which has become one of the top five branded PC vendors in the world today, and held various managerial positions during his tenure. Later in his technology career, Mr. Tai also founded Investar Capital, a venture capital firm focusing on IT companies. Mr. Tai is now serving as chairman of Photonics Industry & Technology Development Association (PIDA) is a non-profit organization affiliated to the Ministry of Science and Technology (MOST), and chairman of Digitimes Incorporated, the only technology-focused newspaper in Taiwan. Currently, Mr. Tai serves on the board of directors for several public companies in Taiwan and Singapore, including Asustek Computer Inc. (TPE: 2357) and Wafer Works Corporation (TPE: 6182). Mr. Tai also serves on the board of directors for several private companies, including Chief Telecom Corporation (TPE: 6561) and Jasper Display Corporation. Mr. Tai received a master's degree in business administration from Tam Kang University and a bachelor's degree in electrical engineering from National Chiao Tung University in Taiwan.

Mr. Sean Shao has served as our director since August 2015. Mr. Sean Shao also serves as independent director and chairman of the audit committee for Luckin Coffee Inc. (NASDAQ: LK) since May 2019, Jumei International Holding Ltd. (NYSE: JMEI) since May 2014, LightInTheBox Holdings Co. Ltd. (NYSE: LITB) since June 2013, UTStarcom Holdings Corp. (NASDAQ: UTSI) since October 2012, and China Biologic Products, Inc. (NASDAQ: CBPO) since July 2008. He served as chief financial officer and a board member of Trina Solar Limited from 2006 to 2008 and from 2015 to 2017, respectively. In addition, Mr. Shao served as chief financial officer of ChinaEdu Corporation and Watchdata Technologies Ltd from 2004 to 2006. Prior to that, Mr. Shao worked at Deloitte Touche Tohmatsu CPA Ltd. for approximately ten years. Mr. Shao received his master's degree in healthcare administration from the University of California at Los Angeles in 1988 and his bachelor's degree in arts from East China Normal University in 1982. Mr. Shao is a member of the American Institute of Certified Public Accountants.

Mr. Erhfei Liu has served as our director since May 2015. Mr. Liu also serves as independent director for QingLing Motors (Group) Co., Ltd. (HKG: 1122), one of the leading automobile manufacture in China, Jiangxi Copper Corporation (HKG: 358), China's extra-large copper cathode producer, and Frontage Holdings Corporation (HKG: 1521), a CRO providing integrated, science-driven, product development services throughout the drug discovery and development process. Mr. Liu has served as CEO of Asia Investment Fund (AIF), a private equity investment fund, since 2018, and co-founder and director of Cindat, a global restate investment platform, from 2013 to 2017. Mr. Liu has remained his position as a director at Cindat, but no longer participated in the day to day operations since 2018. From 1999 to 2012, Mr. Liu served as Chairman of Merrill Lynch China and then Country Executive of Bank of America Merrill Lynch. In addition to his various investment banking responsibilities, he was also in charge of the firm's private equity business in the Greater China from 2006 to 2010. Prior to joining Merrill Lynch, Mr. Liu worked as head of Asia for Goldman Sachs, Morgan Stanley, Smith Barney and Indosuez. Mr. Liu received an MBA from Harvard Business School and his bachelor's degrees from Brandeis University and Beijing Foreign Languages University.

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Mr. Yao Li has served as our director since May 2018. Dr. Li has over 23 years' experience in finance and investment industry, and currently serves as the Chief Investment Officer of Asia for the International Finance Corporation (IFC) of the World Bank Group, Hong Kong office. Prior to joining IFC, Dr. Li served as the Vice General Manager in investment of PingAn Trust Company of PingAn Group of China from 2015 to early 2016. Prior to that, he served as the Chief Executive Officer of China-ASEAN Capital Advisory Company Limited and the Chairman of the Investment Committee of China-ASEAN Fund Management Company from mid-2011 to 2015. Prior to that, Dr. Li was a Co-head of the Investment Banking Business for Bank of China (BOC), where he was responsible for setting up the domestic securities business for BOC. Dr. Li holds a doctorate's degree in Economics from Renmin University of China.

Mr. Wenbin Chen has served as our director since September 2017. Mr. Chen currently serves as the chairman of TusCity Group and senior vice president of Tus-Holdings. Prior to that, Mr. Chen served as the chief editor of a magazine titled *the People's Rule of Law* and the deputy secretary-general of the China Behavior Law Association from 2011 to 2014. From 2008 to 2010, Mr. Chen worked as the head of capital operations and investor relations at China Longyuan Power Group Co., Ltd. (HKG: 0916) and a director at HaiNan Pearl River Holdings Co., Ltd. (000505, CN). Prior to that, Mr. Chen was a division chief at the National Audit Office of the PRC from 2001 to 2008, and taught at Beijing University of Technology from 1993 to 2001. Mr. Chen received his bachelor's degree in philosophy from Peking University and his Doctorate's degree in finance from Dongbei University of Finance and Economics.

Mr. Tao Zou has served as our director since December 2016. Mr. Zou is currently the chief executive officer and an executive director of Kingsoft Corporation Limited (HKG: 3888), a company listed on the Hong Kong Stock Exchange, and the chief executive officer and one of the directors of Seasun Holdings Limited, overseeing the operations of Seasun Holdings Limited and its subsidiaries, including the research and development of online games, and the operations of the gaming business of Kingsoft Corporation Limited and its subsidiaries, or Kingsoft Group. Mr. Zou also serves as a director of Cheetah Mobile (NYSE: CMCN) and Xunlei Limited (Nasdaq: XNET). Mr. Zou joined Kingsoft Group in 1998 and has taken various positions within the Kingsoft Group since then. Mr. Zou received a bachelor's degree from Tianjin Nankai University.

Mr. Shiqi Wang has served as our chief executive officer and President since February 2018. Mr. Wang also served as the Vice President of TUS Digital Group, a subsidiary of TUS Holdings, director of Beijing CIC Technology Co., Ltd. and director of Guangzhou Tuwei Technology Co., Ltd. Mr. Wang has nearly 20 years of experience in the telecommunications industry and has worked at various renowned international companies, including 11 years with Ericsson, focusing primarily on strategy development and execution, corporate management, and equity investments. Mr. Wang received a bachelor's degree from Tsinghua University and an MBA from Peking University-Vlerick MBA Program (BiMBA).

Ms. Sharon Xiao Liu has served as our chief financial officer since January 2018. Ms. Liu joined us in October 2010, and served as our vice president of finance in charge of the finance-related matters of our hosting and related services business prior to becoming our chief financial officer. Ms. Liu was also previously responsible for our pre- and post-IPO finance matters, investor relations, financial reporting, financial planning and analysis, and financial business plan. Prior to joining 21Vianet, Ms. Liu was a manager at KPMG China in its audit division since 2003. Ms. Liu is a Certified Public Accountant (CPA) in the state of North Dakota. Ms. Liu received her dual Bachelor' degrees in economics and law from Peking University.

Mr. Chunfeng Cai has served as our Chief Operating Officer since November 2019. Mr. Cai also served as the national general sales manager since January 2019. He has served as the general manager of our East China business and South China business since January 2016 and July 2017, respectively, to May 2018. Mr. Cai has ten years of working experience in IDC and CDN industry, as well as extensive experience in 2B business management. Prior to joining us, Mr. Cai was the vice president of ChinaCache, primarily responsible for the departments of enterprise business and company operation management center. Mr. Cai received his master's degree in mechanical and electronic engineering from Zhejiang University and his bachelor's degree in mechanical engineering from Jilin University.

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Mr. Wing-Dar Ker has served as our senior vice president since February 2020. Mr. Ker served as our president of cloud business unit from October 2013 to February 2020. Prior to that, Mr. Ker was the general manager of Microsoft's Customer Service and Support for the Asia Pacific and Greater China Region. Mr. Ker started his career with Microsoft as the finance controller for the Greater China Region in August 1993, and held various managerial positions in Microsoft since then. Prior to joining Microsoft, Mr. Ker was the manager and group head of the Business Systems Consulting group of Andersen Consulting (now known as Accenture). Mr. Ker started his career in New York City where he served at several private companies for more than five years before joining Accenture. Mr. Ker received his MBA degree from the Case Western Reserve University in Cleveland, Ohio, and his bachelor's degree of economics from the National Taiwan University.

Mr. Chenggang Shen has served as our senior vice president and general manager of our East and South China business since January 2020. Mr. Shen joined us in January 2017, primarily responsible for our Hybrid IT services and product lines, respectively. Prior to joining us, Mr. Shen served as vice president for cloud products of GDS Holdings Limited (NASDAQ: GDS) and various senior executive positions in other reputable enterprises, including Samsung Electronics, Hewlett-Packard and Electronic Data Systems Corp., for technology management, business development and operation management. Mr. Shen has professional technology background and extensive industry experience, covering areas of finance, manufacturing, energy, automobile, e-commerce, aviation, and outsourcing. Mr. Shen received his bachelor's degree in software engineering from Sichuan University.

Mr. Liang Zhao has served as our senior vice president and general manager of our North China business since December 2019. Mr. Zhao has over 20 years of working experience and held various positions in China Unicom (SSE: 600050; SEHK: 762), including the vice general manager of China Unicom marketing division, China Unicom Online, and China Unicom Artificial Network Technology, the executive director of China Unicom Wo Music, and the vice chairman of the board of a joint venture established by China Unicom and Chery Automobile, respectively. Mr. Zhao has extensive experience in areas of products, operations, marketing and sales, 5G and internet-of-vehicle. Mr. Zhao received his EMBA degree from Stockholm University, master's degrees in sociology from Renmin University of China and in marketing communications from the University of Hong Kong, School of Professional and Continuing Education, and bachelor's degree in communication engineering from Southeast University.

Mr. Qihang Liu has served as our president of cloud business unit since March 2020. Mr. Liu served as our senior vice president from December 2019 to March 2020. Mr. Liu has over 25 years of technology and management experience in internet and technology industries. From 1994 to 2018, he held various positions in several reputable technology companies, including SONY, Microsoft and Hewlett-Packard, primarily responsible for research and development in networking and big data services, strategic planning and senior management. Mr. Liu has extensive experience in cloud computing, big data and artificial intelligence industries. Mr. Liu received his bachelor's degree in computer science from Beijing University of Technology.

Mr. Feng Liu has served as our vice president of infrastructure operation since January 2020. Mr. Liu served as our general manager of marketing and infrastructure operation from January 2019 to December 2019. From August 2016 to July 2017, Mr. Liu served as our vice president, primarily responsible for human resources, application development, information technology and key accounts departments. From July 2017 to the end of 2018, Mr. Liu served as the general manager of our North China business. Mr. Liu has extensive experience in telecom operator market management, research & development management, project delivery and international marketing. Prior to joining us, Mr. Liu was the vice president of AsiaInfo Group, primarily responsible for sales, delivery, research and development, marketing as well as the overseas business. Mr. Liu received his EMBA degree from the Economics and Management School of Tsinghua University and his bachelor's degree in engineering mechanics from Tsinghua University.

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.

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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.

B. Compensation

In 2019, the aggregate cash compensation we paid to our executive officers was approximately RMB20.9 million (US\$3.0 million), which total amount included RMB0.73 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 2019. 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 RMB36.8 million (US\$5.3 million) in 2019. 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. The amended 2010 Plan and 2014 Plan permit the grant of options to purchase our ordinary shares, share appreciation rights, restricted shares, RSUs, dividend equivalent rights and other instruments as deemed appropriate by the administrator under the plans. The maximum aggregate number of ordinary shares that may be issued pursuant to all awards under the amended 2010 Plan is 39,272,595 Class A ordinary shares. Under the amended 2014 Plan, we are authorized to issue to our employees, directors and consultants (i) 21,888,624 Class A ordinary shares, and (ii) an automatic increase by a number that is equal to 15% of the number of new Class A and Class B Ordinary Shares (on an as converted basis) issued by the Company from time to time. Our board is also authorized, but not obligated, to increase the maximum number under the 2014 Plan by the number of, or a portion of, the Class A ordinary shares repurchased by us since January 1, 2014. As of February 29, 2020, options to purchase 931,254 ordinary shares and 3,271,135 RSUs have been granted under our amended 2010 Plan and amended 2014 Plan to our employees, directors and consultants without giving effect to the options that were exercised or terminated and RSUs that were vested.

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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	—
Wenbin Chen	—	—	—	—	—
Tao Zou	—	—	—	—	—
Shiqi Wang	—	*	—	April 16, 2018	—
	—	*	—	January 2, 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	—
Chunfeng Cai	—	*	—	January 2, 2020	—
	—	*	—	March 6, 2016	—
	—	*	—	May 21, 2017	—
	—	*	—	May 16, 2018	—
	—	*	—	January 2, 2020	—
Wing-Dar Ker	—	*	—	November 22, 2014	—
	—	*	—	May 16, 2018	—
Chenggang Shen	—	*	—	March 5, 2017	—
Liang Zhao	—	—	—	—	—
Qihang Liu	—	—	—	—	—
Feng Liu	—	*	—	August 14, 2016	—
	—	*	—	May 16, 2018	—
Other individuals as a group	28,953,524	6,459,720	0.15 to 0.85	—	—

* Shares underlying vested options are less than 1% of our total outstanding shares.

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Our 2010 Plan and 2014 Plan have similar terms, the following paragraphs describe the principal terms of our 2010 Plan and 2014 Plan.

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 decide to follow home country practice.

C. [Board Practices](#)

Board of Directors

Our board of directors currently consists of eight directors. A director is not required to hold any shares in the company by way of qualification. Under our currently effective memorandum and articles of association, a director may vote in respect of any contract or proposed contract or arrangement and notwithstanding that he may be interested therein and if he does so his vote shall be counted and he may be counted in the quorum at the meeting of the directors at which such contract or proposed contract or arrangement is considered. Any of our directors who is in any way, whether directly or indirectly, interested in a contract or proposed contract with our company is required to declare the nature of his interest at a meeting of the directors. Our directors may exercise all the powers of the company to borrow money, mortgage its undertaking, property and uncalled capital, and issue debentures or other securities whenever money is borrowed or as security for any obligation of the company or of any third party.

[Table of Contents](#)**Committees of the Board of Directors**

We have three committees under the board of directors: the audit committee, the compensation committee and the nominating and corporate governance committee. We have adopted a charter for each of the three committees. Each committee's members and functions are described below.

Audit Committee. Our audit committee consists of Sean Shao, Kenneth Chung-Hou Tai and Yoshihisa Ueno, each of whom satisfies the "independence" requirements of Rule 5605 of Nasdaq Stock Market Rules and Rule 10A-3 under the Securities Exchange Act of 1934. Sean Shao is the chair of our audit committee. The purpose of the audit committee is to assist our board of directors with its oversight responsibilities regarding: (i) the integrity of our financial statements, (ii) our compliance with legal and regulatory requirements, (iii) the independent auditor's qualifications and independence and (iv) the performance of our internal audit function and independent auditor. The audit committee will be responsible for, among other things:

- appointing the independent auditors and pre-approving all auditing and non-auditing services permitted to be performed by the independent auditors;
- reviewing with the independent auditors any audit problems or difficulties and management's response;
- discussing the annual audited financial statements with management and the independent auditors;
- reviewing the adequacy and effectiveness of our accounting and internal control policies and procedures and any steps taken to monitor and control major financial risk exposures;
- reviewing and approving all proposed related party transactions;
- meeting separately and periodically with management and the independent auditors; and
- monitoring compliance with our code of business conduct and ethics, including reviewing the adequacy and effectiveness of our procedures to ensure proper compliance.

Compensation Committee. Our compensation committee consists of Yoshihisa Ueno, Kenneth Chung-Hou Tai, Erhfei Liu and Yao Li, each of whom satisfies the "independence" requirements of Rule 5605 of Nasdaq Stock Market Rules. Yoshihisa Ueno is the chair of our compensation committee. The compensation committee assists the board in reviewing and approving the compensation structure, including all forms of compensation, relating to our directors and executive officers. Our chief executive officer may not be present at any committee meeting during which his compensation is deliberated. The compensation committee is responsible for, among other things:

- reviewing and approving, or recommending to the board for its approval, the compensation for our chief executive officer and other executive officers;
- reviewing and recommending to the board for determination with respect to the compensation of our non-employee directors; and
- reviewing periodically and approving any incentive compensation or equity plans, programs or similar arrangements.

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Nominating and Corporate Governance Committee. Our nominating and corporate governance committee consists of Kenneth Chung-Hou Tai and Yoshihisa Ueno, each of whom satisfies the “independence” requirements of Rule 5605 of Nasdaq Stock Market Rules. Kenneth Chung-Hou Tai is the chair of our nominating and corporate governance committee. The nominating and corporate governance committee assists the board of directors in selecting individuals qualified to become our directors and in determining the composition of the board and its committees. The nominating and corporate governance committee is responsible for, among other things:

- selecting and recommending to the board nominees for election by the shareholders or appointment by the board;
- reviewing annually with the board the current composition of the board with regards to characteristics such as independence, knowledge, skills, experience and diversity;
- making recommendations on the frequency and structure of board meetings and monitoring the functioning of the committees of the board; and
- advising the board periodically with regards to significant developments in the law and practice of corporate governance as well as our compliance with applicable laws and regulations, and making recommendations to the board on all matters of corporate governance and on any remedial action to be taken.

Duties of Directors

Under Cayman Islands law, our directors have a fiduciary duty to act honestly and a duty to act in what they consider in good faith with a view to our best interests. Our directors must also exercise their powers only for a proper purpose. Our directors also owe to our company a duty to act with care and diligence that a reasonably prudent person would exercise in comparable circumstances and a duty to exercise the skill they actually possess. It was previously considered that a director need not exhibit in the performance of his duties a greater degree of skill than may reasonably be expected from a person of his knowledge and experience. However, English and Commonwealth courts have moved towards an objective standard with regard to the required skill and care and these authorities are likely to be followed in the Cayman Islands. In fulfilling their duty of care to us, our directors must ensure compliance with our memorandum and articles of association as amended and restated from time to time. We have the right to seek damages if a duty owed by our directors is breached.

Terms of Directors and Officers

Our officers are appointed by and serve at the discretion of our board of directors. Our directors are not subject to a term of office and hold office until such time as they are removed from office by ordinary resolution or the unanimous written resolution of all shareholders. We do not have a mandatory retirement age for directors. The office of a director shall be vacated if, among other things, the director (i) becomes bankrupt or makes any arrangement or composition with his or her creditors; (ii) dies or is found by our company to be or becomes of unsound mind; (iii) resign his office by notice in writing to our company; or (iv) without special leave of absence from our board, is absent from three consecutive board meetings and the board resolves that his office be vacated.

D. Employees

We had 2,267, 2,220 and 2,295 employees as of December 31, 2017, 2018 and 2019, respectively. The following table sets forth the number of our employees by function as of December 31, 2019:

Functional Area	Number of Employees	% of Total
Operations	1,072	47%
Sales, marketing and customer support	350	15%
Research and development	193	8%
General and administrative	680	30%
Total	2,295	100%

Of our total employees as of December 31, 2019, 1,299 were located in Beijing, and 996 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.

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Our full time employees in the PRC participate in a government mandated defined contribution plan pursuant to which certain pension benefits, medical care, unemployment insurance, employee housing fund and other welfare benefits are provided to employees. Chinese labor regulations require that our PRC subsidiaries make contributions to the government for these benefits based on a fixed percentage of the employees' salaries.

E. Share Ownership

Please refer to "Item 7. Major Shareholders and Related Party Transactions—Major Shareholders."

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONSA. Major Shareholders

The following table sets forth information with respect to the beneficial ownership of our ordinary shares, as of March 6, 2020, by:

- each of our directors and executive officers; and
- each person known to us to own beneficially more than 5.0% of our ordinary shares.

The calculations in the table below assume there are 679,963,488 ordinary shares outstanding as of March 6, 2020, comprising of (i) 505,253,850 Class A ordinary shares, excluding treasury shares; (ii) 174,649,638 Class B ordinary shares; and 60,000 Class C ordinary shares.

Percentage ownership and beneficial ownership is determined in accordance with the rules and regulations of the SEC. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, we have included shares that the person has the right to acquire within 60 days of March 6, 2020, including through the exercise of any option, warrant or other right or the conversion of any other security. These shares, however, are not included in the computation of the percentage ownership of any other person.

	Shares Beneficially Owned		
	Number	%	% of Voting Power ⁽¹⁾
Directors and Executive Officers:			
Sheng Chen ⁽²⁾	49,560,817	7.3	15.2
Yoshihisa Ueno ⁽³⁾	3,380,166	*	1.0
Kenneth Chung-Hou Tai	*	*	*
Sean Shao	*	*	*
Erhfei Liu	*	*	*
Yao Li	*	*	*
Wenbin Chen	—	—	—
Tao Zou	—	—	—
Shiqi Wang	*	*	*
Sharon Xiao Liu	*	*	*
Chunfeng Cai	*	*	*
Wing-Dar Ker	*	*	*
Chenggang Shen	*	*	*
Liang Zhao	—	—	—
Qihang Liu	—	—	—
Feng Liu	*	*	*
All Directors and Officers as a Group	58,245,745	8.5	16.4
Principal Shareholders:			
Tuspark Innovation Venture Ltd. ⁽⁴⁾	143,050,264	21.0	50.7
King Venture Holdings Limited ⁽⁵⁾	57,337,393	8.4	9.8
Fast Horse Technology Limited ⁽²⁾⁽⁶⁾	24,469,049	3.6	8.9
Sunrise Corporate Holding Ltd. ⁽²⁾⁽⁷⁾	18,887,875	2.8	5.7
Xiaomi Ventures Limited ⁽⁸⁾	16,666,667	2.5	4.9

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Notes:

* Less than 1%.

- (1) Percentage of total voting power represents voting power with respect to all of our Class A, Class B and Class C ordinary shares, as a single class. Each holder of our Class B ordinary shares is entitled to ten votes per Class B ordinary share and each holder of 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 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 we shall only proceed with the following matters with 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 January 15, 2015, among the Company, King Venture Holdings Limited, Xiaomi Ventures Limited and certain other parties named therein, and the Share Subscription Agreement, dated May 23, 2016, between Company and Tuspark Innovation Venture Limited; (ii) entry into 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. Our Class A, Class B and Class C 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. Our Class B and Class C ordinary shares are convertible at any time by the holder into Class A ordinary shares on a 1:1 basis.
- (2) Consists of (i) 19,670,117 Class B ordinary shares and 799,822 ADSs (representing 4,798,932 Class A ordinary shares) held by Fast Horse Technology Limited, a British Virgin Islands company solely owned by Mr. Chen; (ii) 12,187,875 Class B ordinary shares and 6,700,000 Class A ordinary shares held by Sunrise Corporate Holding Ltd., a British Virgin Islands company solely owned by Mr. Chen; (iii) 60,000 Class C ordinary shares, 769,486 Class B ordinary shares and 4 Class A ordinary shares held by Personal Group Limited, a British Virgin Islands company solely owned by Mr. Chen; (iv) 3,894,737 Class A ordinary shares held by Beacon Capital Group Inc. a British Virgin Islands company solely owned by Mr. Chen; and (v) 1,479,666 Class A ordinary shares upon vesting of Mr. Chen's restricted share units within 60 days of March 6, 2020. The business address for Mr. Chen is Guanjie Building, Southeast 1st Floor, 10# Jiuxianqiao East Road, Chaoyang District, Beijing 100016, China.
- (3) Consists of (i) 2,194,200 Class B ordinary shares held by Synapse Holdings Limited, and (ii) 1,185,966 Class A ordinary shares upon vesting of Mr. Ueno's restricted share units within 60 days of March 6, 2020. Mr. Ueno is a director of our company appointed by Synapse Holdings Limited. The business address for Mr. Ueno is 37/F, Tower 1, Metroplaza, 223 Hing Fong Road, Kwai Fong, New Territories, Hong Kong.
- (4) Consists of 31,996,874 Class A ordinary shares and 111,053,390 Class B ordinary shares. The business address for Tuspark Innovation Venture Ltd. is 16/F, Block A, Innovation Park, Tsinghua Science Park, Haidian District, Beijing, the People's Republic of China.
- (5) Consists of 39,087,125 Class A ordinary shares and 18,250,268 Class B ordinary shares. The business address for King Venture Holdings Limited is Kingsoft Tower No. 33, Xiaoying West Road, Haidian District, Beijing 100085, China.
- (6) Consists of 19,670,117 Class B ordinary shares and 799,822 ADSs (representing 4,798,932 Class A ordinary shares). Fast Horse Technology Limited is 100% owned by Sheng Chen. The registered address for Fast Horse Technology Limited is P.O. Box 957, Offshore Incorporations Centre, Road Town, Tortola, British Virgin Islands.
- (7) Consists of 6,700,000 Class A ordinary shares and 12,187,875 Class B ordinary shares. Sunrise Corporate Holding Ltd. is 100% owned by Sheng Chen. The registered address for Sunrise Corporate Holding Ltd. is Kingston Chambers, PO Box 173, Road Town, Tortola, British Virgin Islands.
- (8) Consist of 6,142,410 Class A ordinary shares and 10,524,257 Class B ordinary shares. The business address for Xiaomi Ventures Limited is No. 68 Qinghe Middle Street, Wu Cai Cheng Office Building, 12F-056, Haidian District, Beijing 100085, China.

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Our ordinary shares are divided into Class A ordinary shares, Class B ordinary shares and Class C ordinary shares. Holders of Class A ordinary shares are entitled to one vote per share, while holders of Class B ordinary shares are entitled to ten votes per share and holders of Class C ordinary shares are entitled to one vote per share, except that we shall only proceed with the following matters with 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 January 15, 2015, among the Company, King Venture Holdings Limited, Xiaomi Ventures Limited and certain other parties named therein, and the Share Subscription Agreement, dated May 23, 2016, between Company and Tuspark Innovation Venture Limited; (ii) entry into 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. We issued Class A ordinary shares represented by our ADSs in our initial public offering in April 2011 and issued Class C ordinary shares in October 2019 to further enhance our ability to execute business strategies over the long term under the leadership of our board and senior management. Holders of our Class B ordinary shares or Class C ordinary shares may choose to convert their Class B ordinary shares or Class C ordinary shares into the same number of Class A ordinary shares at any time. We are not aware of any arrangement that may, at a subsequent date, result in a change of control of our company. See "Item 3. Key Information—D. Risk Factors—Risks Related to Our ADSs—Our triple-class voting structure will limit your ability to influence corporate matters and could discourage others from pursuing any change of control transactions that holders of our Class A ordinary shares and ADSs may view as beneficial."

To our knowledge, as of March 6, 2020, a total of 448,901,050 Class A ordinary shares and 16 Class B ordinary shares are held by eleven record holders in the United States, including Citibank N.A., the depository of our ADS program. The number of beneficial owners of our ADSs in the United States is likely to be much larger than the number of record holders of our ordinary shares in the United States.

B. [Related Party Transactions](#)

Transactions with Shareholders and Affiliates

On August 15, 2018, 21 Vianet Beijing entered into a lease agreement with Beijing Tuspark, a company controlled by Tus-Holdings, to lease certain floors of a building owned by Beijing Tuspark for a term of 20 years expiring on September 27, 2038, which will extend for another 20 years upon signing of a renewal agreement prior to 6 months before the expiration of the term. For the year ended December 31, 2019, we paid RMB68.8 million (US\$9.9 million) rental to Beijing Tuspark. We also had non-current receivables due from, current payables due to, and non-current payables due to Beijing Tuspark, in the amount of RMB11.9 million (US\$1.7 million), RMB24.9 million (US\$3.6 million), and RMB698.5 million (US\$100.3 million), respectively.

We currently lease certain equipment from Ziguang Financial Leasing Co., Ltd., a company controlled by Tus-Holdings, through certain finance lease arrangements. For the year ended December 31, 2019, we paid RMB6.2 million (US\$0.9 million) lease deposit and RMB17.2 million (US\$2.5 million) lease payment to Ziguang Financial Leasing Co., Ltd. We also had non-current receivables due from, current payables due to, and non-current payables due to Ziguang Financial Leasing Co., Ltd., in the amount of RMB8.2 million (US\$1.2 million), RMB27.2 million (US\$3.9 million), and RMB47.4 million (US\$6.8 million), respectively.

For the year ended December 31, 2019, we provided hosting and related services in the amount of RMB7.4 million (US\$1.1 million) to Qidi Bus (Beijing) Technology Co., Ltd., a company controlled by Tus-Holdings. We also had receivables due from Qidi Bus (Beijing) Technology Co., Ltd. in the amount of RMB1.2 million (US\$0.2 million) for the hosting and related services provided by us.

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In October 2019, we entered into an agreement with Personal Group Limited, a British Virgin Islands company wholly owned by Mr. Sheng Chen, our executive chairman, pursuant to which we issued 60,000 Class C ordinary shares to Personal Group Limited at a price of US\$1.35 per share.

For the year ended December 31, 2019, we provided hosting and related services to companies that are under common control with Xiaomi in the amount of RMB437.7 million (US\$62.9 million). We also had receivables due from companies that are under common control with Xiaomi in the amount of RMB39.8 million (US\$5.7 million).

For the year ended December 31, 2019, we provided hosting and related services to companies that are under common control with Kingsoft in the amount of RMB3.6 million (US\$0.5 million). We purchased services from companies that are under common control with Kingsoft in the amount of RMB3.5 million (US\$0.5 million). We also had payables due to a company that is under common control with Kingsoft in the amount of RMB1.1 million (US\$0.2 million) for services purchased by us.

Other Transactions with Related Parties

For the year ended December 31, 2019, we provided hosting and related services to the WiFire Entities in the amount of RMB1.9 million (US\$0.3 million). We purchased internet related services from the WiFire Entities in the amount of RMB38.9 million (US\$5.6 million). We had interest income from one of the WiFire Entity in the amount of RMB0.7 million (US\$0.1 million) in connection with a loan provided by us to such WiFire Entity in 2017. We also had payables due to WiFire Entities in the amount of RMB6.3 million (US\$0.9 million).

Other related party transactions, including services provided by/to our equity method investees and other investees measured using measurement alternative in the ordinary course of business were insignificant for the year ended December 31, 2019.

In February 2020, we entered into a convertible note purchase agreement with a private equity fund affiliated with one of our independent directors, pursuant to which such private equity fund acquired convertible notes in an aggregate principal amount of US\$50,000,000. 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 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.

Contractual Arrangements with Our Variable Interest Entities and Their Shareholders

See "Item 4.C. Information on the Company—Organizational Structure—Contractual Arrangements with Our Variable Interest Entities and Their Shareholders."

Our PRC subsidiaries and consolidated affiliated entities have engaged, during the ordinary course of business, in a number of customary transactions with each other. All of these inter-company balances have been eliminated in consolidation.

Employment Agreement

Please refer to "Item 6.A. Directors, Senior Management and Employees—Directors and Senior Management—Employment Agreements."

C. Interests of Experts and Counsel

Not applicable.

[Table of Contents](#)**ITEM 8. FINANCIAL INFORMATION****A. Consolidated Statements and Other Financial Information**

We have appended consolidated financial statements filed as part of this annual report.

Legal Proceedings

From time to time, we are subject to legal proceedings, investigations and claims incidental to the conduct of our business. For example, in March 2019, we received a court notification regarding a lawsuit launched by one of our third-party suppliers against us, alleging that we had not fully fulfilled our contractual obligations under the network infrastructure cooperation agreement entered into by and between 21Vianet Beijing and the supplier in 2013, and this legal proceeding remains in the preliminary stage. We believe this legal proceeding is without merit and intend to defend the action vigorously. For risks and uncertainties relating to the pending case against us, please see “Item 3. Key Information—D. Risk Factors—Risks Related to Our Business—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, 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: 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. The complaints in both actions allege that certain of the Company’s financial statements and other public disclosures contained misstatements or omissions and assert 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 the Company and certain of its personnel and seeking to represent a class of persons who allegedly suffered damages as a result of their trading activities related to the Company’s ADSs from August 20, 2013 to August 16, 2016. After the company’s 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 a) preliminarily approve a settlement agreement that the parties reached to settle the case for US\$9,000,000, b) preliminarily certify the proposed settlement class, c) approve the parties’ proposed notice to the settlement class, and d) set a hearing date at which the Court will consider 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, 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.

[Table of Contents](#)**Dividend Policy**

We do not plan to pay any dividends on our ordinary shares in the foreseeable future. We currently intend to retain most, if not all, of our available funds and any future earnings to operate and expand our business.

Our board of directors has complete discretion whether to distribute dividends, subject to certain restrictions under Cayman Islands law and our memorandum and articles of association. In addition, our shareholders may by ordinary resolution declare a dividend, but no dividend may exceed the amount recommended by our board of directors. Under Cayman Islands law, a Cayman Islands company may pay a dividend out of either profit or share premium account, provided that in no circumstances may a dividend be paid if this would result in the company being unable to pay its debts as they fall due in the ordinary course of business. Even if our board of directors decides to pay dividends, the form, frequency and amount will depend upon our future operations and earnings, capital requirements and surplus, general financial condition, contractual restrictions and other factors that the board of directors may deem relevant.

Holders of our ADSs will be entitled to receive dividends, if any, subject to the terms of the deposit agreement, to the same extent as the holders of our ordinary shares. Cash dividends will be paid to the depositary in U.S. dollars, which will distribute them to the holders of ADSs according to the terms of the deposit agreement. Other distributions, if any, will be paid by the depositary to the holders of ADSs by any means it deems legal, fair and practical.

We are a holding company incorporated in the Cayman Islands. We rely on dividends from our operating subsidiary to fund cash and financing requirements. Our operating subsidiary is required to comply with the applicable PRC regulations when it pays dividends to us. See “Item 3.D. Key Information—Risk Factors—Risks Related to Doing Business in China—We may rely on dividends paid by our operating subsidiaries to fund cash and financing requirements, and limitations on the ability of our operating subsidiaries to make payments to us could have a material adverse effect on our ability to conduct our business and fund our operations.”

B. Significant Changes

Except as disclosed elsewhere in this annual report, we have not experienced any significant changes since the date of our audited consolidated financial statements included in this annual report.

ITEM 9. THE OFFER AND LISTING

A. Offering and Listing Details

Our ADSs, each representing six of our Class A ordinary shares, have been listed on the Nasdaq Global Select Market since April 21, 2011 under the symbol “VNET.”

B. Plan of Distribution

Not applicable.

C. Markets

Our ADSs, each representing six of our ordinary shares, have been traded on the Nasdaq Global Select Market since April 21, 2011 under the symbol “VNET.”

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

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- F. Expenses of the Issue
- Not applicable.

ITEM 10. ADDITIONAL INFORMATIONA. Share capital

Not applicable.

B. Memorandum and Articles of Association

We are a Cayman Islands company and our corporate affairs are governed by our memorandum and articles of association and by the Companies Law (as amended) and common law of the Cayman Islands.

As of the date hereof, our authorized share capital is US\$15,000 divided into (i) 1,199,940,000 Class A Ordinary Shares of a nominal or par value of US\$0.00001 each, (ii) 300,000,000 Class B Ordinary Shares of a nominal or par value of US\$0.00001 each, and (iii) 60,000 Class C Ordinary Shares of a nominal or par value of US\$0.00001 each. As of February 29, 2020, there are 505,253,850 Class A ordinary shares (excluding treasury shares), 174,649,638 Class B ordinary shares and 60,000 Class C ordinary shares issued and outstanding.

The following are summaries of material provisions of our currently effective memorandum and articles of association and the Companies Law insofar as they relate to the material terms of our shares.

Registered Office and Objects

The Registered Office of the Company is situated at the offices of Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands, or at such other location within the Cayman Islands as our directors may from time to time determine. The objects for which the Company is established are unrestricted and the Company shall have full power and authority to carry out any object not prohibited by the Companies Law or any other law of the Cayman Islands.

Board of Directors

See “Item 6. Board Practices—C. Board of Directors.”

Ordinary shares

General. Our ordinary shares are divided into Class A ordinary shares, Class B ordinary shares and Class C ordinary shares. Holders of Class A ordinary shares, Class B ordinary shares and Class C ordinary shares have the same rights except for voting and conversion rights (as described in more details below). Our ordinary shares are issued in registered form, and are issued when registered in our register of members (shareholders). Our shareholders who are non-residents of the Cayman Islands may freely hold and vote their shares.

Dividends. The holders of our ordinary shares are entitled to such dividends as may be declared by our board of directors, subject to the Companies Law and our articles of association. In addition, our shareholders may by ordinary resolution declare a dividend, but no dividend may exceed the amount recommended by our directors. Under Cayman Islands law, a Cayman Islands company may pay a dividend on its shares out of either profit or share premium account, provided that in no circumstances may a dividend be paid if this would result in the company being unable to pay its debts as they fall due in the ordinary course of business.

Conversion. Each Class B ordinary share or each Class C ordinary share is convertible into one Class A ordinary share at any time by the holder thereof. Class A ordinary shares are not convertible into Class B ordinary shares or Class C ordinary shares under any circumstances.

Upon any transfer of Class B ordinary shares or Class C ordinary shares by a holder thereof to any person or entity which is not an affiliate of such holder, such Class B ordinary shares or Class C ordinary shares will be automatically and immediately converted into an equal number of Class A ordinary shares.

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Voting Rights. In respect of matters requiring shareholders' votes, each Class A ordinary share is entitled to one vote, each Class B ordinary share is entitled to ten votes, and each Class C ordinary shares is entitled to one vote per share, except that we shall only proceed with the following matters with 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 January 15, 2015, among the Company, King Venture Holdings Limited, Xiaomi Ventures Limited and certain other parties named therein, and the Share Subscription Agreement, dated May 23, 2016, between Company and Tuspark Innovation Venture Limited; (ii) entry into 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. Voting at any shareholders' meeting is by show of hands unless a poll is demanded. A poll may be demanded by the chairman or by any three shareholders entitled to vote at the meeting, or one or more shareholders holding at least 10% of the paid-up voting share capital or 10% of the total voting rights entitled to vote at the meeting, present in person or by proxy.

A quorum required for a meeting of shareholders consists of at least one shareholder present in person or by proxy or, if a corporation or other non-natural person, by its duly authorized representative, who holds no less than one-third of the voting power of the shares in issue carrying a right to vote at a meeting of shareholders. Shareholders' meetings may be held annually and may be convened by our board of directors on its own initiative or upon a requisition to the directors made by shareholders holding in aggregate at least one-third of the voting power of the shares in issue carrying a right to vote at a meeting of shareholders. Advance notice of at least 14 days is required for a meeting of shareholders.

An ordinary resolution to be passed by the shareholders requires a simple majority of votes attaching to the ordinary shares cast in a general meeting while a special resolution requires no less than two-thirds of the votes attaching to the ordinary shares cast in a general meeting. Both ordinary resolutions and special resolutions may also be passed by a unanimous written resolution signed by all the shareholders of our company, as permitted by the Companies Law and our memorandum and articles of association. A special resolution is required for matters including, but not limited to, amending the memorandum and articles of association of the company, reducing share capital and winding up. Our shareholders may affect certain changes by ordinary resolution, including increasing the amount of our authorized share capital, consolidating and dividing all or any of our share capital into shares of larger amount than our existing shares, and the cancellation of any authorized but unissued shares.

Transfer of Shares. Subject to the restrictions of our memorandum and articles of association, any of our shareholders may transfer all or any of his or her ordinary shares by an instrument of transfer in any usual or common form or any other form approved by our board of directors.

Our board of directors may, in its sole discretion, decline to register any transfer of any ordinary share which is not fully paid up or on which we have a lien. Our directors may also decline to register any transfer of any share unless (a) the instrument of transfer is lodged with us, accompanied by the certificate for the shares to which it relates and such other evidence as our board of directors may reasonably require to show the right of the transferor to make the transfer; (b) the instrument of transfer is in respect of only one class of shares; (c) the instrument of transfer is properly stamped, if required; (d) in the case of a transfer to joint holders, the number of joint holders to whom the share is to be transferred does not exceed four; (e) the shares transferred are free of any lien in favor of us; and (f) a nominal processing fee determined to be payable by our directors (not to exceed the maximum sum as Nasdaq may determine to be payable) has been paid to us in respect thereof.

If our directors refuse to register a transfer, they must, within two months after the date on which the instrument of transfer was lodged, send to each of the transferor and the transferee notice of such refusal. The registration of transfers may, on 14 days' notice being given by advertisement in one or more newspapers or by electronic means, be suspended and the register closed at such times and for such periods as our board of directors may from time to time determine; provided, however, that the registration of transfers may not be suspended and the register may not be closed for more than 30 days in any year.

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Liquidation. On a return of capital on winding up, if the assets available for distribution among our shareholders are more than sufficient to repay the whole of the share capital at the commencement of the winding up, the surplus will be distributed among shareholders in proportion to the par value of the shares held by them at the commencement of the winding up, subject to a deduction from those shares in respect of which there are monies due, of all monies payable to our company for unpaid calls or otherwise. If our assets available for distribution are insufficient to repay the whole of the share capital, the assets will be distributed so that, as nearly as may be, the losses are borne by our shareholders in proportion to the par value of the shares held by them.

Calls on Shares and Forfeiture of Shares. Our board of directors may from time to time make calls upon shareholders for any amounts unpaid on their shares in a notice served to such shareholders at least 14 days prior to the specified time of payment. The shares that have been called upon and remain unpaid on the specified time are subject to forfeiture.

Redemption, Repurchase and Surrender of Shares. We may issue shares on terms that such shares are subject to redemption, at our option or at the option of the holders thereof, on such terms and in such manner as may be determined, before the issue of such shares, by our board of directors or by a special resolution of our shareholders. Our company may also repurchase any of our shares provided that the manner of such purchase has been approved by an ordinary resolution of our shareholders, or the manner of purchase is in accordance with the procedures set out in our memorandum and articles of association. Under the Companies Law, the redemption or repurchase of any share may be paid out of our company's profits or out of the proceeds of a fresh issue of shares made for the purpose of such redemption or repurchase, or out of capital (including share premium account and capital redemption reserve) if our company can, immediately following such payment, pay its debts as they fall due in the ordinary course of business. In addition, under the Companies Law no such share may be redeemed or repurchased (a) unless it is fully paid up, (b) if such redemption or repurchase would result in there being no shares outstanding, or (c) if the company has commenced liquidation. In addition, our company may accept the surrender of any fully paid share for no consideration.

Variations of Rights of Shares. Whenever the capital of our company is divided into different classes, the rights attached to any such class of shares may, subject to any right or restriction attached to any class, be varied either with the written consent of the holders of a majority of the issued shares of that class or with the sanction of a special resolution passed at a separate meeting of the holders of the shares of that class. The rights conferred upon the holders of the shares of any class will not, unless otherwise expressly provided by the terms of issue of the shares of that class, be deemed to be varied by the creation or issue of further shares ranking in priority to or pari passu with such previously existing shares.

Inspection of Books and Records. Holders of our ordinary shares will have no right to inspect our corporate records except as conferred by Cayman Islands law or authorized by the board or by ordinary resolution of the shareholders.

C. **Material Contracts**

On October 14, 2019, we entered into a Share Subscription Agreement with Personal Group Limited, a British Virgin Islands company wholly owned by Mr. Sheng Chen. Pursuant to the Share Subscription Agreement, we issued 60,000 Class C ordinary shares to Personal Group Limited, with the rights, restrictions, preferences and privileges set forth therein, at a price of US\$1.35 per share. The holders of Class C ordinary shares are entitled to one vote per share, except that we shall only proceed with the following matters with 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:

- 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 January 15, 2015, among the Company, King Venture Holdings Limited, Xiaomi Ventures Limited and certain other parties named therein, and the Share Subscription Agreement, dated May 23, 2016, between Company and Tuspark Innovation Venture Limited;
- entry into 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

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- 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 Class C ordinary share is convertible into one Class A ordinary share at any time by the holder thereof, and Class C ordinary shares are not convertible into Class B ordinary shares or preferred shares under any circumstances. Upon any transfer of Class C ordinary shares by a holder thereof to any person or entity which is not an affiliate of such holder, such Class C ordinary shares shall be automatically and immediately converted into the equal number of Class A ordinary shares.

On July 24, 2019, we reached the following agreements with Warburg Pincus to restructure our partnership: (i) an amended and restated investment agreement, by and among 21 Vianet Group, Inc., 21 Vianet DRP Investment Holdings Limited and Marble Stone Holdings Limited; and (ii) a restructuring agreement, by and among 21 Vianet Group, Inc., 21 Vianet DRP Investment Holdings Limited and Marble Stone Holdings Limited. On January 15, 2020, we further entered in to an amendment to restructuring agreement, by and among 21 Vianet Group, Inc., 21 Vianet DRP Investment Holdings Limited and Marble Stone Holdings Limited, in connection with the restructuring of our joint ventures with Warburg Pincus. Pursuant to the amended and restated investment agreement, the restructuring agreement, and the amendment to restructuring agreement, (i) one of the joint ventures 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, after which we obtained 100% ownership of a project under development in the Shanghai Waigaoqiao Free Trade Zone, as well as a certain amount of cash, and Princeton Digital Group (PDG) obtained 100% ownership of four projects under development in Shanghai, Nanjing, Nantong and Wuxi; and (ii) we and Warburg Pincus will adjust the existing holding structure for operating the current projects, and jointly establish an additional holding vehicle for sourcing and developing new projects in China.

In February 2020, we entered into convertible note purchase agreements with a group of investors led by Goldman Sachs Asia Strategic Pte. Ltd. in an aggregate principal amount of US\$200 million through a private placement to the investors. 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 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.

Other than in the ordinary course of business and other than those described above, in "Item 4. Information on the Company" and "Item 7. Major Shareholders and Related Party Transactions—B. Related Party Transactions" or elsewhere in this annual report, we have not entered into any material contract during the two years immediately preceding the date of this annual report.

D. [Exchange Controls](#)

See "Item 4. Information on the Company—B. Business Overview—Regulations—Regulations on Foreign Currency Exchange."

E. [Taxation](#)

The following summary of the material Cayman Islands, PRC and United States federal income tax consequences of an investment in our ADSs or Class A ordinary shares is based upon laws and relevant interpretations thereof in effect as of the date of this annual report, all of which are subject to change. This summary does not deal with all possible tax consequences relating to an investment in our ADSs or Class A ordinary shares, such as the tax consequences under state, local and other tax laws.

The Cayman Islands

The Cayman Islands currently levies no 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.

Payment of dividends and capital in respect of the shares will not be subject to taxation in the Cayman Islands and no withholding will be requested on the payment of a dividend or capital to any holder of the shares, nor will gains derived from the disposal of the shares be subject to Cayman Islands income or corporation tax.

[Table of Contents](#)**People's Republic of China Taxation**

Under the EIT Law, an enterprise 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. Circular 82, as amended, clarified that dividends and other income paid by certain offshore enterprises controlled by a PRC company or a PRC company group established outside of the PRC will be considered PRC-source income and subject to PRC withholding tax, currently at a rate of 10% (or a lower rate under an applicable tax treaty, if any), when paid to non-PRC enterprise shareholders. Under the implementation regulations to the EIT Law, a “place of effective management” is defined as a body that has material and overall management and control over the manufacturing and business operations, personnel and human resources, finances and properties of an enterprise. In addition, the circular mentioned above specifies that certain offshore enterprises controlled by a PRC company or a PRC company group will be classified as PRC resident enterprises if the following are located or resident in the PRC: senior management personnel and departments that are responsible for daily production, operation and management; financial and personnel decision-making bodies; key properties, accounting books, the company seal, and minutes of board meetings and shareholders meetings; and half or more of the senior management or directors having voting rights. Although the circular only applies to offshore enterprises controlled by PRC enterprises and not those controlled by PRC individuals, the determining criteria set forth in the circular may reflect the State Administration of Taxation’s general position on how the “place of effective management” test should be applied in determining the tax resident status of offshore enterprises, regardless of whether they are controlled by PRC enterprises or individuals.

We believe that we are not a PRC resident enterprise. However, if the PRC tax authorities determine we are a PRC resident enterprise for EIT purposes, we may be required to withhold tax at the rate of 10% (or a lower rate under an applicable tax treaty, if any) from dividends we pay to our non-PRC resident enterprise shareholders (20% for non-PRC individual shareholders), including the holders of our ADSs. In addition, non-PRC holders of shares and ADSs may be subject to PRC tax on gains realized on the sale or other disposition of ADSs or Class A ordinary shares at the same rates if such income is treated as sourced from within the PRC. It is unclear whether our non-PRC holders of shares and ADSs would be able to claim the benefits of any tax treaties between their jurisdictions of tax residence and the PRC in the event that we are treated as a PRC resident enterprise. See “Item 3. Key Information—D, Risk Factors—Risks Related to Doing Business in China—Under the New PRC Enterprise Income Tax Law, we may be classified as a “resident enterprise” of China. Such classification could result in unfavorable tax consequences to us and our non-PRC holders of shares and ADSs.”

U.S. Federal Income Tax Considerations

The following is a summary of the principal U.S. federal income tax considerations of the ownership and disposition of our ADSs or Class A ordinary shares by a U.S. Holder, as defined below, that holds our ADSs or Class A ordinary shares as “capital assets” (generally, property held for investment) under the U.S. Internal Revenue Code of 1986, as amended (the “Code”). This summary is based on the tax laws of the United States as in effect on the date of this annual report on Form 20-F and on U.S. Treasury regulations in effect or, in some cases, proposed, as of the date of this annual report on Form 20-F, as well as judicial and administrative interpretations thereof available on or before such date. All of the foregoing authorities are subject to change, which change could apply retroactively and could affect the tax considerations described below. No ruling has been sought from the United States Internal Revenue Service (the “IRS”) with respect to any U.S. federal income tax considerations described below, and there can be no assurance that the IRS or a court will not take a contrary position. This summary does not discuss all aspects of U.S. federal income taxation that may be important to particular investors in light of their individual investment circumstances, including investors subject to special tax rules (for example, banks, certain financial institutions, insurance companies, regulated investment companies, real estate investment trusts, broker-dealers, traders in securities that elect mark-to-market treatment, partnerships and their partners, tax-exempt entities (including private foundations), investors who are not U.S. Holders, investors liable for the alternative minimum tax, investors who acquired their ADSs or Class A ordinary shares pursuant to the exercise of any employee share option or otherwise as compensation, investors who own (directly, indirectly, or constructively) 10% or more of our stock (by vote or value), investors that hold their ADSs or Class A ordinary shares as part of a straddle, hedge, conversion, constructive sale or other integrated transaction for U.S. federal income tax purposes, investors subject to the 3.8% Medicare tax on their net investment income, or investors that have a functional currency other than the U.S. dollar), all of whom may be subject to tax rules that differ significantly from those summarized below. In addition, this summary does not discuss any state, local, or non-U.S. tax considerations. Each potential investor is urged to consult its tax advisor regarding the U.S. federal, state, local and non-U.S. income and other tax considerations of an investment in our ADSs or Class A ordinary shares.

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For purposes of this summary, a “U.S. Holder” is a beneficial owner of our ADSs or Class A ordinary shares that is, for U.S. federal income tax purposes, (i) an individual who is a citizen or resident of the United States, (ii) a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created in, or organized under the law of, the United States or any state thereof or the District of Columbia, (iii) an estate the income of which is includible in gross income for U.S. federal income tax purposes regardless of its source, or (iv) a trust (A) the administration of which is subject to the primary supervision of a United States court and which has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (B) that has otherwise elected to be treated as a U.S. person under the Code.

If a partnership (or other entity treated as a partnership for U.S. federal income tax purposes) is a beneficial owner of our ADSs or Class A ordinary shares, the tax treatment of a partner in the partnership will generally depend upon the status of the partner and the activities of the partnership. Partnerships and partners of a partnership holding our ADSs or Class A ordinary shares are urged to consult their tax advisors regarding an investment in our ADSs or Class A ordinary shares.

The discussion below assumes that the representations contained in the deposit agreement are true and that the obligations in the deposit agreement and any related agreement have been and will be complied with in accordance with their terms. U.S. Holders who hold ADSs will be treated as the holder of the underlying ordinary shares represented by those ADSs for U.S. federal income tax purposes.

Passive Foreign Investment Company Considerations

A non-U.S. corporation, such as our company, will be a “passive foreign investment company,” or PFIC, for U.S. federal income tax purposes for any taxable year, if either (i) 75% or more of its gross income for such year consists of certain types of “passive” income or (ii) 50% or more of the value of its assets (determined on the basis of a quarterly average) during such year produce or are held for the production of passive income (the “asset test”). Passive income generally includes dividends, interest, certain non-active royalties, rents, annuities, net gains from the sale or exchange of property producing such income and net foreign currency gains. For this purpose, cash and assets readily convertible into cash are categorized as passive assets and the company’s unbooked intangibles are taken into account for determining the value of its assets. We will be treated as owning a proportionate share of the assets and earning a proportionate share of the income of any other corporation in which we own, directly or indirectly, more than 25% (by value) of the stock.

Although the law in this regard is not entirely clear, we treat our variable interest entities as being owned by us for U.S. federal income tax purposes because we control their management decisions and we are entitled to substantially all of their economic benefits and, as a result, we consolidate their results of operations in our consolidated U.S. GAAP financial statements. If it were determined, however, that we are not the owner of our variable interest entities for U.S. federal income tax purposes, we would likely be treated as a PFIC for our taxable year ended December 31, 2019 and for subsequent taxable years.

Assuming that we are the owner of our variable interest entities for U.S. federal income tax purposes, we believe that we primarily operate as an active provider of managed hosting and cloud services in China. Based on the market price of our ADSs and Class A ordinary shares, the value of our assets, and the composition of our assets and income, we believe that we were not a PFIC for U.S. federal income tax purposes for our taxable year ended December 31, 2019 and we do not expect to be a PFIC in subsequent years.

While we do not anticipate becoming a PFIC, because the value of our assets for purposes of the asset test may be determined, in part, by reference to the market price of our ADSs or Class A ordinary shares, fluctuations in the market price of our ADSs and Class A ordinary shares may cause us to become a PFIC for the current or any subsequent taxable year. Under circumstances where revenues from activities that produce passive income significantly increase relative to our revenues from activities that produce non-passive income, or where we determine not to deploy significant amounts of cash for active purposes, our risk of becoming a PFIC may substantially increase.

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Furthermore, because there are uncertainties in the application of the relevant rules, it is possible that the IRS may challenge our classification of certain income and assets as non-passive or our valuation of our tangible and intangible assets, each of which may result in our becoming a PFIC for the current taxable year or any future taxable years. If we are a PFIC for any year during which a U.S. Holder holds our ADSs or Class A ordinary shares, we generally will continue to be treated as a PFIC as to such U.S. Holder for all succeeding years during which such U.S. Holder holds our ADSs or Class A ordinary shares unless we cease to be a PFIC and the U.S. Holder makes a “deemed sale” election with respect to the ADSs or Class A ordinary shares.

If we are a PFIC for any taxable year during which a U.S. Holder holds our ADSs or Class A ordinary shares, unless the U.S. Holder makes a mark-to-market election (as described below), the U.S. Holder will generally be subject to special tax rules that have a penalizing effect, regardless of whether we remain a PFIC, on (i) any excess distribution that we make to the U.S. Holder (which generally means any distribution paid during a taxable year to a U.S. Holder that is greater than 125% of the average annual distributions paid in the three preceding taxable years or, if shorter, the U.S. Holder’s holding period for the ADSs or Class A ordinary shares), and (ii) any gain realized on the sale or other disposition, including, under certain circumstances, a pledge, of ADSs or Class A ordinary shares. Under the PFIC rules:

- the excess distribution and/or gain will be allocated ratably over the U.S. Holder’s holding period for the ADSs or Class A ordinary shares;
- the amount allocated to the current taxable year and any taxable years in the U.S. Holder’s holding period prior to the first taxable year in which we are a PFIC, or pre-PFIC year, will be taxable as ordinary income;
- the amount allocated to each of the other taxable years would be subject to tax at the highest rate of tax in effect for the applicable class of taxpayer for such year and would be increased by an additional tax equal to interest on the resulting tax deemed deferred with respect to each such other taxable year.

The tax liability for amounts allocated to years prior to the year of disposition or “excess distribution” cannot be offset by any net operating losses for such years, and gains (but not losses) realized on the sale of the ADSs or ordinary shares cannot be treated as capital, even if such ADSs or ordinary shares are held as capital assets.

If we are a PFIC for any taxable year during which a U.S. Holder holds our ADSs or Class A ordinary shares and any of our non-U.S. subsidiaries is also a PFIC, such U.S. Holder would be treated as owning a proportionate amount (by value) of the shares of the lower-tier PFIC and would be subject to the rules described above on certain distributions by a lower-tier PFIC and a disposition of shares of a lower-tier PFIC even though such U.S. holder would not receive the proceeds of those distributions or dispositions. U.S. Holders should consult their tax advisors regarding the application of the PFIC rules to any of our subsidiaries.

As an alternative to the foregoing rules, if we are a PFIC, a U.S. Holder of “marketable stock” (as defined below) may make a mark-to-market election with respect to our ADSs, but not our Class A ordinary shares, provided that the ADSs continue to be listed on the Nasdaq Global Select Market and are regularly traded. The mark-to-market election is available only for “marketable stock,” which is stock that is traded in other than de minimis quantities on at least 15 days during each calendar quarter, or “regularly traded,” on a qualified exchange or other market, as defined in applicable Treasury regulations. If a U.S. Holder makes this election, the holder will generally (i) include as ordinary income for each taxable year that we are a PFIC the excess, if any, of the fair market value of ADSs held at the end of the taxable year over the adjusted tax basis of such ADSs and (ii) deduct as an ordinary loss the excess, if any, of the adjusted tax basis of the ADSs over the fair market value of such ADSs held at the end of the taxable year, but such deduction will only be allowed to the extent of the net amount previously included in income as a result of the mark-to-market election. The U.S. Holder’s adjusted tax basis in the ADSs would be adjusted to reflect any income or loss resulting from the mark-to-market election. If a U.S. Holder makes a mark-to-market election and we cease to be a PFIC, the holder will not be required to take into account the mark-to-market gain or loss described above during any period that we are not a PFIC. If a U.S. Holder makes a mark-to-market election, any gain such U.S. Holder recognizes upon the sale or other disposition of our ADSs in a year when we are a PFIC will be treated as ordinary income and any loss will be treated as ordinary loss, but such loss will only be treated as ordinary loss to the extent of the net amount previously included in income as a result of the mark-to-market election. In the case of a U.S. Holder who has held ADSs during any taxable year in respect of which we were classified as a PFIC and continues to hold such ADSs (or any portion thereof) and has not previously determined to make a mark-to-market election, and who is now considering making a mark-to-market election, special tax rules may apply relating to purging the PFIC taint of such ADSs.

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Because, as a technical matter, a mark-to-market election cannot be made for any lower-tier PFICs that we may own, a U.S. Holder may continue to be subject to the general PFIC rules described above with respect to such U.S. Holder's indirect interest in any investments held by us that are treated as an equity interest in a PFIC for U.S. federal income tax purposes, notwithstanding a market-to-market election.

We do not intend to provide information necessary for U.S. Holders to make qualified electing fund elections, which, if available, would result in tax treatment different from the general tax treatment for PFICs described above.

If a U.S. Holder owns our ADSs or Class A ordinary shares during any taxable year that we are a PFIC, the holder must file an annual report with the U.S. Internal Revenue Service. Each U.S. Holder is urged to consult its tax advisor concerning the U.S. federal income tax considerations of purchasing, holding, and disposing ADSs or Class A ordinary shares if we are or become a PFIC, including the possibility of making a mark-to-market election.

Dividends

Subject to the PFIC discussion above, any cash distributions (including the amount of any PRC tax withheld) paid on our ADSs or Class A ordinary shares out of our current or accumulated earnings and profits, as determined under U.S. federal income tax principles, will generally be includible in the gross income of a U.S. Holder as dividend income on the day actually or constructively received by the U.S. Holder, in the case of Class A ordinary shares, or by the depositary bank, in the case of ADSs. Because we do not intend to determine our earnings and profits on the basis of U.S. federal income tax principles, any distribution paid will generally be treated as a "dividend" for U.S. federal income tax purposes.

Individuals and other non-corporate recipients of dividend income generally will be subject to tax on dividend income from a "qualified foreign corporation" at a lower applicable capital gains rate rather than the marginal tax rates generally applicable to ordinary income provided that certain holding period and other requirements are met. We will be considered to be a qualified foreign corporation with respect to any dividend we pay on our ADSs or Class A ordinary shares provided that (i) our ADSs or Class A ordinary shares are readily tradable on an established securities market in the United States, or we are eligible for the benefits of a comprehensive tax treaty with the United States that the Secretary of Treasury of the United States determines is satisfactory for this purpose and includes an exchange of information program, (ii) we are not treated as a PFIC for U.S. federal income tax purposes for the taxable year in which the dividend was paid or the preceding taxable year, and (iii) certain holding period requirements are met. Because (i) U.S. Treasury guidance indicates that ADSs representing ordinary shares, such as ours, listed on the Nasdaq Global Select Market are considered to be readily tradable on an established securities market in the United States, and (ii) we believe that we were not a PFIC for U.S. federal income tax purposes for our taxable year ended December 31, 2019 and we do not expect to be a PFIC in subsequent years, we believe that we are a qualified foreign corporation with respect to dividends paid on the ADSs, but not with respect to dividends paid on our Class A ordinary shares. In the event we are deemed to be a resident enterprise under the PRC Enterprise Income Tax Law, we believe that we would be eligible for the benefits under the United States-PRC income tax treaty (which the U.S. Treasury Department has determined is satisfactory for this purpose) and that we would be treated as a qualified foreign corporation with respect to dividends paid on both our Class A ordinary shares or ADSs. U.S. Holders should consult their tax advisors regarding the availability of the reduced tax rate on dividends in their particular circumstances. Dividends received on our ADSs or Class A ordinary shares will not be eligible for the dividends received deduction allowed to corporations.

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For U.S. foreign tax credit purposes, dividends paid on our ADSs or Class A ordinary shares generally will be treated as income from foreign sources and generally will constitute passive category income. In the event that we are deemed to be a PRC resident enterprise under the PRC Enterprise Income Tax Law, a U.S. Holder may be subject to PRC withholding taxes on dividends paid, if any, on our ADSs or Class A ordinary shares. A U.S. Holder may be eligible, subject to a number of complex limitations, to claim a foreign tax credit in respect of any nonrefundable foreign withholding taxes imposed on dividends received on our ADSs or Class A ordinary shares. A U.S. Holder who does not elect to claim a foreign tax credit for foreign tax withheld may instead claim a deduction for U.S. federal income tax purposes in respect of such withholding, but only for a year in which such holder elects to do so for all creditable foreign income taxes. The rules governing the foreign tax credit are complex. U.S. Holders are urged to consult their tax advisors regarding the availability of the foreign tax credit under their particular circumstances.

Sale or Other Disposition of ADSs or Class A Ordinary Shares

Subject to the PFIC discussion above, a U.S. Holder will generally recognize capital gain or loss upon the sale or other disposition of ADSs or Class A ordinary shares in an amount equal to the difference between the amount realized upon the disposition and the holder's adjusted tax basis in such ADSs or Class A ordinary shares. The gain or loss will generally be capital gain or loss. Any capital gain or loss will be long-term if the ADSs or Class A ordinary shares have been held for more than one year. An individual U.S. Holder or other non-corporate U.S. Holder who has held the ADS or ordinary share for more than one year, will generally be eligible for reduced tax rates. The deductibility of capital losses is subject to limitations. Any such gain or loss that recognized by a U.S. Holder will generally be treated as U.S. source income or loss for foreign tax credit limitation purposes, which will generally limit the availability of foreign tax credits. However, in the event we are deemed to be a PRC "resident enterprise" under PRC tax law, we may be eligible for the benefits of the income tax treaty between the United States and the PRC. In such event, if PRC tax were to be imposed on any gain from the disposition of the ADSs or ordinary shares, a U.S. Holder that is eligible for the benefits of the income tax treaty between the United States and the PRC may elect to treat such gain as PRC source income. U.S. holders are urged to consult their tax advisors regarding the tax considerations if a foreign tax is imposed on a disposition of our ADSs or Class A ordinary shares, including the availability of the foreign tax credit under their particular circumstances.

F. [Dividends and Paying Agents](#)

Not applicable.

G. [Statement by Experts](#)

Not applicable.

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We have filed with the SEC a registration statement on Form F-1, including relevant exhibits and securities under the Securities Act with respect to underlying ordinary shares represented by the ADSs.

We are subject to the periodic reporting and other informational requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Under the Exchange Act, we are required to file reports and other information with the SEC. Specifically, we are required to file annually a Form 20-F no later than four months after the close of each fiscal year, which is December 31. Copies of reports and other information, when so filed, may be inspected without charge and may be obtained at prescribed rates at the public reference facilities maintained by the SEC at 100 F Street, N.E., Room 1580, Washington, D.C. 20549, and at the regional office of the SEC located at Citicorp Center, 500 West Madison Street, Suite 1400, Chicago, Illinois 60661. The public may obtain information regarding the Washington, D.C. Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site at www.sec.gov that contains reports, proxy and information statements, and other information regarding registrants that make electronic filings with the SEC using its EDGAR system.

Our internet website is www.21vianet.com. We make available free of charge on our website our annual reports on Form 20-F and any amendments to such reports as soon as reasonably practicable following the electronic filing of such report with the SEC. In addition, we provide electronic or paper copies of our filings free of charge upon request. The information contained on our website is not part of this or any other report filed with or furnished to the SEC.

As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act. Our financial statements have been prepared in accordance with U.S. GAAP.

We will furnish hard copies of our annual report which will include a review of operations and annual audited consolidated financial statements prepared in conformity with U.S. GAAP free of charge to our shareholders and ADS holders upon request.

I. Subsidiary Information

For a listing of our subsidiaries, see “Item 4. Information on the Company—C. Organizational Structure.”

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**Interest Rate Risk**

Our exposure to interest rate risk primarily relates to interest expenses incurred in respect of bonds payable, bank 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, 2019, we had: (i) short-term and long-term bank borrowings (current portions) with an aggregate outstanding balance of RMB267.0 million (US\$38.4 million); (ii) long-term bank borrowings (excluding current portions) with an aggregate outstanding balance of RMB79.5 million (US\$11.4 million); and (iii) an outstanding principal balance of US\$131.2 million with respect to the 2020 Notes payable.

The short-term bank borrowings bore a weighted average interest rate of 4.56% per annum. The long-term bank borrowings bore weighted-average interest rate of 5.28% per annum. The 2020 Notes bore an interest rate of 7.000% per annum and an effective interest rate of 6.98% per annum. We also had RMB363.9 million (US\$52.3 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 RMB173,567 (US\$24,931) in interest expense for the year ended December 31, 2019. 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.

[Table of Contents](#)**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 5.0% against the U.S. dollar in 2018 and then further depreciated 1.6% in 2019. 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, 2019, we had total U.S. dollar-denominated cash and cash equivalent, restricted cash and short-term investments in the amount of US\$213.8 million. A hypothetical 10% increase in the exchange rate of the U.S. dollar against the RMB would have resulted in increase of RMB148.8 million (US\$21.4 million) in the value of our U.S. dollar-denominated financial assets at December 31, 2019.

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.

Inflation Risk

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 2017, 2018 and 2019 were 1.6%, 2.1% and 2.9%, respectively. The year -over-year percent changes in the consumer price index for January 2018, 2019 and 2020 were increases of 1.5%, 1.7% and 5.4%, 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.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES**A. Debt Securities**

Not applicable.

B. Warrants and Rights

Not applicable.

C. Other Securities

Not applicable.

D. American Depositary Shares**Fees and Charges Our ADS holders May Have to Pay**

Citibank, N.A., the depositary of our ADS program, collects fees for delivery and surrender of ADSs directly from investors depositing shares or surrendering ADSs for the purpose of withdrawal or from intermediaries acting for them. The depositary collects fees for making distributions to investors by deducting those fees from the amounts distributed or by selling a portion of distributable property to pay the fees. The depositary may collect its annual fee for depositary services by deductions from cash distributions or by directly billing investors or by charging the book-entry system accounts of participants acting for them. The depositary may generally refuse to provide fee-attracting services until its fees for those services are paid. Citibank's principal executive office is located at 388 Greenwich Street, New York, New York, 10013. The depositary bank typically appoints a custodian to safeguard the securities on deposit. In this case, the custodian is Citibank Hong Kong, located at 10/F, Harbour Front (II), 22, Tak Fung Street, Hung Hom, Kowloon, Hong Kong. As an ADS holder, you will be required to pay the following service fees to the depositary bank:

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Service	Fees
• Issuance of ADSs	Up to US\$0.05 per ADS issued
• Cancellation of ADSs	Up to US\$0.05 per ADS canceled
• Distribution of cash dividends or other cash distributions	Up to US\$0.05 per ADS held
• Distribution of ADSs pursuant to stock dividends, free stock distributions or exercise of rights.	Up to US\$0.05 per ADS held
• Distribution of securities other than ADSs or rights to purchase additional ADSs	Up to US\$0.05 per ADS held
• Depositary services	Up to US\$0.05 per ADS held on the applicable record date(s) established by the Depositary
• Transfer of ADRs	US\$1.50 per certificate presented for transfer

As an ADS holder, you will also be responsible to pay certain fees and expenses incurred by the depositary bank and certain taxes and governmental charges such as:

- fees for the transfer and registration of Class A ordinary shares charged by the registrar and transfer agent for the Class A ordinary shares in the Cayman Islands (i.e., upon deposit and withdrawal of Class A ordinary shares);
- expenses incurred for converting foreign currency into U.S. dollars;
- expenses for cable, telex and fax transmissions and for delivery of securities;
- taxes and duties upon the transfer of securities (i.e., when Class A ordinary shares are deposited or withdrawn from deposit); and
- fees and expenses incurred in connection with the delivery or servicing of Class A ordinary shares on deposit.

Depositary fees payable upon the issuance and cancellation of ADSs are typically paid to the depositary bank by the brokers (on behalf of their clients) receiving the newly issued ADSs from the depositary bank and by the brokers (on behalf of their clients) delivering the ADSs to the depositary bank for cancellation. The brokers in turn charge these fees to their clients. Depositary fees payable in connection with distributions of cash or securities to ADS holders and the depositary services fee are charged by the depositary bank to the record holders of ADSs as of the applicable ADS record date.

The depositary fees payable for cash distributions are generally deducted from the cash being distributed. In the case of distributions other than cash (i.e., stock dividends, rights), the depositary bank charges the applicable fee to the record date ADS holders concurrent with the distribution. In the case of ADSs registered in the name of the investor (whether certificated or uncertificated in the direct registration system), the depositary bank sends invoices to the applicable record date ADS holders. In the case of ADSs held in brokerage and custodian accounts (via DTC), the depositary bank generally collects its fees through the systems provided by DTC (whose nominee is the registered holder of the ADSs held in DTC) from the brokers and custodians holding ADSs in their DTC accounts. The brokers and custodians who hold their clients' ADSs in DTC accounts in turn charge their clients' accounts the amount of the fees paid to the depositary banks.

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In the event of refusal to pay the depositary fees, the depositary bank may, under the terms of the deposit agreement, refuse the requested service until payment is received or may set off the amount of the depositary fees from any distribution to be made to the ADS holder.

Note that the fees and charges you may be required to pay may vary over time and may be changed by us and by the depositary bank. You will receive prior notice of such changes.

The depositary bank may reimburse us for certain expenses incurred by us in respect of the ADR program established pursuant to the deposit agreement, by making available a portion of the depositary fees charged in respect of the ADR program or otherwise, upon such terms and conditions as we and the depositary bank may agree from time to time.

Fees and Other Payments Made by the Depositary to Us

Our depositary has agreed to reimburse us for certain expenses we incur that are related to establishment and maintenance of the ADS program, including investor relations expenses and exchange application and listing fees. There are limits on the amount of expenses for which the depositary will reimburse us, but the amount of reimbursement available to us is not related to the amounts of fees the depositary collects from investors. For the year ended December 31, 2019, we were entitled to US\$994,706 from the depositary as reimbursement for our expenses incurred in connection with the establishment and maintenance of the ADS program.

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PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

See “Item 10. Additional Information” for a description of the rights of security holders, which remain unchanged since our initial public offering.

The following “Use of Proceeds” information relates to the registration statement on Form F-1 (File number 333-173292) for our initial public offering of 14,950,000 ADSs, representing 89,700,000 Class A ordinary shares, which registration statement was declared effective by the SEC on April 21, 2011. We issued and sold all registered ADSs at an initial offering price of US\$15.00 per ADS.

We received net proceeds of US\$204.3 million from our initial public offering. We used all of the net proceeds received from our initial public offering on data center infrastructure expansion, network infrastructure expansion and general corporate purposes.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, has performed an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) as of the end of the period covered by this annual report, as required by Rule 13a-15(b) under the Exchange Act. Based on such evaluation, our management has concluded that, as of the end of the period covered by this annual report, our disclosure controls and procedures were effective.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control system was designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation and fair presentation of its published consolidated financial statements. All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective may not prevent or detect misstatements and can provide only reasonable assurance with respect to financial statement preparation and presentation. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management, with the participation of our chief executive officer and chief financial officer, conducted an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2019. In making this assessment, we used the criteria established within the Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on this assessment, our management has concluded that, as of December 31, 2019, our internal control over financial reporting was effective.

Our independent registered public accounting firm, Ernst & Young Hua Ming LLP, has audited our internal control over financial reporting as of December 31, 2019 and has issued an attestation report set forth below.

[Table of Contents](#)**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

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

Opinion on Internal Control over Financial Reporting

We have audited 21Vianet Group, Inc.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, 21Vianet Group, Inc. (the "Company") maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and our report dated April 2, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting 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 US 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 effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young Hua Ming LLP

Shanghai, the People's Republic of China

April 2, 2020

[Table of Contents](#)**Changes in Internal Control over Financial Reporting**

There were no changes in our internal controls over financial reporting that occurred during the period covered by this annual report that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our board of directors has determined that Mr. Sean Shao, an independent director (under the standards set forth in Nasdaq Stock Market Rule 5605(a)(2) and Rule 10A-3 under the Exchange Act) and a member of our audit committee, is an audit committee financial expert.

ITEM 16B. CODE OF ETHICS

Our board of directors has adopted a code of ethics that applies to our directors, officers, employees and agents, including certain provisions that specifically apply to our chief executive officer, chief financial officer, chief operating officer, vice presidents and any other persons who perform similar functions for us. We have filed our code of business conduct and ethics as an exhibit to our registration statement on Form F-1 (No. 333-173292).

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table sets forth the aggregate fees by categories specified below in connection with certain professional services rendered by Ernst & Young Hua Ming LLP for the periods indicated. We did not pay any other fees to Ernst & Young Hua Ming LLP during the periods indicated below.

	For the Years Ended December 31,	
	2018	2019
	(in US\$ thousands)	
Audit fees ⁽¹⁾	1,252	915
Audit-related fees ⁽²⁾	—	203
Tax fees	32	19
Other fees ⁽³⁾	—	45

Notes:

- (1) "Audit fees" means the aggregate fees billed for professional services rendered by Ernst & Young Hua Ming LLP for the audit of our annual financial statements.
- (2) "Audit-related fees" means, for the year ended December 31, 2019, the aggregate fees billed for services provided in connection with offering of the 2021 Notes.
- (3) "Other fees" means the aggregate fees billed for professional services in connection with the review of ASC842 in 2019.

The policy of our audit committee is to pre-approve all audit and non-audit services provided by Ernst & Young Hua Ming LLP, including audit, audit-related and tax services as described above, prior to the commencement of such services.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

On December 2, 2019, our board of directors approved a share repurchase program to repurchase up to US\$20 million worth of our ADSs during a 13-month period ending on December 31, 2020. The share repurchase program permitted us to purchase its ADSs through various means, including open market transactions, privately negotiated transactions, any combination thereof or other legally permissible means in accordance with applicable rules and regulations. The number of ADSs repurchased and the timing of repurchases will depend on a number of factors, including, but not limited to, price, trading volume and general market conditions, along with our working capital requirements, general business conditions and other factors.

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For the period from December 4, 2019 to December 31, 2019, we repurchased 242,830 ADSs for a consideration of US\$1.7 million under our share repurchase program.

The following table sets forth a summary of our repurchase of our ADSs made in the year 2019 under the share repurchase programs described in the paragraph above.

Period	Total Number of ADSs Purchased ⁽²⁾	Average Price Paid Per ADS ⁽³⁾	Total Number of ADSs Purchased as Part of Publicly Announced Program ⁽¹⁾	Maximum Dollar Value of ADSs that May Yet Be Purchased Under the Program (US\$)
(December 4, 2019—December 31, 2019)	242,830	7.00	242,830	18,325,030

(1) On December 2, 2019, our board of directors approved a share repurchase program under which we may repurchase up to US\$20 million worth of our American depositary shares, representing Class A ordinary shares, during a 13-month period ending on December 31, 2020.

(2) Each ADS represents six Class A ordinary shares.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

Not applicable.

ITEM 16G. CORPORATE GOVERNANCE

Certain corporate governance practices in the Cayman Islands, which is our home country, are considerably different than the standards applied to U.S. domestic issuers. Nasdaq Stock Market Rules provide that foreign private issuers are exempt from certain corporate governance requirements of Nasdaq and may follow their home country practices, subject to certain exceptions and requirements to the extent that such exemptions would be contrary to U.S. federal securities laws and regulations. We currently follow our home country practice that: (i) does not require us to solicit proxy and hold meetings of our shareholders every year, (ii) does not restrict a company's transactions with directors, requiring only that directors exercise a duty of care and owe certain fiduciary duties to the companies for which they serve, (iii) does not require us to obtain shareholder approval for issuing additional securities exceeding 20% of our outstanding ordinary shares, and (iv) does not require us to seek shareholders' approval for amending our share incentive plan. In the future, we may rely on other exemptions provided by Nasdaq.

In accordance with NASDAQ Stock Market Rule 5250(d)(1), we will post this annual report on Form 20-F on our company website at <http://ir.21vianet.com>. In addition, we will provide hard copies of our annual report free of charge to shareholders and ADS holders upon request.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

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PART III

ITEM 17. FINANCIAL STATEMENTS

We have elected to provide financial statements pursuant to Item 18.

ITEM 18. FINANCIAL STATEMENTS

The consolidated financial statements of 21Vianet Group, Inc. and its subsidiaries and consolidated affiliated entities are included at the end of this annual report.

ITEM 19. EXHIBITS

Exhibit Number	Description of Document
1.1	Fourth Amended and Restated Memorandum and Articles of Incorporation of the Registrant (incorporated by reference to Exhibit 3.2 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the U.S. Securities and Exchange Commission (the "Commission") on April 4, 2011)
2.1	Specimen American Depositary Receipt of the Registrant (incorporated by reference to Exhibit 4.1 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
2.2	Specimen Certificate for Class A Ordinary Shares of the Registrant (incorporated by reference to Exhibit 4.2 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
2.3	Deposit Agreement among the Registrant, the depositary and holders and beneficial holders of the American Depositary Shares (incorporated by reference to Exhibit 4.3 from our registration statement on Form S-8 (File No. 333-177273), as amended, filed with the Commission on October 13, 2011)
2.4	Amended and Restated Shareholders Agreement between the Registrant and other parties therein dated January 14, 2011 (incorporated by reference to Exhibit 4.4 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
2.5*	Description of securities
2.6*	Indenture dated April 15, 2019 constituting US\$300 million 7.875% Senior Notes due 2021 between the Registrant and Citicorp International Limited, as trustee
4.1	Form of Indemnification Agreement between the Registrant and its Directors (incorporated by reference to Exhibit 10.3 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
4.2	Form of Employment Agreement between the Registrant and an Executive Officer of the Registrant (incorporated by reference to Exhibit 10.4 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)

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Exhibit Number	Description of Document
4.3	English translation of Loan Agreement dated January 28, 2011, between 21Vianet Data Center Co., Ltd. and the shareholders of Beijing aBitCool Network Technology Co., Ltd. (which later changed its name to Beijing Yiyun Network Technology Co., Ltd.) (incorporated by reference to Exhibit 4.7 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 19, 2013)
4.4	English translation of Share Pledge Agreement dated February 23, 2011, among 21Vianet Data Center Co., Ltd., Beijing aBitCool Network Technology Co., Ltd. (which later changed its name to Beijing Yiyun Network Technology Co., Ltd.) and the shareholders of Beijing aBitCool Network Technology Co., Ltd. (which later changed its name to Beijing Yiyun Network Technology Co., Ltd.) (incorporated by reference to Exhibit 10.6 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
4.5	English translation of Form Irrevocable Power of Attorney, by the shareholders of Beijing aBitCool Network Technology Co., Ltd. (which later changed its name to Beijing Yiyun Network Technology Co., Ltd.) (incorporated by reference to Exhibit 10.7 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
4.6	English Translation of Power of Attorney dated September 30, 2010, by 21Vianet Data Center Co., Ltd. (incorporated by reference to Exhibit 10.8 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
4.7	Exclusive Technical Consulting and Services Agreement dated December 19, 2006, between 21Vianet Data Center Co., Ltd. and Beijing aBitCool Network Technology Co., Ltd. (which later changed its name to Beijing Yiyun Network Technology Co., Ltd.) (incorporated by reference to Exhibit 10.9 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
4.8	Optional Share Purchase Agreement dated December 19, 2006, among 21Vianet Data Center Co., Ltd., 21Vianet System Limited (which later changed its name to Beijing aBitCool Network Technology Co., Ltd. and then to Beijing Yiyun Network Technology Co., Ltd.), Beijing 21Vianet Broad Band Data Center Co., Ltd. and the shareholders of Beijing aBitCool Network Technology Co., Ltd. (which later changed its name to Beijing Yiyun Network Technology Co., Ltd.) (incorporated by reference to Exhibit 10.10 from our registration statement on Form F-1 (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
4.9	Commitment Letter dated September 30, 2010, by AsiaCloud Inc. (which later changed its name to 21Vianet Group, Inc.), 21Vianet Data Center Co., Ltd., Sheng Chen and Jun Zhang (incorporated by reference to Exhibit 4.13 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 19, 2013)
4.10	2010 Share Incentive Plan, as amended on January 14, 2011 and July 6, 2012 (incorporated by reference to Exhibit 10.12 from our Form S-8 (File No. 333-187695), initially filed with the Commission on April 3, 2013)
4.11	English summary of Property Lease Agreement dated February 4, 2013, between Beijing Xingguang Tuocheng Investment Co., Ltd. and Beijing 21Vianet Broad Band Data Center Co., Ltd. (incorporated by reference to Exhibit 4.18 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 19, 2013)

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Exhibit Number	Description of Document
4.12	Investor Rights Agreement dated January 15, 2015, among 21Vianet Group, Inc., King Venture Holdings Limited, Xiaomi Ventures Limited and certain other parties named therein (incorporated by reference to Exhibit 7.04 from Form Schedule 13D (File No. 005-86326), initially filed by King Venture Holdings Limited and other filers with the Commission on January 20, 2015)
4.13	Registration Rights Agreement dated January 15, 2015, among 21Vianet Group, Inc., King Venture Holdings Limited and Xiaomi Ventures Limited (incorporated by reference to Exhibit 7.05 from Form Schedule 13D (File No. 005-86326), initially filed by King Venture Holdings Limited and other filers with the Commission on January 20, 2015)
4.14	English translation of Loan Agreement dated July 1, 2014, among Abitcool (China) Broadband Inc., Sheng Chen and Jun Zhang (incorporated by reference to Exhibit 4.25 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 10, 2015)
4.15	English translation of Equity Pledge Agreement dated July 1, 2014, among Abitcool (China) Broadband Inc., Sheng Chen and Jun Zhang (incorporated by reference to Exhibit 4.26 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 10, 2015)
4.16	English translation of Form Irrevocable Power of Attorney, by the shareholders of aBitcool Small Micro Network Technology (BJ) Co., Ltd. (incorporated by reference to Exhibit 4.27 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 10, 2015)
4.17	English translation of Power of Attorney dated July 1, 2014, by Abitcool (China) Broadband Inc. (incorporated by reference to Exhibit 4.28 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 10, 2015)
4.18	English translation of Exclusive Technology Consulting and Services Agreement dated July 1, 2014, between Abitcool (China) Broadband Inc. and aBitcool Small Micro Network Technology (BJ) Co., Ltd. (incorporated by reference to Exhibit 4.29 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 10, 2015)
4.19	English translation of Exclusive Services Agreement dated July 1, 2014, between Abitcool (China) Broadband Inc. and aBitcool Small Micro Network Technology (BJ) Co., Ltd. (which later changed its name to WiFire Network Technology (Beijing) Co., Ltd.) (incorporated by reference to Exhibit 4.30 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 10, 2015)

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Exhibit Number	Description of Document
4.20	English translation of Exclusive Call Option Agreement dated July 1, 2014, among aBitCool Broadband Inc. (which later changed its name to WiFire Group Inc.), Sheng Chen, Jun Zhang and aBitCool Small Micro Network Technology (BJ) Co., Ltd. (which later changed its name to WiFire Network Technology (Beijing) Co., Ltd.) (incorporated by reference to Exhibit 4.31 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 10, 2015)
4.21	English translation of Commitment Letter dated July 1, 2014 by Sheng Chen, Jun Zhang and aBitCool Small Micro Network Technology (BJ) Co., Ltd. (which later changed its name to WiFire Network Technology (Beijing) Co., Ltd.) (incorporated by reference to Exhibit 4.32 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 10, 2015)
4.22	2014 Share Incentive Plan, as amended on April 1, 2015 and December 22, 2017 (incorporated by reference to Exhibit 10.1 from our Form S-8 (File No. 333-222521), initially filed with the Commission on January 12, 2018)
4.23	Share Subscription Agreement, dated May 23, 2016, between 21Vianet Group Inc. and Tuspark Innovation Venture Limited (incorporated by reference to Exhibit 7.02 from Form Schedule 13D (File No. 005-86326), initially filed by Tuspark Innovation Venture Limited and other filers with the Commission on July 13, 2016)
4.24	English translation of the Supplemental Agreement to the Optional Share Purchase Agreement, dated December 19, 2016, by and among 21Vianet Data Center Co., Ltd., Beijing Yiyun Network Technology Co., Ltd., Beijing 21Vianet Broad Band Data Center Co., Ltd. and the shareholders of Beijing Yiyun Network Technology Co., Ltd. (incorporated by reference to Exhibit 4.37 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 12, 2017)
4.25	English translation of the Supplemental Agreement to the Exclusive Technical Consulting and Services Agreement, dated December 19, 2016, by and among 21Vianet Data Center Co., Ltd., Beijing Yiyun Network Technology Co., Ltd., and Beijing 21Vianet Broad Band Data Center Co., Ltd. (incorporated by reference to Exhibit 4.38 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 12, 2017)
4.26	English translation of the equity interest purchase agreement dated September 27, 2017, by and among Beijing TUS Yuanchuang Technology Development Co., Ltd., a company wholly owned by Tus-Holdings, Beijing 21Vianet Broad Band Data Center Co., Ltd., WiFire Network Technology (Beijing) Co., Ltd., WiFire (Beijing) Technology Co., Ltd., Guangzhou Gehua Network Technology and Development Company Limited, Beijing Chengvishidai Network Technology Co., Ltd., Zhiboxintong (Beijing) Network Technology Co., Ltd., Beijing Fastweb Network Technology Co., Ltd. and Guangzai Wuxian (Shanghai) Network Technology Co., Ltd (incorporated by reference to Exhibit 4.30 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on April 12, 2018)

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Exhibit Number	Description of Document
4.27	English translation of the lease dated August 15, 2018 by and between the 21ViaNet Broad Band Data Center Co., Ltd. and Beijing Tuspark Harmonious Investment Development Co., Ltd. (incorporated by reference to Exhibit 4.33 from our annual report on Form 20-F (File No. 001-35126), initially filed with the Commission on March 27, 2019)
4.28*	Amended and Restated Investment Agreement dated July 24, 2019 by and among 21Vianet Group, Inc., 21Vianet DRP Investment Holdings Limited and Marble Stone Holdings Limited
4.29*	Restructuring Agreement dated July 24, 2019 by and among 21Vianet Group, Inc., 21Vianet DRP Investment Holdings Limited and Marble Stone Holdings Limited
4.30*	Amendment to Restructuring Agreement dated January 15, 2020 by and among 21Vianet Group, Inc., 21Vianet DRP Investment Holdings Limited and Marble Stone Holdings Limited
4.31*	Share Subscription Agreement dated October 14, 2019 by and between 21Vianet Group, Inc. and Personal Group Limited
4.32	Form of Note Purchase Agreement by and between 21Vianet Group, Inc. and a purchaser (incorporated by reference to Exhibit 99.2 from our Form 6-K (File No. 001-35126), initially furnished with the Commission on February 20, 2020)
8.1*	List of Subsidiaries and Principal Consolidated Affiliated Entities
11.1	Code of Business Conduct and Ethics of Registrant (incorporated by reference to Exhibit 99.1 from our F-1 registration statement (File No. 333-173292), as amended, initially filed with the Commission on April 4, 2011)
12.1*	Chief Executive Officer Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
12.2*	Chief Financial Officer Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
13.1**	Chief Executive Officer Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
13.2**	Chief Financial Officer Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
15.1*	Consent of Ernst & Young Hua Ming LLP, Independent Registered Public Accounting Firm
15.2*	Consent of Han Kun Law Offices
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document

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Exhibit Number	Description of Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed with this Annual Report on Form 20-F.

* * Furnished with Annual Report on Form 20-F.

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SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

21Vianet Group, Inc.

By: /s/ Sheng Chen
Name: Sheng Chen
Title: Executive Chairman of Board of Directors

Date: April 2, 2020

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21VIANET GROUP, INC.

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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, 2019 and 2018, 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, 2019 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, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, 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, 2019, 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 2, 2020 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 and its method for accounting for revenue from contracts with customers, the presentation of the cash flows and its method for accounting for certain equity securities in the year ended December 31, 2018.

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 since 2010.

Shanghai, the People's Republic of China

April 2, 2020

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

	Notes	As of December 31,		
		2018	2019	
		RMB	RMB	US\$
ASSETS				
Current assets:				
Cash and cash equivalents		2,358,556	1,808,483	259,772
Restricted cash		265,214	478,873	68,786
Accounts and notes receivable (net of allowance for doubtful debt of RMB70,970 and RMB67,828 (US\$9,743) as of December 31, 2018 and 2019, respectively)	5	524,305	657,158	94,395
Short-term investments	6	245,014	363,856	52,265
Prepaid expenses and other current assets	7	1,159,574	1,618,149	232,433
Amounts due from related parties	23	125,446	301,665	43,331
Total current assets		4,678,109	5,228,184	750,982
Non-current assets:				
Property and equipment, net	8	4,031,242	5,443,565	781,919
Intangible assets, net	9	355,313	410,595	58,978
Land use rights, net	10	147,493	233,154	33,490
Operating lease right-of-use assets, net	15	—	1,221,616	175,474
Goodwill	11	989,530	989,530	142,137
Restricted cash		37,251	69,821	10,029
Deferred tax assets	22	159,441	209,366	30,074
Long-term investments	12	544,323	169,653	24,369
Amounts due from related parties	23	34,424	20,654	2,967
Other non-current assets		173,591	277,568	39,870
Total non-current assets		6,472,608	9,045,522	1,299,307
Total assets		11,150,717	14,273,706	2,050,289

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

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

	Notes	As of December 31,		
		2018	2019	
		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 RMB50,000 and RMB232,323 (US\$33,371) as of December 31, 2018 and 2019, respectively)	13	50,000	234,500	33,684
Accounts and notes payable (including accounts and notes payable of the Consolidated VIEs without recourse to the primary beneficiaries of RMB258,048 and RMB211,710 (US\$30,410) as of December 31, 2018 and 2019, respectively)		389,508	303,128	43,542
Accrued expenses and other payables (including accrued expenses and other payables of the Consolidated VIEs without recourse to the primary beneficiaries of RMB392,619 and RMB622,160 (US\$89,368) as of December 31, 2018 and 2019, respectively)	14	659,320	978,935	140,613
Advances from customers (including advances from customers of the Consolidated VIEs without recourse to the primary beneficiaries of RMB670,037 and RMB1,068,692 (US\$153,508) as of December 31, 2018 and 2019, respectively)		670,037	1,068,692	153,508
Deferred revenue (including deferred revenue of the Consolidated VIEs without recourse to the primary beneficiaries of RMB51,026 and RMB52,088 (US\$7,482) as of December 31, 2018 and 2019, respectively)		57,754	57,625	8,277
Income taxes payable (including income taxes payable of the Consolidated VIEs without recourse to the primary beneficiaries of RMB8,519 and RMB8,175 (US\$1,174) as of December 31, 2018 and 2019, respectively)		13,111	48,032	6,899
Amounts due to related parties (including amounts due to related parties of the Consolidated VIEs without recourse to the primary beneficiaries of RMB51,763 and RMB56,977 (US\$8,184) as of December 31, 2018 and 2019, respectively)	23	52,328	166,935	23,979
Current portion of long-term bank borrowings (including current portion of long-term bank borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB75,284 and RMB32,500 (US\$4,668) as of December 31, 2018 and 2019, respectively)	13	75,284	32,500	4,668
Current portion of finance lease liabilities (including current portion of finance lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB219,695 and RMB220,363 (US\$31,653) as of December 31, 2018 and 2019, respectively)	15	219,695	227,115	32,623
Deferred government grants (including deferred government grants of the Consolidated VIEs without recourse to the primary beneficiaries of RMB4,173 and RMB2,595 (US\$373) as of December 31, 2018 and 2019, respectively)	17	4,173	2,595	373
Current portion of bonds payable	16	—	911,147	130,878
Current portion of operating lease liabilities (including current portion of operating lease liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of nil and RMB410,422 (US\$58,953) as of December 31, 2018 and 2019, respectively)	15	—	437,817	62,888
Total current liabilities		<u>2,191,210</u>	<u>4,469,021</u>	<u>641,932</u>

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

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

	Notes	As of December 31,		
		2018	2019	
		RMB	RMB	US\$
Non-current liabilities:				
Long-term bank borrowings (including long-term bank borrowings of the Consolidated VIEs without recourse to the primary beneficiaries of RMB112,000 and RMB79,500 (US\$11,419) as of December 31, 2018 and 2019, respectively)	13	112,000	79,500	11,419
Bonds payable	16	2,037,836	2,060,708	296,002
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 RMB852,287 and RMB549,669 (US\$78,955) as of December 31, 2018 and 2019, respectively)	15	765,993	896,927	128,836
Unrecognized tax benefits (including unrecognized tax benefits of the Consolidated VIEs without recourse to the primary beneficiaries of RMB4,938 and RMB1,991 (US\$286) as of December 31, 2018 and 2019, respectively)	22	6,677	2,443	351
Deferred tax liabilities (including deferred tax liabilities of the Consolidated VIEs without recourse to the primary beneficiaries of RMB84,568 and RMB82,725 (US\$11,883) as of December 31, 2018 and 2019, respectively)	22	157,720	202,572	29,098
Deferred government grants (including deferred government grants of the Consolidated VIEs without recourse to the primary beneficiaries of RMB11,619 and RMB5,906 (US\$848) as of December 31, 2018 and 2019, respectively)	17	11,619	5,906	848
Amounts due to related parties (including amounts due to related parties of the Consolidated VIEs without resource to the primary beneficiaries of RMB504,478 and RMB745,899 (US\$107,142) as of December 31, 2018 and 2019, respectively)	23	504,478	745,899	107,142
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 nil and RMB529,546 (US\$76,064) as of December 31, 2018 and 2019, respectively)	15	—	579,102	83,183
Total non-current liabilities		<u>3,596,323</u>	<u>4,573,057</u>	<u>656,879</u>
Total liabilities		<u>5,787,533</u>	<u>9,042,078</u>	<u>1,298,811</u>
Commitments and contingencies	30			

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

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

	Notes	As of December 31,		
		2018	2019	
		RMB	RMB	US\$
Shareholders' equity:				
Class A Ordinary shares (par value of US\$0.00001 per share; 1,200,000,000 and 1,200,000,000 shares authorized; 499,706,628 and 505,253,850 issued and outstanding as of December 31, 2018 and 2019, respectively)	27	34	34	5
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 174,649,638 issued and outstanding as of December 31, 2018 and 2019, respectively)	27	12	12	2
Class C Ordinary Shares (par value of US\$0.00001 per share; nil and 60,000 shares authorized; nil and 60,000 shares issued and outstanding as of December 31, 2018 and 2019, respectively)	27	—	—	—
Additional paid-in capital		9,141,494	9,202,567	1,321,866
Accumulated other comprehensive income	19	85,979	77,904	11,190
Statutory reserves		42,403	60,469	8,687
Accumulated deficit		(3,838,032)	(4,038,390)	(580,078)
Treasury stock	18	(337,683)	(349,523)	(50,206)
Total 21Vianet Group, Inc. shareholders' equity		<u>5,094,207</u>	<u>4,953,073</u>	<u>711,466</u>
Noncontrolling interest		268,977	278,555	40,012
Total shareholders' equity		<u>5,363,184</u>	<u>5,231,628</u>	<u>751,478</u>
Total liabilities and shareholders' equity		<u>11,150,717</u>	<u>14,273,706</u>	<u>2,050,289</u>

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

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21VIANET 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,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Net revenues				
Hosting and related services	2,975,178	3,401,037	3,788,967	544,251
Managed network services	417,527	—	—	—
Total net revenues	3,392,705	3,401,037	3,788,967	544,251
Hosting and related services	(2,130,279)	(2,456,166)	(2,849,518)	(409,308)
Managed network services	(504,016)	—	—	—
Total cost of revenues	(2,634,295)	(2,456,166)	(2,849,518)	(409,308)
Gross profit	758,410	944,871	939,449	134,943
Operating income (expenses)				
Operating income	5,439	5,027	6,862	986
Sales and marketing expenses	(256,682)	(172,176)	(206,309)	(29,634)
Research and development expenses	(149,143)	(92,109)	(88,792)	(12,754)
General and administrative expenses	(519,950)	(462,637)	(415,277)	(59,651)
(Allowance) reversal for doubtful debt	(37,427)	598	(1,557)	(224)
Impairment of receivables from equity investees	—	—	(52,142)	(7,490)
Changes in the fair value of contingent purchase consideration payables	(937)	13,905	—	—
Impairment of long-lived assets	(401,808)	—	—	—
Impairment of goodwill	(766,440)	—	—	—
Total operating expenses	(2,126,948)	(707,392)	(757,215)	(108,767)
Operating (loss) profit	(1,368,538)	237,479	182,234	26,176
Interest income	32,925	45,186	54,607	7,844
Interest expense	(185,313)	(236,066)	(345,955)	(49,693)
Impairment of long-term investment	(20,258)	—	—	—
Gain on disposal of subsidiaries	497,036	4,843	—	—
Loss on debt extinguishment	—	—	(18,895)	(2,714)
Other income	16,764	58,033	36,380	5,226
Other expenses	(17,060)	(4,103)	(5,632)	(809)
Foreign exchange loss, net	(17,153)	(81,055)	(27,995)	(4,021)
(Loss) income before income taxes and gain (loss) from equity method investments	(1,061,597)	24,317	(125,256)	(17,991)
Income tax benefits (expenses)	90,170	(24,411)	(5,437)	(781)
Gain (loss) from equity method investments	53,783	(186,642)	(50,553)	(7,261)
Net loss	(917,644)	(186,736)	(181,246)	(26,033)
Net loss (income) attributable to noncontrolling interest and redeemable noncontrolling interest	144,914	(18,329)	(1,046)	(150)
Net loss attributable to the Company's ordinary shareholders	(772,730)	(205,065)	(182,292)	(26,183)
Loss per share:				
Basic	26	RMB (1.36)	RMB (0.30)	US\$ (0.04)
Diluted	26	RMB (1.36)	RMB (0.30)	US\$ (0.04)
Shares used in loss per share computation:				
Basic	26	672,836,226	674,732,130	668,833,756
Diluted	26	672,836,226	674,732,130	668,833,756

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

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

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Net loss	(917,644)	(186,736)	(181,246)	(26,033)
Other comprehensive (loss) income, net of tax of nil:				
Foreign currency translation adjustments, net of tax of nil	(120,963)	88,652	(8,075)	(1,160)
Other comprehensive (loss) income, net of tax of nil	(120,963)	88,652	(8,075)	(1,160)
Comprehensive loss	(1,038,607)	(98,084)	(189,321)	(27,193)
Comprehensive loss (income) attributable to noncontrolling interest and redeemable noncontrolling interest	144,914	(18,329)	(1,046)	(150)
Comprehensive loss attributable to the Company's ordinary shareholders	(893,693)	(116,413)	(190,367)	(27,343)

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

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

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
CASH FLOWS FROM OPERATING ACTIVITIES				
Net loss	(917,644)	(186,736)	(181,246)	(26,033)
Adjustments to reconcile net loss to net cash generated from operating activities:				
Foreign exchange loss, net	17,153	81,055	27,995	4,021
Changes in the fair value of contingent purchase consideration payables	937	(13,905)	—	—
Gain from settlement of contingent purchase consideration	—	(500)	—	—
Depreciation and amortization	667,102	634,606	772,205	110,920
(Gain) loss on disposal of property and equipment and intangible assets	(3,285)	(7,981)	271	39
Allowance (reversal) for doubtful debt	37,427	(598)	1,557	224
Share-based compensation expense	47,129	59,538	43,916	6,308
Impairment of receivables from equity investees	—	—	52,142	7,490
Deferred income tax benefits	(128,026)	(19,776)	(64,887)	(9,320)
(Gain) loss from equity method investments	(53,783)	186,642	50,553	7,261
Distribution received from an equity method investment	—	—	20,200	2,902
Gain from disposal of equity investments without readily determinable fair value	—	(20,496)	(5,536)	(795)
Gain from disposal of equity method investment	—	(16,509)	(17,853)	(2,564)
Dividend income of equity investments without readily determinable fair values	(1,821)	(406)	—	—
Gain from disposal of subsidiaries	(497,036)	(4,843)	—	—
Impairment of long-lived assets	401,808	—	—	—
Impairment of goodwill	766,440	—	—	—
Impairment of long-term investment	20,258	—	—	—
Loss on debt extinguishment	—	—	18,895	2,714
Changes in operating assets and liabilities, net of effects of acquisitions and disposals:				
Accounts and notes receivable	18,277	(68,809)	(156,134)	(22,427)
Prepaid expenses and other current assets	(311,324)	(262,445)	(328,224)	(47,148)
Amounts due from related parties	4,436	(38,047)	11,352	1,631
Accounts and notes payables	42,468	41,380	9,185	1,319
Unrecognized tax benefits	(3,939)	(9,834)	(4,234)	(608)
Accrued expenses and other payables	270,082	77,744	77,275	11,098
Deferred revenue	(65,415)	2,001	(129)	(19)
Advances from customers	201,847	266,793	398,655	57,263
Income taxes payable	(6,548)	(198)	34,917	5,016
Deferred government grants	(4,985)	(6,643)	500	72
Amounts due to related parties	(14,356)	12,933	6,044	868
Operating lease right-of-use assets	—	—	35,503	5,100
Net cash generated from operating activities	487,202	704,966	802,922	115,332

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

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

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
CASH FLOWS FROM INVESTING ACTIVITIES				
Purchases of property and equipment	(395,998)	(435,220)	(1,248,834)	(179,384)
Purchases of intangible assets	(18,957)	(17,874)	(26,515)	(3,809)
Purchases of land use rights	—	—	(24,460)	(3,513)
Proceeds from disposal of property and equipment	5,719	15,429	2,484	357
Disposal of subsidiaries, net	(77,719)	3,389	—	—
Payments for short-term investments	(755,876)	(98,905)	(436,737)	(62,733)
Payment of loan to a third party	—	(20,000)	—	—
Payment of loans to related parties	—	—	(66,704)	(9,581)
Receipt of loans to third parties	100,000	20,413	—	—
Proceeds received from maturity of short-term investments	484,932	417,643	312,198	44,844
Proceeds from disposal of long-term investments	—	75,653	18,955	2,722
Proceeds from dividend income of equity investments without readily determinable fair values	1,821	406	—	—
Payments for long-term investments	(162,176)	(252,780)	(9,330)	(1,340)
Payments for deposit to acquire data center	—	(13,000)	(82,536)	(11,857)
Collection of deposit for acquiring data center	—	—	30,000	4,308
Receipt of deposit for disposal of subsidiaries	10,000	—	—	—
Payments for assets acquisition, net of cash acquired	(25,053)	—	(148,067)	(21,269)
Cash receipt from an assets acquisition	—	—	67,563	9,705
Net cash used in investing activities	(833,307)	(304,846)	(1,611,983)	(231,550)
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds from loan from a related party	—	44,038	—	—
Repayment of loan from a related party	—	—	(47,893)	(6,879)
Proceeds from exercise of stock options	926	435	429	62
Proceeds from issuance of ordinary shares	—	—	572	82
Repayment of 2017 Notes	(420,600)	—	—	—
Proceeds from issuance of 2020/2021 Notes (Note 16)	1,936,154	—	2,012,084	289,018
Payment of issuance cost of 2020/2021 Notes (Note 16)	(9,735)	—	(35,610)	(5,115)
Repurchase of 2020 Notes (Note 16)	—	—	(1,148,092)	(164,913)
Proceeds from long-term bank borrowings	44,440	—	—	—
Proceeds from short-term bank borrowings	70,000	69,999	234,500	33,685
Repayment of long-term bank borrowings	(94,037)	(70,643)	(85,110)	(12,224)
Repayment of short-term bank borrowings	(1,673,676)	(69,999)	(50,000)	(7,182)
Payments for purchase of property and equipment through finance leases	(199,126)	(279,886)	(333,614)	(47,921)
Repayment of loan from a third party	(100,000)	—	(67,659)	(9,719)
Rental prepayment and deposits for sales and leaseback transactions	(164,698)	(48,401)	(19,399)	(2,786)
Contribution from noncontrolling interest in subsidiaries	134,633	196,281	8,532	1,226
Prepayment for future share repurchase plan	(3,866)	—	(9,778)	(1,405)
Refund of prepayment for share repurchase plan	—	42,710	—	—
Payments for share repurchase plan	(133,066)	—	(11,840)	(1,701)
Proceeds from sales and leaseback transactions	—	—	110,000	15,801
Proceeds from discounted notes	—	95,565	—	—
Repayment of notes payable	—	—	(95,565)	(13,727)
Net cash (used in) generated from financing activities	(612,651)	(19,901)	461,557	66,302
Effect of foreign exchange rate changes on cash and cash equivalents and restricted cash	(140,298)	85,333	43,660	6,271
Net (decrease) increase in cash and cash equivalents and restricted cash	(1,099,054)	465,552	(303,844)	(43,645)
Cash and cash equivalents and restricted cash at beginning of year	3,294,523	2,195,469	2,661,021	382,232
Cash and cash equivalents and restricted cash at end of year	2,195,469	2,661,021	2,357,177	338,587

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

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

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Reconciliation of cash and cash equivalents and restricted cash to the consolidated balance sheets				
Cash and cash equivalents	1,949,631	2,358,556	1,808,483	259,772
Restricted cash-current	242,494	265,214	478,873	68,786
Restricted cash-non-current	3,344	37,251	69,821	10,029
Total cash and cash equivalents and restricted cash	<u>2,195,469</u>	<u>2,661,021</u>	<u>2,357,177</u>	<u>338,587</u>
Supplemental disclosures of cash flow information:				
Income taxes paid	(55,076)	(57,407)	(41,684)	(5,988)
Interest paid	(96,846)	(160,984)	(215,889)	(31,011)
Interest received	28,857	50,793	59,054	8,483
Supplemental disclosures of non-cash activities:				
Right-of-use assets obtained in exchange for new operating lease liabilities	—	—	618,126	88,788
Purchase of property and equipment through finance leases	453,786	884,871	357,573	51,362
Purchase of property and equipment included in accrued expenses and other payables	(15,750)	21,918	344,248	49,448
Purchase of intangible assets included in accrued expenses and other payables	1,354	870	(1,642)	(236)
Contingent consideration related to the acquisitions included in amounts due to related parties and accrued expenses and other payables	(937)	36,734	—	—

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

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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	Noncontrolling interest	Total shareholders' equity
Balance as of January 1, 2017		679,857,606	(204,557)	45	9,015,846	118,290	64,622	(2,869,031)	6,125,215	25,802	6,151,017
Consolidated net loss		—	—	—	—	—	—	(772,730)	(772,730)	(3,018)	(775,748)
Cumulative adjustment for changes in accounting principles		—	—	—	—	—	—	(13,425)	(13,425)	—	(13,425)
Contribution from noncontrolling interest in a subsidiary		—	—	—	—	—	—	—	—	134,633	134,633
Foreign exchange difference		—	—	—	—	(120,963)	—	—	(120,963)	—	(120,963)
Issuance of new shares for share option exercise and restricted share units vested	27	3,119,052	—	—	—	—	—	—	—	—	—
Share-based compensation		—	—	—	105,532	—	—	—	105,532	—	105,532
Share issued to depository bank	26	9,000,000	—	1	(1)	—	—	—	—	—	—
Appropriation of statutory reserves	25	—	—	—	—	—	2,083	(2,083)	—	—	—
Appropriation of dividend		—	—	—	—	—	—	—	—	(5,946)	(5,946)
Disposal of subsidiaries		—	—	—	—	—	(27,969)	27,969	—	—	—
Increase in accretion of redeemable noncontrolling interests	28	—	—	—	(141,896)	—	—	—	(141,896)	—	(141,896)
Share repurchase	18	(20,690,892)	(133,126)	—	—	—	—	—	(133,126)	—	(133,126)
Share options exercised	21	332,754	—	—	926	—	—	—	926	—	926
Restricted share units vested		10,576,398	—	—	—	—	—	—	—	—	—
Settlement of share options with shares held by depository bank		(10,909,152)	—	—	—	—	—	—	—	—	—
Balance as of December 31, 2017		671,285,766	(337,683)	46	8,980,407	(2,673)	38,736	(3,629,300)	5,049,533	151,471	5,201,004

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

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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	Accumulated other comprehensive (loss) income	Statutory reserves	Accumulated deficit	Total 21Vianet Group, Inc. shareholders' equity	Noncontrolling 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	27	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 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

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

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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	Accumulated other comprehensive income (loss)	Statutory reserves	Accumulated deficit	Total 21Vianet Group, Inc. shareholders' equity	Noncontrolling 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)	—	1,046	(181,246)
Contribution by noncontrolling interest		—	—	—	—	—	—	—	—	8,532	8,532
Foreign exchange difference		—	—	—	24	(8,075)	—	—	(8,051)	—	(8,051)
Issuance of new shares	27	60,000	—	—	572	—	—	—	572	—	572
Issuance of new shares for share option exercise and restricted share units vested	27	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	21	33,869	—	—	429	—	—	—	429	—	429
Restricted share units vested		5,136,306	—	—	—	—	—	—	—	—	—
Settlement of share options with shares held by depository bank		(5,170,175)	—	—	—	—	—	—	—	—	—
Balance as of December 31, 2019		<u>679,963,488</u>	<u>(349,523)</u>	<u>46</u>	<u>9,202,567</u>	<u>77,904</u>	<u>60,469</u>	<u>(4,038,390)</u>	<u>4,953,073</u>	<u>278,555</u>	<u>5,231,628</u>
Balance as of December 31, 2019 US\$			<u>(50,206)</u>	<u>7</u>	<u>1,321,866</u>	<u>11,190</u>	<u>8,687</u>	<u>(580,078)</u>	<u>711,466</u>	<u>40,012</u>	<u>751,478</u>

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

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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 after the disposal of subsidiaries which are engaged in managed network services in September 2017 (Note 4).

(a) As of December 31, 2019, 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 (“21 Vianet 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
21Vianet Mobile Limited (“21V Mobile”)	April 30, 2013	Hong Kong	100%	Investment holding and provision of telecommunication services
Joytone Infotech Co., Ltd. (“SZ Zhuoaiyi”) ⁽¹⁾	April 30, 2013	PRC	100%	Provision of technical and consultation services
21Vianet Ventures Limited (“Ventures”) Abitcool (China) Broadband Inc. (“aBitCool DG”) ⁽¹⁾	March 6, 2014 June 13, 2014	Hong Kong PRC	100% 100%	Investment holding 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
Dermot Holdings Limited (“Dermot BVT”) ⁽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

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

1. ORGANIZATION (CONTINUED)

Entity	Date of incorporation/ acquisition	Place of incorporation	Percentage of direct ownership by the Company Direct	Principal activities
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
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
Shanghai Blue Cloud Technology Co., Ltd. ("SH Blue Cloud") ^{(1) / (2)}	March 21, 2013	PRC	—	Provision of Office 365 and Windows Azure platform 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. ^{(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
Shanghai Hujiang Songlian Technology Co., Ltd. ("Hujiang Songlian") ^{(1) / (2)}	December 17, 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 19, 2019	PRC	—	Provision of internet data center services
Held directly by DYG and LF Xunchi:				
Shenzhen Diyixian Telecommunication Co., Ltd. ("SZ DYG") ⁽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).

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

1. ORGANIZATION (CONTINUED)

- (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 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:

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.

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.

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.

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 was subsequently reassigned to 21Vianet Group, Inc. in September 2010.

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

1. ORGANIZATION (CONTINUED)

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, 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.

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.

The Company also controls two other VIEs, namely BJ iJoy and WiFire Network through their primary beneficiary, aBitCool DG and SZ Zhuoaiyi, wholly owned subsidiaries of the Company. The key terms of the VIE Agreements in relation to BJ iJoy and WiFire Network are similar to those summarized above.

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 aBitCool DG and SZ Zhuoaiyi as the primary beneficiary.

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.

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

1. ORGANIZATION (CONTINUED)

(c) VIE disclosures

Except for certain property with carrying amounts of RMB219,736 (US\$31,564) 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 Warburg 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).

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

1. ORGANIZATION (CONTINUED)

The following tables represent the financial information of the Consolidated VIEs as of December 31, 2018 and 2019 and for the years ended December 31, 2017, 2018 and 2019 before eliminating the intercompany balances and transactions between the Consolidated VIEs and other entities within the Company:

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
ASSETS			
Current assets:			
Cash and cash equivalents	548,921	591,503	84,964
Restricted cash	203,103	260,961	37,485
Accounts receivable (net of allowance for doubtful debt of RMB69,723 and RMB66,416 (US\$9,540) as of December 31, 2018 and 2019, respectively)	375,515	513,440	73,751
Short-term investments	94,000	—	—
Prepaid expenses and other current assets	1,013,563	1,371,564	197,013
Amounts due from related parties	123,726	57,982	8,328
Total current assets	2,358,828	2,795,450	401,541
Non-current assets:			
Property and equipment, net	3,103,995	3,580,341	514,284
Intangible assets, net	47,121	151,722	21,794
Land use rights, net	60,078	58,588	8,416
Operating lease right-of-use assets, net	—	1,144,846	164,447
Goodwill	302,647	302,647	43,473
Restricted cash	33,729	66,119	9,497
Deferred tax assets	156,412	180,959	25,993
Amounts due from related parties	13,514	20,654	2,967
Other non-current assets	162,392	262,685	37,732
Long-term investments	219,005	189,571	27,230
Total non-current assets	4,098,893	5,958,132	855,833
Total assets	6,457,721	8,753,582	1,257,374
Current liabilities:			
Short-term bank borrowings	50,000	232,323	33,371
Accounts and notes payable	258,048	211,710	30,410
Accrued expenses and other payables	392,619	622,160	89,368
Advance from customers	670,037	1,068,692	153,508
Deferred revenue	51,026	52,088	7,482
Income tax payable	8,519	8,175	1,174
Amounts due to inter-companies ⁽¹⁾	2,117,097	2,786,838	400,304
Amounts due to related parties	51,763	56,977	8,184
Current portion of finance lease liabilities	219,695	220,363	31,653
Current portion of long-term bank borrowings	75,284	32,500	4,668
Deferred government grants	4,173	2,595	373
Current portion of operating lease liabilities	—	410,422	58,953
Total current liabilities	3,898,261	5,704,843	819,448

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

1. ORGANIZATION (CONTINUED)

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Non-current liabilities:			
Amounts due to inter-companies ⁽¹⁾	1,020,972	1,020,972	146,653
Amounts due to related parties	504,478	745,899	107,142
Long-term bank borrowings	112,000	79,500	11,419
Non-current portion of finance lease liabilities	852,287	549,669	78,955
Unrecognized tax benefits	4,938	1,991	286
Deferred tax liabilities	84,568	82,725	11,883
Deferred government grants	11,619	5,906	848
Non-current portion of operating lease liabilities	—	529,546	76,064
Total non-current liabilities	2,590,862	3,016,208	433,250
Total liabilities	6,489,123	8,721,051	1,252,698

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Net revenues	2,578,893	2,532,854	2,858,176	410,551
Net (loss) profit	(567,395)	52,986	111,592	16,029

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Net cash generated from operating activities	448,051	693,620	495,308	71,147
Net cash (used in) generated from investing activities	(604,507)	132,522	(1,247,764)	(179,230)
Net cash generated from (used in) financing activities	230,921	(423,467)	885,286	127,163
Net increase in cash and cash equivalents and restricted cash	74,465	402,705	132,830	19,080

- (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.

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

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, estimating the useful lives of long-lived assets, determining the fair value of equity investments, accounting for investments and the subsequent impairment assessment, determining the provision for accounts and other receivables, determining the valuation allowance for deferred tax assets, accounting for share-based compensation arrangements, goodwill and long-lived assets impairment assessment, measurement of right-of-use assets and lease liabilities and determining the standalone lease price. 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 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 RMB6.9618 on December 31, 2019, the last business day in fiscal year 2019, 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.

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

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(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 Company adopted ASU 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash*, effective January 1, 2018 using the retrospective transition method and included all restricted cash with cash and cash equivalent when reconciling beginning-of-period and end-of-period total amounts presented in the consolidated statements of cash flows.

(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

Accounts receivable 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. An accounts receivable is written off after all collection effort has ceased.

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

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(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 date 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 RMB9,238, RMB6,093, and RMB13,189 (US\$1,894) for the years ended December 31, 2017, 2018 and 2019, 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*	31.9 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	4 years

* Acquired in the acquisitions of subsidiaries.

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

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(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 sheet. 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.

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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(n) Long-term investments

The Company's long-term investments consist of equity investments without readily determinable fair value, equity method investments and available-for-sale debt investments.

Prior to adopting ASC Topic 321, *Investments—Equity Securities* ("ASC 321") on January 1, 2018, the Company carries at cost its investments in investees that do not have readily determinable fair value and over which the Company does not have significant influence, in accordance with ASC Subtopic 325-20, *Investments—Other: Cost Method Investments* ("ASC 325-20"). The Company only adjusts the carrying value of such investments for other-than-temporary decline in fair value and for distribution of earnings that exceed the Company's share of earnings since its investment.

Management regularly evaluates the impairment of equity investments without readily determinable fair value based on the performance and financial position of the investee as well as other evidence of market value. Such evaluation includes, but is not limited to, reviewing the investee's cash position, recent financing, projected and historical financial performance, cash flow forecasts and financing needs. An impairment loss is recognized in earnings equal to the excess of the investment's cost over its fair value at the balance sheet date of the reporting period for which the assessment is made. The fair value would then become the new cost basis of the investment.

The Company adopted ASC 321 on January 1, 2018 and the cumulative effect of adopting the new standard on opening retained deficit is nil. Pursuant to 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.

Pursuant to ASC 321, 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.

Available-for-sale debt investments are convertible debt instruments issued by private companies, which are measured at fair value, with unrealized gains or losses recorded in accumulated other comprehensive income.

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.

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21VIANET GROUP, INC.
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(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. In 2017, there were two reporting units consisting of two service lines namely hosting and related services and managed network services. The goodwill was reassigned to the two reporting units using a relative fair value allocation approach. After the disposal of WiFire Entities and Aipu Group as defined in Note 4 in September 2017, the Company determined that there is only hosting and related services remained and hence the Company as a whole is one reporting unit as of December 31, 2018 and 2019.

The Company early adopted ASU No. 2017-04, *Simplifying the Test for Goodwill Impairment* ("ASU 2017-04"), which simplifies the accounting for goodwill impairment by eliminating Step two from the goodwill impairment test. Under the new guidance, if a reporting unit's carrying amount exceeds its fair value, an entity will record an impairment charge based on that difference. The impairment charge will be limited to the amount of goodwill allocated to that reporting unit. Fair value is primarily determined by computing the future discounted cash flows expected to be generated by the reporting unit.

Immediately before the disposal of WiFire Entities and Aipu Group in September 2017, the Company completed its impairment test for goodwill in managed network services. The Company determined the fair value of the reporting unit using the income approach based on the discounted expected cash flows associated with the reporting unit. The discounted cash flows for the reporting unit were based on five-year projections. Cash flow projections were based on past experience, actual operating results and management best estimates about future developments as well as certain market assumptions. Cash flows after five years were estimated using a terminal value calculation, which considered terminal value growth at 3%, considering the long-term revenue growth for entities in a similar industry in the PRC. The discount rate of approximately 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. The resulting fair value of the reporting unit significant lower than its carrying value, the Company fully impaired goodwill in managed network services and recorded an amount of RMB766 million for impairment loss of goodwill as of December 31, 2017.

Pursuant to ASC 350, in 2018 and 2019, 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 and 2019.

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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(p) Impairment of long-lived assets

The Company evaluates its long-lived assets or asset group, including intangible assets with finite lives, for impairment whenever events or changes in circumstances (such as a significant adverse change to market conditions that will impact the future use of the assets) indicate that the carrying amount of an asset or a group of long-lived assets may not be recoverable. When these events occur, the Company evaluates for impairment by comparing the carrying amount of the assets to future undiscounted net cash flows expected to result from the use of the assets and their eventual disposition. If the sum of the expected undiscounted cash flow is less than the carrying amount of the assets, the Company would recognize an impairment loss based on the excess of the carrying amount of the asset group over its fair value. Fair value is generally determined by discounting the cash flows expected to be generated by the assets, when the market prices are not readily available for the long-lived assets.

As of December 31, 2017, due to continued operational losses, the Company recorded the long-lived assets impairment amounting to RMB170,695 and RMB231,113 for the asset groups of Aipu Group and WiFire Entities, respectively, resulting from excess of the carrying amount of the asset groups over their fair values of the two asset groups, respectively. The Company determined the fair value of the asset groups using the income approach based on the discounted expected cash flows associated with the respective asset groups. The discounted cash flows for the asset groups were based on seven year projections for Aipu and five years for WiFire Entities, which are consistent with the remaining useful lives of its principal assets. Cash flow projections were based on the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. The discount rate of approximately 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 assets groups as there was no impairment indicator identified.

The impairment loss reduced the carrying amount of the long-lived assets of a group on a pro-rata basis using the relative carrying amount of those assets.

In 2018 and 2019, the Company performed a qualitative assessment for impairment on whether events or changes in circumstances indicate that the carrying amount of an asset or a group of long-lived assets might not be recoverable. No impairment was recognized for the year ended December 31, 2018 and 2019 as there was no impairment indicator identified.

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

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Impairment of equipment	237,956	—	—	—
Impairment of intangible assets	163,852	—	—	—

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2IVIANET GROUP, INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)
(Amounts in thousands of RMB and US\$, unless otherwise stated)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(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 bank borrowings, available-for-sale investments, liability classified restricted share units ("RSU"). Other than the bonds payable and long-term bank borrowings, 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 bank borrowings approximate their fair values since they bear interest rates which approximate market interest rates.

(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 establish 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:

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

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(r) Revenue recognition (continued)

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 contract 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.

Cloud services allow businesses to run their applications over the internet using the IT infrastructure. Revenue from Cloud services consisted of incentive revenue from Microsoft upon completion of certain conditions and a fixed percentage amount based on gross sales price generated from Cloud services provided to end customers. Cloud services are generally provided to end customers for a fixed amount over the contract period and the related revenues are recognized on a straight-line basis over the contract period. For certain contracts where considerations are based on the usage of the cloud resources, the related revenues are recognized based on the consumption at the predetermined rate as the services are rendered throughout the contract term. The Company records revenue for Cloud service on a net basis.

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, 2018 and 2019, the Company has deferred revenue amounting up to RMB57,754 and RMB57,625 (US\$8,277), respectively. Revenue recognized from opening deferred revenue balance was RMB46,996 (US\$6,751) for the year ended December 31, 2019.

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.

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21VIANET GROUP, INC.
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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(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 RMB7,773, RMB7,968 and RMB6,095 (US\$875) for the years ended December 31, 2017, 2018 and 2019, 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.

(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 are 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.

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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(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, 2017, 2018 and 2019, was as follows:

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Interest expense and amortization cost of bonds payable	63,354	150,098	223,832	32,151
Interest expense on bank borrowings	87,916	19,395	14,212	2,041
Interest expense on finance lease	63,757	79,935	120,185	17,263
Total interest costs	215,027	249,428	358,229	51,455
Less: Total interest costs capitalized	(29,714)	(13,362)	(12,274)	(1,762)
Interest expense, net	185,313	236,066	345,955	49,693

(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 Company records a valuation allowance against deferred tax assets if, based on the weight of available evidence, it is more-likely-than-not that some portion, or all, of the deferred tax assets will not be realized. 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 benefits (expenses)" in the consolidated statements of operations.

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21VIANET GROUP, INC.
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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(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.

For the performance bonuses that the employees can elect to settle in cash and/or restricted shares of the Company (“Share-Settled Bonus”), the Company estimates the portion of the arrangement to be settled in shares based on its past settlement practices and classifies such portion as a liability in accordance with ASC Topic 480, *Distinguishing Liabilities from Equity* (“ASC 480”) as the Company can only settle the Share-Settled Bonus by issuing variable number of shares until the settlement date. The Company remeasures the fair value of such liability at each reporting period end through earnings until the underlying shares were approved and granted to the employees and accounted for the granted restricted shares unit as equity award. The original cash bonus amount continues to be classified as a liability within “Accrued expenses and other payables” in the consolidated balance sheets.

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, 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 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.

In January, 2017, the Company made revisions to the Share-Settled Bonus to remove the option to settle bonus accrued in 2017. For the Share-Settled Bonus accrued in 2016 which were elected to be settled in shares, the Company issued shares to settle all the Share-Settled Bonus as of December 31, 2017.

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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(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. Diluted loss per share is calculated by dividing net loss attributable to ordinary shareholders 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. For the contracts that may be settled in ordinary shares or in cash at the election of the counterparty, the more dilutive option of cash or share settlement is used for the purposes of diluted loss per share calculation, pursuant to which share settlement requires the number of shares that would be required to settle the contract be included in the denominator whereas cash settlement requires an adjustment to be made to the numerator for any changes in income or loss that would result as if the contract had been classified as an asset or a liability for accounting purposes during the period for a contract that is classified as equity for accounting purposes, 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. 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, 2017, 2018 and 2019, the Company repurchased 3,448,482, nil and 242,830 ADSs for a consideration of RMB133,126, nil and RMB11,840 (US\$1,701), respectively.

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(Amounts in thousands of RMB and US\$, unless otherwise stated)

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(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 historically had two 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 and managed network services separately when making decisions on allocating resources and assessing performance of the Company. Hosting and related services business focuses primarily on colocation, interconnectivity, cloud, VPN, hybrid IT and other value-added services. Managed network services focuses on businesses that primarily utilize bandwidth such as content delivery network ("CDN") service, hosting area network services and last-mile wired broadband service.

In September 2017, the Company disposed WiFire Entities and Aipu Group, which are primarily engaged in the managed network services. After the disposal, the Company has only one hosting and related services remained and the CODM reviews the operation result of the Company as a whole. As of December 31, 2018 and 2019, the Company only had one reporting segment.

(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.

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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

(ff) Recent accounting pronouncements

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments — Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments* (“ASU 2016-13”). ASU 2016-13 changes the impairment model for most financial assets and certain other instruments. The standard will replace “incurred loss” approach with an “expected loss” model for instruments measured at amortized cost. For available-for-sale debt securities, entities will be required to record allowances rather than reduce the carrying amount, as they do today under the other-than-temporary impairment model. The standard is effective for public business entities for annual periods beginning after December 15, 2019, and interim periods therein. The Company does not currently anticipate the adoption of this ASU to have a material impact to its consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement* (“ASU 2018-13”). ASU 2018-13 modifies the disclosure requirements for fair value measurements by removing, modifying, or adding certain disclosures. The amendments in ASU 2018-13 will be effective for the Company beginning after January 1, 2020 including interim periods within the year. Early adoption is permitted. An entity is permitted to early adopt any removed or modified disclosures upon issuance of ASU No. 2018-13 and delay adoption of the additional disclosures until their effective date. The Company does not expect the impact of this guidance to have a material impact on the Company’s consolidated financial statements.

In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*. This update simplifies the accounting for income taxes as part of the FASB’s overall initiative to reduce complexity in accounting standards. The amendments include removal of certain exceptions to the general principles of ASC 740, Income taxes, and simplification in several other areas such as accounting for a franchise tax (or similar tax) that is partially based on income. The update is effective in fiscal years beginning after December 15, 2020, and interim periods therein, and early adoption is permitted. Certain amendments in this update should be applied retrospectively or modified retrospectively, all other amendments should be applied prospectively. The Company does not expect the impact of this guidance to have a material impact on the Company’s 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, 2018 and 2019, the aggregate amount of cash and cash equivalents, restricted cash and short-term investments of RMB1,131,588 and RMB1,171,075 (US\$168,214), respectively, were held at major financial institutions located in the PRC, and US\$ 258,083 and US\$222,638 (RMB1,549,958), 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 accession 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.

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3. CONCENTRATION OF RISKS (CONTINUED)

(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%, 19% and 21% of the Company's total bandwidth and cabinet resources for the years ended December 31, 2017, 2018 and 2019, respectively.
- (iii) **Customer Risk**—The success of the Company's business going forward will rely in part on Group'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 in the year ended December 31, 2019. 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 3% of the Company's revenues in any given year but in the aggregate, they contributed approximately 2%, 4% and 4% of the Company's total revenues for the years ended December 31, 2017, 2018 and 2019, 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.

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3. CONCENTRATION OF RISKS (CONTINUED)

(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 (5.8)%, 5.0% and 1.6% in the years ended December 31, 2017, 2018 and 2019, 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.

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4. ACQUISITION AND DISPOSAL OF SUBSIDIARIES

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 (US\$14,113) 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, 2019, the condition of the last payment of the total consideration was not yet met. RMB30,000 (US\$4,309) 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	US\$
Net assets acquired:		
Operating permits (Note 9)	100,380	14,419
Cash and cash equivalents	59	8
Other current assets	9,625	1,383
Right-of-use assets	129,937	18,664
Other current liabilities	(16,714)	(2,401)
Lease liabilities	(129,937)	(18,664)
Deferred tax liabilities	(25,095)	(3,605)
Total consideration in cash	<u>68,255</u>	<u>9,804</u>

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4. ACQUISITION AND DISPOSAL OF SUBSIDIARIES (CONTINUED)

Acquisitions in 2019 (continued)

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:

	<u>RMB</u>	<u>US\$</u>
Net assets acquired:		
Property and land use right	150,880	21,672
Construction-in-progress	465	67
Cash and cash equivalents	67,563	9,705
Other current assets	1,333,329	191,521
Other current liabilities	(1,203,894)	(172,929)
Deferred tax liabilities	(33,096)	(4,754)
Total consideration*	<u>315,247</u>	<u>45,282</u>

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

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21VIANET GROUP, INC.
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4. ACQUISITION AND DISPOSAL OF SUBSIDIARIES (CONTINUED)

Acquisitions in 2019 (continued)

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 (US\$11,491). 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	US\$
Net assets acquired:		
Construction-in-progress	158,471	22,763
Equipment	13	2
Cash and cash equivalents	129	18
Other current assets	11,840	1701
Other current liabilities	(88,830)	(12,760)
Deferred tax liabilities	(1,623)	(233)
Total consideration in cash	<u>80,000</u>	<u>11,491</u>

Disposals in 2017

In September 2017, six wholly-owned subsidiaries engaged in CDN, hosting area network services and route optimization businesses, namely Guangzhou Gehua Network Technology Development Co., Ltd., CYSD, Zhiboxintong (Beijing) Network Technology Co., Ltd., WiFire BJ, BJ Fastweb and SH Guotong (collectively, the “WiFire Entities”) and Sichuan Aipu Network Co., Ltd. (“SC Aipu”) and its affiliates (collectively, the “Aipu Group”), which are engaged in the last-mile broadband business, were deconsolidated by the Company.

Disposal of WiFire Entities

In September 2017, the Company transferred 66.67% of the equity interest in the WiFire Entities for a nominal consideration of RMB6 yuan for each of the WiFire Entities to Beijing TUS Yuanchuang Technology Development Co., Ltd., a wholly-owned subsidiary of Tus-Holdings, the controlling shareholder of the Company. Upon completion of disposal, the Company accounted for the remaining 33.33% of equity interest in the WiFire Entities as equity method investments under ASC 323-10 for its ability to exercise significant influence in the WiFire Entities.

Disposal of Aipu Group

In September 2017, the Company transferred two shares in SC Aipu to Mr. Jian Li, the Co-CEO and a director of SC Aipu, for a nominal consideration of RMB1 yuan. Immediately after the disposal, the Company's ownership in SC Aipu changed from 50% equity interest plus one share to 50% equity interest minus one share and lost control. The Company accounted for the remaining equity interest as equity method investment for its ability to exercise significant influence in the Aipu Group.

Subsequently in December 2017, the Company transferred all the remaining 50% equity interest minus one share in SC Aipu to Tibet Xingtao Culture Communications Co., Ltd., one of SC Aipu's shareholders, for a nominal consideration of RMB1 yuan.

In addition to the impairment losses for long-lived assets and goodwill of RMB401,808 and RMB766,440, respectively, recognized in relation to WiFire Entities and Aipu Group before the disposal, the Company recognized a gain on disposal of WiFire Entities and Aipu Group of RMB497,036 for the year ended December 31, 2017.

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5. ACCOUNTS AND NOTES RECEIVABLE, NET

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

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Accounts receivable	592,669	722,840	103,830
Notes receivable	2,606	2,146	308
Allowance for doubtful debt	(70,970)	(67,828)	(9,743)
	<u>524,305</u>	<u>657,158</u>	<u>94,395</u>

As of December 31, 2018 and 2019, 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,		
	2018	2019	
	RMB	RMB	US\$
Balance at beginning of the year	73,656	70,970	10,194
Additional provision charged to expense	315	485	70
Write-off of accounts receivable	(3,001)	(3,627)	(521)
Balance at the end of the year	<u>70,970</u>	<u>67,828</u>	<u>9,743</u>

6. SHORT-TERM INVESTMENTS

Short-term investments consisted of the following as of December 31, 2018 and 2019:

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Time deposits	<u>245,014</u>	<u>363,856</u>	<u>52,265</u>

The Company recorded interest income related to its short-term investments amounting to RMB4,021, RMB7,303 and RMB8,687 (US\$1,248) for the years ended December 31, 2017, 2018 and 2019, respectively, in the consolidated statements of operations.

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7. PREPAID EXPENSES AND OTHER CURRENT ASSETS

Prepaid expenses and other current assets consisted of the following:

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Prepaid expenses	565,710	878,155	126,139
Tax recoverables	421,654	570,913	82,007
Staff advances	10,730	1,866	268
Interest receivables	12,037	14,359	2,063
Deposits	39,971	17,391	2,498
Loan to third parties	58,909	73,557	10,565
Others	50,563	61,908	8,893
	<u>1,159,574</u>	<u>1,618,149</u>	<u>232,433</u>

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,		
	2018	2019	
	RMB	RMB	US\$
At cost:			
Property	753,319	899,609	129,221
Leasehold improvements	932,896	1,458,749	209,536
Computer and network equipment	3,260,336	3,539,709	508,447
Optical fibers	142,723	142,723	20,501
Office equipment	24,390	22,102	3,175
Motor vehicles	1,841	2,308	331
	<u>5,115,505</u>	<u>6,065,200</u>	<u>871,211</u>
Less: Accumulated depreciation	<u>(1,870,640)</u>	<u>(2,514,800)</u>	<u>(361,228)</u>
	<u>3,244,865</u>	<u>3,550,400</u>	<u>509,983</u>
Construction-in-progress	<u>786,377</u>	<u>1,893,165</u>	<u>271,936</u>
	<u>4,031,242</u>	<u>5,443,565</u>	<u>781,919</u>

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8. PROPERTY AND EQUIPMENT, NET (CONTINUED)

Depreciation expense was RMB523,500, RMB566,491 and RMB696,528 (US\$100,050) for the years ended December 31, 2017, 2018 and 2019, respectively, and were included in the following captions:

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Cost of revenues	458,655	520,791	644,108	92,520
Sales and marketing expenses	3,188	986	2,107	303
General and administrative expenses	41,675	28,727	30,110	4,325
Research and development expenses	19,982	15,987	20,203	2,902
	<u>523,500</u>	<u>566,491</u>	<u>696,528</u>	<u>100,050</u>

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,		
	2018	2019	
	RMB	RMB	US\$
Property	365,353	365,353	52,480
Computer and network equipment	719,676	639,311	91,831
Optical fibers	<u>142,723</u>	<u>142,723</u>	<u>20,501</u>
	1,227,752	1,147,387	164,812
Less: Accumulated depreciation	<u>(291,579)</u>	<u>(408,196)</u>	<u>(58,634)</u>
	936,173	739,191	106,178
Construction-in-progress	<u>576,022</u>	<u>659,014</u>	<u>94,661</u>
	<u>1,512,195</u>	<u>1,398,205</u>	<u>200,839</u>

Depreciation of property, computer and network equipment and optical fibers under finance leases was RMB92,920, RMB170,264 and RMB216,664 (US\$31,122) for the years ended December 31, 2017, 2018 and 2019, respectively.

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

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Property	140,393	137,585	19,763
Leasehold improvements	71,337	66,162	9,504
Computer and network equipment	74,822	—	—
Office equipment	<u>44</u>	<u>—</u>	<u>—</u>

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)
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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	Platform software	Non- compete agreements	Internal use software	Total
	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB
Intangible assets, net January 1, 2018	50,629	77,141	—	11,750	137,882	4,268	20,144	96,404	683	154	2,060	401,115
Additions	18,744	—	—	—	—	—	—	—	—	—	6,093	24,837
Disposals	(6,772)	—	—	—	—	—	—	—	—	—	—	(6,772)
Foreign currency translation difference	364	3,884	—	—	—	—	—	—	—	—	—	4,248
Amortization expense	(15,711)	(8,117)	—	(6,588)	(24,921)	(385)	(3,074)	(5,813)	(683)	(110)	(2,713)	(68,115)
Intangible assets, net December 31, 2018	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
Intangible assets, net December 31, 2019 (US\$)	6,137	9,354	13,968	—	12,646	503	2,010	12,178	—	—	2,182	58,978

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9. INTANGIBLE ASSETS, NET (CONTINUED)

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. 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 in the assets acquisition of BJ Shuhai (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 32 years.

Amortization expenses were approximately RMB143,602, RMB68,115 and RMB71,028 (US\$10,203) for the years ended December 31, 2017, 2018 and 2019, respectively.

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

	RMB	US\$
2020	59,115	8,491
2021	55,400	7,958
2022	50,005	7,183
2023	34,274	4,923
2024	13,820	1,985
	<u>212,614</u>	<u>30,540</u>

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,		
	2018	2019	
	RMB	RMB	US\$
Cost	159,494	249,804	35,882
Accumulated amortization	(12,001)	(16,650)	(2,392)
Land use rights, net	<u>147,493</u>	<u>233,154</u>	<u>33,490</u>

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

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Land use rights	<u>16,403</u>	<u>15,989</u>	<u>2,297</u>

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11. GOODWILL

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

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Balance as of January 1	1,755,970	989,530	989,530	142,137
Impairment	(766,440)	—	—	—
Balance as of December 31	<u>989,530</u>	<u>989,530</u>	<u>989,530</u>	<u>142,137</u>

In September 2017, goodwill included in managed network services reporting unit was fully impaired immediately before disposal of WiFire Entities and Aipu Group. As of December 31, 2017, no impairment loss of goodwill in hosting and related services was recorded.

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

12. LONG-TERM INVESTMENTS

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

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Equity investments without readily determinable fair values	51,410	43,824	6,295
Equity method investments	490,376	124,116	17,828
Available-for-sale debt investments	2,537	1,713	246
	<u>544,323</u>	<u>169,653</u>	<u>24,369</u>

Equity investments without readily determinable fair values

The Company disposed equity investments without readily determinable fair value at a consideration of RMB26,653 and RMB13,122 (US\$1,885) in 2018 and 2019, respectively.

The investment income comprised of dividend income of RMB406 and RMB461 (US\$66), and disposal gain of RMB20,496 and RMB5,536 (US\$795) for the years ended December 31, 2018 and 2019, respectively.

The Company recorded an impairment loss of long-term investment amounting RMB20,258, nil and nil for the years ended December 31, 2017, 2018 and 2019, respectively.

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12. LONG-TERM INVESTMENTS (CONTINUED)Equity method investments:

	As of December 31, 2017			Increase (decrease) during the year ended December 31, 2018			As of December 31, 2018			
	Cost of investments	Share equity gain (loss)	Investments in equity investee	Cost of investments	Share equity loss	Derecognize of share equity loss	Cost of investments	Share equity gain (loss)	Investments in equity investee	Investments in equity investee
	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	RMB	US\$
Yizhuang Fund	101,000	176,036	277,036	—	(150,355)	—	101,000	25,681	126,681	18,425
Unis Tech	49,000	(12,961)	36,039	(49,000)	(3,548)	16,509	—	—	—	—
Shihua DC Holdings	147,176	(9,429)	137,747	219,447	(24,229)	—	366,623	(33,658)	332,965	48,428
Jingliang Inter Cloud	—	—	—	6,000	(34)	—	6,000	(34)	5,966	868
Jingliang Century Cloud	—	—	—	4,000	—	—	4,000	—	4,000	582
Huaye Cloud	—	—	—	23,333	(6,319)	—	23,333	(6,319)	17,014	2,474
ZJK Energy	—	—	—	5,907	(2,157)	—	5,907	(2,157)	3,750	545
WiFire Entities	15,000	(15,000)	—	—	—	—	15,000	(15,000)	—	—
	<u>312,176</u>	<u>138,646</u>	<u>450,822</u>	<u>209,687</u>	<u>(186,642)</u>	<u>16,509</u>	<u>521,863</u>	<u>(31,487)</u>	<u>490,376</u>	<u>71,322</u>

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12. LONG-TERM INVESTMENTS (CONTINUED)

Equity method investments (continued):

	As of December 31, 2018			Increase (decrease) during the year ended December 31, 2019			As of December 31, 2019		
	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	US\$
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
	<u>521,863</u>	<u>(31,487)</u>	<u>490,376</u>	<u>(351,958)</u>	<u>(34,263)</u>	<u>19,961</u>	<u>169,905</u>	<u>(45,789)</u>	<u>124,116</u>

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12. LONG-TERM INVESTMENTS (CONTINUED)

In April 2012, 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 with an amount of RMB50,500. In December 2013, the Company made the second tranche of investment of another amount of RMB50,500 in the Yizhuang Fund, and held 27.694% of the investee as of December 31, 2017, 2018 and 2019. 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, the Company received distribution from Yizhuang Fund as return on investments with an amount of RMB20,200 (US\$2,902).

In June 2016, the Company through its subsidiary, 21Vianet Beijing, and a related company jointly set up Unisplendour-Vianet Technology Inc. (“Unis Tech”). The Company injected capital of RMB49,000 to acquire 49% of equity interest in Unis Tech with the ability to exercise significant influence. In March 2018, the Company disposed all its equity interests in the Unis Tech with a total cash consideration of RMB49,000 and recognized investment loss with an amount of RMB3,548 and disposal gain with an amount of RMB16,509.

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 (US\$48,487) and RMB22,308 (US\$3,204) 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 (US\$2,340) 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 of RMB6 yuan at the disposal date. In December 2017, the Company injected capital of RMB15,000 in the WiFire Entities pursuant to the sale and purchase agreement. In 2019, the Company increased capital injection of RMB5,000 (US\$716) in the WiFire Entities. As of December 31, 2019, 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 (US\$3,352) and recognized investment loss with an amount of RMB17,853 (US\$2,564) and disposal gain with an amount of RMB17,853 (US\$2,564).

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 (US\$564) 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.

Available-for-sale debt investments

Available-for-sale debt investments consist of investments in convertible notes with conversion option to preferred shares that are not readily convertible to cash and therefore the bifurcation of embedded derivative is not required as the conversion option did not qualify as derivatives in accordance with ASC 815 “*Derivatives and Hedging*”.

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13. BANK BORROWINGS

Bank borrowings were as follows as of the respective balance sheet dates:

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Short-term bank borrowings	50,000	234,500	33,684
Long-term bank borrowings, current portion	75,284	32,500	4,668
	125,284	267,000	38,352
Long-term bank borrowings, non-current portion	112,000	79,500	11,419
Total bank borrowings	237,284	346,500	49,771

The short-term bank borrowings outstanding as of December 31, 2018 and 2019 bore a weighted average interest rate of 4.05% and 4.56% per annum, respectively, and were denominated in RMB. These borrowings were obtained from financial institutions and have terms of one year. The long-term bank borrowings (including current portion) outstanding as of December 31, 2018 and 2019 bore a weighted average interest rate of 5.31% and 5.28% per annum, respectively, and were denominated in RMB. These loans were obtained from financial institutions located in the PRC.

As of December 31, 2018 and 2019, unused loan facilities for bank borrowings amounted to RMB21,375 and RMB326,068 (US\$46,837), respectively.

Bank borrowings as of December 31, 2018 and 2019 were secured by the following:

December 31, 2018

Short-term bank borrowings (RMB)	Secured by
50,000	Secured by restricted cash of RMB60,796.
50,000	
Long-term bank borrowings (including current portion) (RMB)	Secured by
138,000	Secured by a subsidiary's fixed assets and land-use right with net book value of RMB286,596 and RMB16,403, respectively (Note 8/Note 10).
49,284	Unsecured borrowings.
187,284	

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13. BANK BORROWINGS (CONTINUED)

December 31, 2019

Short-term bank borrowings (RMB)	Secured by
34,500	Unsecured borrowings.
200,000	Secured by restricted cash of RMB215,816 (US\$31,000).
<u>234,500</u>	
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 (US\$29,267) and RMB15,989 (US\$2,297), respectively (Note 8/Note 10).
<u>112,000</u>	

14 ACCRUED EXPENSES AND OTHER PAYABLES

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

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Payroll and welfare payables	224,265	179,195	25,740
Value-added tax and other taxes payable	16,931	14,523	2,086
Payables for office supplies and utilities	21,719	24,562	3,528
Payables for the purchase of property and equipment	207,512	551,759	79,255
Payables for the purchase of intangible assets	4,576	2,934	421
Accrued service fees	41,618	52,746	7,576
Interest payables	54,376	58,961	8,469
Liability classified RSU	4,970	2,109	303
Payables for acquisitions	47,755	47,805	6,867
Others	35,598	44,341	6,368
	<u>659,320</u>	<u>978,935</u>	<u>140,613</u>

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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, the operating lease's weighted average remaining lease term was 9.4 years and weighted average discount rate was 6.09%. The finance lease's weighted average remaining lease term was 15.3 years and weighted average discount rate was 8.43%. For the year ended December 31, 2019, lease cost for finance leases capitalized was immaterial.

	For the year ended December 31,	
	2019	
	RMB	US\$
Lease cost		
Finance lease cost:		
Depreciation	216,664	31,122
Interest expenses	120,185	17,263
Operating lease cost	214,795	30,853
Total lease cost	<u>551,644</u>	<u>79,238</u>

Short-term lease cost and variable lease cost for operating leases and finance leases were immaterial for the year ended December 31, 2019.

Other information related to leases was as follows:

	2019	
	RMB	US\$
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash payments for operating leases	193,174	27,748
Financing cash payments for finance leases	333,614	47,921

Future lease payments under operating leases and finance leases as of December 31, 2019 were as follows:

	Operating Leases		Finance Leases	
	RMB	US\$	RMB	US\$
2020	466,670	67,033	364,729	52,390
2021	373,552	53,657	386,027	55,449
2022	160,644	23,075	377,564	54,234
2023	87,028	12,501	122,947	17,660
2024	47,484	6,821	121,008	17,382
2025 and thereafter	647,419	92,996	1,880,687	270,144
Total future lease payments	<u>1,782,797</u>	<u>256,083</u>	<u>3,252,962</u>	<u>467,259</u>
Less: Imputed interest	<u>(533,376)</u>	<u>(76,615)</u>	<u>(1,563,446)</u>	<u>(224,575)</u>
Present value of future lease payments*	<u>1,249,421</u>	<u>179,468</u>	<u>1,689,516</u>	<u>242,684</u>

* 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 RMB437,817 (US\$62,888), RMB579,102 (US\$83,183) and RMB232,502 (US\$33,397) for the year ended December 31, 2019, 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 RMB227,115 (US\$32,623), RMB896,927 (US\$128,836) and RMB565,474 (US\$81,225) for the year ended December 31, 2019, respectively.

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16. BONDS PAYABLE

On August 17, 2017, the Company issued and sold bonds with an aggregate principle amount of US\$200,000 at a coupon rate of 7% per annum or the Original Bonds. On September 29, 2017, the Company issued and sold follow-on bonds with an aggregate principle amount of US\$100,000 at a coupon rate of 7% per annum, or the Bonds. The Bonds were priced at a slight premium of 100.04%, with an effective yield of 6.98% (together with the Original Bonds, "2020 Notes"). The 2020 Notes will mature on August 17, 2020. The 2020 Notes were listed and quoted on the Official List of the Singapore Exchange Securities Trading Limited (the "SGX-ST"). Interest on the 2020 Notes is payable semi-annually in arrears on August 17 and February 17 in each year, beginning from February 17, 2018.

Net proceeds from 2020 Notes after deducting issuance costs were RMB1,926,419. The 2020 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; but rank lower than any secured indebtedness of the Company and all liabilities (including accounts payable) of the Company's subsidiaries and Consolidated VIEs.

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 (US\$283,903). 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 (US\$2,714) during the year ended December 31, 2019.

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

	RMB	US\$
For the years ending December 31,		
2020	947,505	136,100
2021	2,131,860	306,223
2022	40,500	5,817
2023 and thereafter	—	—

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17. DEFERRED GOVERNMENT GRANTS

During the years ended December 31, 2017, 2018 and 2019, the Company received RMB2,877, RMB500 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,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Balance at beginning of the year	30,993	22,435	15,792	2,268
Additions	2,877	500	—	—
Decrease due to disposal of subsidiaries	(3,573)	—	—	—
Recognized as a reduction of depreciation expense	(7,862)	(7,143)	(7,291)	(1,047)
Balance at end of the year	<u>22,435</u>	<u>15,792</u>	<u>8,501</u>	<u>1,221</u>

18. TREASURY STOCK

For the years ended December 31, 2017, 2018 and 2019, the Company repurchased the number of 3,448,482, nil and 242,830 ADSs pursuant to the share repurchase plans.

19. 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, 2017		118,290
Current year other comprehensive income		(120,963)
Balance as of December 31, 2017		(2,673)
Current year other comprehensive loss		88,652
Balance as of December 31, 2018		85,979
Current year other comprehensive income		(8,075)
Balance as of December 31, 2019		<u>77,904</u>
Balance as of December 31, 2019, in US\$		<u>11,190</u>

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20. 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 RMB134,053, RMB122,362 and RMB121,266 (US\$17,419) for the years ended December 31, 2017, 2018 and 2019, respectively.

21. 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.

The Company granted 611,111, 487,368 and 464,120 RSUs in 2017, 2018 and 2019, 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 commenced recognition of the related compensation expenses using the accelerated recognition method.

The Company granted 2,188,226 and 64,000 RSUs in 2018 and 2019, 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 commenced recognition of the related compensation expenses using the accelerated recognition method.

The Company granted 547,056 and 16,000 RSUs in 2018 and 2019, 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.

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21. SHARE-BASED COMPENSATION (CONTINUED)

(a) Option granted to employees (continued)

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, 2019, options to purchase 1,445,345 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, 2019	1,479,214	0.51	2.2	
Exercised	(33,869)	0.55		
Outstanding, December 31, 2019	1,445,345	0.51	1.3	1,005
Vested and expected to vest at December 31, 2019	1,445,345	0.51	1.3	1,005
Exercisable as of December 31, 2019	1,445,345	0.51	1.3	1,005

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, 2019, the Company had options outstanding to purchase an aggregate of 1,445,345 shares with an exercise price below the fair value of the Company's shares, resulting in an aggregate intrinsic value of RMB6,997 (US\$1,005).

The aggregate fair value of the outstanding options at the grant date was determined to be RMB14,508 (US\$2,084) as of December 31, 2019 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, 2017, 2018 and 2019 was US\$404, US\$239 and US\$42, respectively. The aggregate intrinsic value of options exercised during the years ended December 31, 2017, 2018 and 2019 was US\$306, US\$248, and US\$22, respectively.

As of December 31, 2019, 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 Plan:

	Number of RSUs	Weighted average grant date fair value (US\$)	Weighted average remaining contractual life (Years)	Aggregate intrinsic value (US\$)
Unvested, January 1, 2019	3,218,452	6.66	9	
Granted	544,120	7.67		
Vested	(856,051)	7.22		
Forfeited	(210,392)	6.52		
Unvested, December 31, 2019	2,696,129	6.83	7.8	19,547

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

21. SHARE-BASED COMPENSATION (CONTINUED)

(a) Option granted to employees (continued)

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, 2019 was RMB136,082 (US\$19,547), 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, 2017, 2018 and 2019 was US\$6.31, US\$6.39 and US\$7.67, respectively. The total fair value of RSUs vested during the years ended December 31, 2017, 2018 and 2019 was US\$18,238, US\$9,422 and US\$6,185, respectively.

As of December 31, 2019, there was RMB59,913 (US\$8,606) 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.

(b) Shares issued to management of Dermot Entities

For the years ended December 31, 2017, 2018 and 2019, the Company recorded share-based compensation expenses of RMB5,752, nil and nil within the Company's consolidated statements of operations, respectively.

Total share-based compensation expenses relating to share options and RSUs granted to employees recognized for the years ended December 31, 2017, 2018 and 2019 were as follows:

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Cost of revenues	(277)	2,668	1,884	271
Sales and marketing expenses	(681)	2,139	354	51
General and administrative expenses	47,945	53,346	40,501	5,817
Research and development expenses	142	1,385	1,177	169
	<u>47,129</u>	<u>59,538</u>	<u>43,916</u>	<u>6,308</u>

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22. 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. Additionally, upon payments of dividends by the Company to its shareholders, no Cayman Islands withholding tax will be imposed.

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, 2017, 2018 and 2019. 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 17%, 20% and 20% respectively for the years ended December 31, 2017, 2018 and 2019.

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 renewed the certificate in October 2018, which will expire in October 2020. 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, 2017, 2018 and 2019, 21Vianet Beijing enjoyed a preferential tax rate of 15%.

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, 2017, 2018 and 2019, the tax rate assessed for Xi'an Sub was 25%, 15% and 15%, respectively.

In 2013, BJ iJoy was qualified as a software enterprise which allows BJ iJoy to utilize a two-year 100% exemption for 2013 and 2014 followed by a three-year half-reduced EIT rate effective for the years from 2015 to 2017. For the years ended December 31, 2013 and 2014, BJ iJoy enjoyed the 100% tax exemption for its taxable income. For the year ended December 31, 2017, BJ iJoy enjoyed the half-reduced EIT rate for its taxable income. For the years ended December 31, 2018 and 2019, 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 15% preferential tax rate effective for three consecutive years. The certificate was renewed in October 2018 which will expire in October 2021. Accordingly, for the years ended December 31, 2017, 2018 and 2019, 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, expiring in November 2019 and the certificate was renewed in November 2019 which will expire in November 2022. Accordingly, for the years ended December 31, 2017, 2018 and 2019, SZ DYX enjoyed a preferential tax rate of 15%.

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22. TAXATION (CONTINUED)

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, 2019, 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,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Non-PRC	(286,388)	(214,063)	(178,762)	(25,676)
PRC	(721,426)	51,738	2,953	424
	<u>(1,007,814)</u>	<u>(162,325)</u>	<u>(175,809)</u>	<u>(25,252)</u>

Income tax benefits (expenses) comprised of:

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Current	(37,856)	(44,187)	(70,324)	(10,101)
Deferred	128,026	19,776	64,887	9,320
	<u>90,170</u>	<u>(24,411)</u>	<u>(5,437)</u>	<u>(781)</u>

The reconciliation of tax computed by applying the statutory income tax rate of 25% for the years ended December 31, 2017, 2018 and 2019 applicable to the PRC operations to income tax benefits (expenses) were as follows:

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Loss before income taxes	(1,007,814)	(162,325)	(175,809)	(25,252)
Income tax benefits computed at applicable tax rates (25%)	251,954	40,581	43,952	6,313
Non-deductible expenses	(5,468)	(2,834)	(23,082)	(3,316)
Research and development expenses	11,895	25,906	19,688	2,829
Preferential rate	(90,076)	11,701	20,213	2,903
Current and deferred tax rate differences	33,366	37,934	(8,699)	(1,250)
International rate differences	59,029	(63,525)	(77,066)	(11,069)
Tax exempted income	—	—	754	108
Unrecognized tax benefits	(6,259)	1,472	1,728	248
Deferred tax expense	2,851	—	—	—
Change in valuation allowance	(174,388)	(79,694)	25,423	3,652
Prior year provision to return true up	7,266	4,048	(8,348)	(1,199)
Income tax benefits (expenses)	<u>90,170</u>	<u>(24,411)</u>	<u>(5,437)</u>	<u>(781)</u>

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22. TAXATION (CONTINUED)*Deferred Tax*

The significant components of deferred taxes were as follows:

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Deferred tax assets			
Non-current			
Allowance for doubtful debt	38,993	48,568	6,976
Accrued expenses	25,894	21,139	3,036
Tax losses	151,440	146,996	21,115
Property and equipment	15,299	20,567	2,955
Intangible assets	2,221	3,691	530
Finance lease	50,980	69,148	9,932
Deferred government grant	2,662	1,189	171
Loss picked up on equity method investments	56,616	56,706	8,145
Valuation allowance	(184,664)	(158,638)	(22,786)
Total deferred tax assets	159,441	209,366	30,074
Deferred tax liabilities			
Non-current			
Intangible assets	89,536	104,217	14,970
Property and equipment	48,496	81,424	11,696
Capitalized interest expense	15,837	15,146	2,176
Gain picked up from equity method investments	3,851	1,785	256
Total non-current deferred tax liabilities	157,720	202,572	29,098

Valuation allowance is considered for each of the entities. Realization of the net deferred tax assets is dependent on factors including future reversals of existing taxable temporary differences and adequate future taxable income, exclusive of reversing deductible temporary differences and tax loss or credit carry forwards. The Company evaluates the potential realization of deferred tax assets on an entity-by-entity basis. As of December 31, 2018 and 2019, valuation allowances were provided against deferred tax assets in entities where it was determined it was more likely than not that the benefits of the deferred tax assets will not be realized in future years.

As of December 31, 2019, the Company has net tax operating losses from its PRC subsidiaries and its Consolidated VIEs, as per filed tax returns, of RMB661,253 (US\$94,983), which will expire between 2020 to 2029.

As of December 31, 2019, the Company intends to permanently reinvest the undistributed earnings from other foreign subsidiaries to fund future operations. As of December 31, 2019, the total amount of undistributed earnings from its PRC subsidiaries as well as VIEs was RMB1,317,809 (US\$189,291). The amount of unrecognized deferred tax liabilities for temporary differences related to investments in foreign subsidiaries is not determined because such a determination is not practicable.

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21VIANET GROUP, INC.
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22. TAXATION (CONTINUED)*Unrecognized Tax Benefits*

As of December 31, 2018 and 2019, the Company recorded unrecognized tax benefits of RMB6,677 and RMB2,443 (US\$351), respectively.

The unrecognized tax benefits and its related interest are primarily related to non-deductible expenses and accrued expenses. RMB897 (US\$129) 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,		
	2018	2019	
	RMB	RMB	US\$
Balance at beginning of year	11,582	4,509	647
Reversal based on tax positions related to prior years	(9,070)	(3,266)	(469)
Additions based on tax positions related to the current year	1,997	479	69
Balance at end of year	4,509	1,722	247

For the years ended December 31, 2017, 2018 and 2019, the Company recorded (reversed) interest expense of RMB674, RMB(2,761) and RMB(1,447) (US\$(211)), respectively. Accumulated interest expense recorded by the Company was RMB2,168 and RMB721 (US\$104) as of December 31, 2018 and 2019, respectively. As of December 31, 2019, the tax years ended December 31, 2013 through 2019 for the PRC subsidiaries remain open for statutory examination by the PRC tax authorities.

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21VIANET GROUP, INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)
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23. RELATED PARTY TRANSACTIONS

a) Related parties *

Name of related parties	Relationship with the Company
Xiaomi Communication Technology Co., Ltd., and its subsidiary, Beijing Xiaomi Mobile Software Co., Ltd. (collectively, "Xiaomi Group") ⁽²⁾	A group controlled by principal shareholder of the Company
Beijing Kingsoft Cloud Network Technology Co., Ltd. ("BJ Kingsoft") ⁽¹⁾	A company controlled by principal shareholder of the Company
Beijing Cheetah Mobile Technology Co., Ltd. ("BJ Cheetah") ⁽¹⁾	A company controlled by principal shareholder of the Company
Unisvnet Technology Co., Ltd. ("Unisvnet")	A company controlled by controlling shareholder of 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 controlling shareholder of the Company
Qidi Bus (Beijing) Technology Co., Ltd. ("Qidi Tech")	A company controlled by controlling shareholder of the Company
Dyxnet Internet Center Limited ("DIC")	A related party of seller of Dermot Entities
Dyxnet Data Centre Services Limited ("DCSS")	A related party of seller of Dermot Entities
WNT Technology Limited ("WNT Technology")	A related party of seller of Dermot Entities
Shanghai Shibe Hi-Tech Co., Ltd. ("SH Shibe")	Noncontrolling 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
Shihua DC Investment Holdings 2 Limited ("Shihua Holdings 2")	Equity investee of the Company in 2017, 2018 and wholly-owned subsidiary since August 20, 2019 (Note 4)
Shihua DC Investment Management Limited ("Shihua Investment Management")	Equity investee of the Company
Shihua DC Investment Management Group Limited ("Shihua Investment Group")	Equity investee of the Company
Beijing Taiji Data Tech Co., Ltd. ("Taiji")	Equity investee 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
Shanghai Fawei Technology Co., Ltd. ("SH Fawei") ⁽³⁾	Equity investee of 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

* These are the related parties that have engaged in significant transactions with the Company for the years ended December 31, 2017, 2018 and 2019.

(1) These companies and Kingsoft are ultimately controlled by the same party. Kingsoft made a significant investment in the Company in 2015.

(2) These companies and Xiaomi are ultimately controlled by the same party. Xiaomi made a significant investment in the Company in 2015.

(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, 2017, 2018 and 2019.

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

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23. RELATED PARTY TRANSACTIONS (CONTINUED)

b) Other than disclosed elsewhere, the Company had the following significant related party transactions for the years ended December 31, 2017, 2018 and 2019:

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Services provided to:				
- Xiaomi Group	220,110	374,085	437,694	62,871
- Taiji	—	13,681	7,899	1,135
- Qidi Tech	—	—	7,427	1,067
- BJ Kingsoft	8,046	6,281	3,475	499
- WiFire BJ	9,726	16,490	1,934	278
- BJ Cheetah	5,128	2,079	169	24
- Unisvnet	—	1,011	—	—
- Others	3,314	4,493	1,494	215
Services provided by:				
- CYSD	2,979	18,667	38,918	5,590
- Taiji	—	7,095	19,942	2,865
- Jingliang Inter Cloud	—	3,477	8,829	1,268
- BJ Kingsoft	7,775	13,204	3,492	502
- DCSS	6,424	5,238	—	—
- BZRH	—	4,239	—	—
- WiFire BJ	1,616	4,066	—	—
- Others	2,632	6,396	5,866	843
Sales of equipment to:				
- BJ Fastweb	1,021	—	—	—
Purchases of equipment from:				
- WNT Technology	2,629	—	—	—
- DIC	1,234	—	—	—

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23. RELATED PARTY TRANSACTIONS (CONTINUED)

b) Other than disclosed elsewhere, the Company had the following significant related party transactions for the years ended December 31, 2017, 2018 and 2019 (continued):

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Loan to:				
- Taiji	—	—	1,500	215
- BJ Fastweb	20,000	—	—	—
Interest income from loan to:				
- BJ Fastweb	210	700	700	101
Lease deposit paid to:				
- Ziguang Finance Leasing	—	2,042	6,154	884
- Tuspark Harmonious	—	11,472	—	—
Lease payment paid to:				
- Tuspark Harmonious	—	—	68,832	9,887
- Ziguang Finance Leasing	—	4,897	17,156	2,464
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23. RELATED PARTY TRANSACTIONS (CONTINUED)

c) The Company had the following related party balances as of December 31, 2018 and 2019:

	As of December 31,		
	2018	2019	
	RMB	RMB	US\$
Amounts due from related parties:			
Current:			
-Marble SH ⁽²⁾	—	100,106	14,379
-Shihua Investment Group ⁽³⁾	—	82,542	11,856
- Xiaomi Group	41,159	39,778	5,714
-Marble Holdings ⁽²⁾	—	29,736	4,271
-Shihua Investment Management ⁽³⁾	—	27,905	4,008
- SH Shibei	9,800	9,800	1,408
- Taiji	13,542	9,499	1,364
-Qidi Tech	—	1,249	179
- WiFire BJ ⁽¹⁾	36,578	—	—
- SH Fawei ⁽¹⁾	13,742	—	—
- WH Fastweb ⁽¹⁾	5,131	—	—
- Unisvnet	1,072	—	—
- BJ Kingsoft	982	—	—
- Others	3,440	1,050	152
	<u>125,446</u>	<u>301,665</u>	<u>43,331</u>
Non-current:			
- Tuspark Harmonious	11,472	11,863	1,704
- Ziguang Finance Leasing	2,042	8,195	1,177
- BJ Fastweb ⁽¹⁾	20,910	—	—
- Others	—	596	86
	<u>34,424</u>	<u>20,654</u>	<u>2,967</u>
Amounts due to related parties:			
Current:			
-Shihua Investment Group ⁽³⁾	—	84,021	12,069
- Ziguang Finance Leasing	8,938	27,160	3,901
-Shihua Investment Management ⁽³⁾	—	22,484	3,230
- Tuspark Harmonious	13,850	24,917	3,579
- WiFire BJ ⁽¹⁾	—	6,330	909
- BJ Kingsoft	609	1,073	154
- SH Guotong ⁽¹⁾	8,135	—	—
- CYSB ⁽¹⁾	7,158	—	—
- Taiji	6,724	—	—
- BZRH ⁽¹⁾	5,088	—	—
- Others	1,826	950	137
	<u>52,328</u>	<u>166,935</u>	<u>23,979</u>
Non-current:			
- Tuspark Harmonious	443,622	698,511	100,335
- Ziguang Finance Leasing	12,527	47,388	6,807
- Shihua Holdings 2	48,329	—	—
	<u>504,478</u>	<u>745,899</u>	<u>107,142</u>

- (1) As of December 31, 2019, RMB20,367 (US\$2,926) of amounts due from/to WiFire Entities were offset according to the multi-party debt offset agreement signed in 2019. The remaining RMB52,142 (US\$7,490) 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 Shihua Holdings 2's some subsidiaries (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).

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24. SEGMENT REPORTING

As of December 31, 2016, the operations of the Company are organized into two segments, consisting of the hosting and related services and managed network services. The Company derives the results of the segments directly from its internal management reporting system. The CODM measures the performance of each segment based on metrics of revenue and earnings from operations and uses these results to evaluate the performance of, and to allocate resources to, each of the segments. After disposal of WiFire Entities and Aipu Group in September 2017 (Note 4), the Company had only one reporting segment as of December 31, 2017, 2018 and 2019.

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.

	For the years ended December 31,			
	2017 RMB	2018 RMB	2019 RMB	US\$
Hosting and related services				
Revenues	2,975,178	3,401,037	3,788,967	544,251
Cost	(2,130,279)	(2,456,166)	(2,849,518)	(409,308)
Gross profit	844,899	944,871	939,449	134,943
Operating income (expenses)				
Operating income	5,439	5,027	6,862	986
Sales and marketing expenses	(171,761)	(172,176)	(206,309)	(29,634)
Research and development expenses	(97,597)	(92,109)	(88,792)	(12,754)
General and administrative expenses	(417,154)	(462,637)	(415,277)	(59,651)
(Allowance) reversal for doubtful debt	(6,257)	598	(1,557)	(224)
Impairment of receivables from equity investees	—	—	(52,142)	(7,490)
Changes in the fair value of contingent purchase consideration payables	(937)	13,905	—	—
Operating profit	156,632	237,479	182,234	26,176
Managed network services				
Revenues	417,527	—	—	—
Cost	(504,016)	—	—	—
Gross loss	(86,489)	—	—	—
Operating expenses				
Sales and marketing expenses	(84,921)	—	—	—
Research and development expenses	(51,546)	—	—	—
General and administrative expenses	(102,796)	—	—	—
Allowance for doubtful debt	(31,170)	—	—	—
Impairment of goodwill	(766,440)	—	—	—
Impairment of long-lived assets	(401,808)	—	—	—
Operating loss	(1,525,170)	—	—	—
Group consolidated revenue	3,392,705	3,401,037	3,788,967	544,251
Group consolidated operating (loss) profit	(1,368,538)	237,479	182,234	26,176

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25. 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, 2018, and 2019, the Company's PRC subsidiaries had appropriated RMB42,403 and RMB60,469 (US\$8,687), 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 RMB6,736,125 (US\$967,584) as of December 31, 2019.

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21VIANET GROUP, INC.
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(Amounts in thousands of RMB and US\$, except for number of shares and per share data)

26. 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,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Numerator:				
Net loss	(917,644)	(186,736)	(181,246)	(26,033)
Net loss (profit) attributable to noncontrolling interest and redeemable noncontrolling interest	144,914	(18,329)	(1,046)	(150)
Net loss attributable to ordinary shareholders	(772,730)	(205,065)	(182,292)	(26,183)
Plus increase in accretion of redeemable noncontrolling interests	(141,896)	—	—	—
Adjusted net loss attributable to ordinary shareholders	(914,626)	(205,065)	(182,292)	(26,183)
Denominator:				
Weighted average number of shares outstanding—basic	672,836,226	674,732,130	668,833,756	668,833,756
Weighted average number of shares outstanding—diluted	672,836,226	674,732,130	668,833,756	668,833,756
Loss per share—Basic:				
Net loss	(1.36)	(0.30)	(0.27)	(0.04)
	(1.36)	(0.30)	(0.27)	(0.04)
Loss per share—Diluted:				
Net loss	(1.36)	(0.30)	(0.27)	(0.04)
	(1.36)	(0.30)	(0.27)	(0.04)

In 2017, 2018 and 2019, the Company issued 9,000,000, nil and 6,700,002 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.

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

27. 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, 2017, 2018 and 2019, 3,119,052, 3,070,500 and 304,200 Class A ordinary shares were issued to settle the share options exercised and RSUs vested. 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.

28. REDEEMABLE NONCONTROLLING INTERESTS

In May 2014, the Company acquired 50% equity interests plus one share in SC Aipu. The sale and purchase agreement also provided put options that allows the seller of Aipu Group to sell the remaining 50% equity interests in the Aipu Group in three tranches, namely 28% equity interest in 2015, 11% equity interest in 2016 and the remaining equity interests (including those in 2015 and 2016 if these put options are not exercised) in 2017 for a consideration determined using certain financial or operational targets with a floor of RMB700,000 or a ceiling of RMB800,000, in aggregate. A portion of the consideration is to be settled in cash based on certain financial target stipulated in the sale and purchase agreement. The difference will be settled in cash or shares, with the choice to settle in cash or shares residing with the Company for the first tranche and the seller of Aipu Group in the subsequent tranches.

The noncontrolling interests are to be redeemed by the Company at the option of the seller of Aipu Group ("Written Put Option") in return for cash and shares where the maximum number of shares required to be delivered is outside of the control of the Company, and thus are accounted for as redeemable noncontrolling interests. The Company elects to recognize the changes in redemption value immediately as they occur and adjust the carrying amount of the noncontrolling interests to the redemption value at the end of each reporting period as if it was the redemption date in accordance with ASC 480. As of December 31, 2015 and 2016, as the remaining 50% equity interests are held by a few non-controlling shareholders where the underlying shares of the Aipu Group are not publicly traded, the Written Put Option are embedded features in the Aipu Group's shares, which does not qualify for bifurcation accounting. The put options are recognized as part of redeemable non-controlling interests. The redeemable noncontrolling interests were initially recorded at the higher of acquisition date fair value and subsequently adjusted to the balance after attribution of Aipu Group's net income pursuant to ASC 810, Consolidation, and the redemption value pursuant to ASC 480, which is capped within the aforementioned range. Adjustments to the carrying amount of redeemable noncontrolling interests pursuant to ASC 480, if any, are charged to additional paid-in capital.

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

28. REDEEMABLE NONCONTROLLING INTERESTS (CONTINUED)

Upon the disposal of Aipu Group in September 2017, the redeemable noncontrolling interests recognized was reversed due to the deconsolidation of Aipu Group. However, as the Written Put Option outstanding is legally detachable separately exercisable from the 50% minus one share of equity in Aipu Group held by the Company, the Written Put Option qualifies as a freestanding financial instrument as defined under ASC Topic 480 and the Written Put Option is accounted as derivative liability pursuant to ASC 815. However, in December 2017 as part of the transfer of all the remaining 50% equity interest, the Written Put Option was terminated and the gain was recognized as part of the disposal of subsidiaries for the year ended December 31, 2017.

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Balance as of January 1	700,000	—	—	—
Loss for the year	(141,896)	—	—	—
Increase in accretion of redeemable noncontrolling interests	141,896	—	—	—
Reversal due to extinguishment of put option	(700,000)	—	—	—
Balance as of December 31	—	—	—	—

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, 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 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.

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

29. FAIR VALUE MEASUREMENTS (CONTINUED)

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

	Fair value measurement using:			Fair value at	
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Unobservable inputs (Level 3)	December 31, 2018	
	RMB	RMB	RMB	RMB	
Cash equivalents:					
- Time deposits	1,194,425	—	—		1,194,425
Short-term investments:					
- Time deposits	245,014	—	—		245,014
Long-term investments					
- Available-for-sale debt securities	—	—	2,537		2,537
Assets	<u>1,439,439</u>	<u>—</u>	<u>2,537</u>		<u>1,441,976</u>
Long-term borrowings:					
- Bonds payable	2,030,361	—	—		2,030,361
Other liabilities:					
- Liability classified RSU	—	—	4,970		4,970
Liabilities	<u>2,030,361</u>	<u>—</u>	<u>4,970</u>		<u>2,035,331</u>

	Fair value measurement using:			Fair value at	
	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Unobservable inputs (Level 3)	December 31, 2019	
	RMB	RMB	RMB	RMB	US\$
Cash equivalents:					
- Time deposits	117,825	—	—	117,825	16,925
Short-term investments:					
- Time deposits	363,856	—	—	363,856	52,265
Long-term investments					
- Available-for-sale debt securities	—	—	1,713	1,713	246
Assets	<u>481,681</u>	<u>—</u>	<u>1,713</u>	<u>483,394</u>	<u>69,436</u>
Short-term borrowings:					
- Current portion of bonds payable	912,416	—	—	912,416	131,060
Long-term borrowings:					
- Bonds payable	2,089,114	—	—	2,089,114	300,082
Other liabilities:					
- Liability classified RSU	—	—	2,109	2,109	303
Liabilities	<u>3,001,530</u>	<u>—</u>	<u>2,109</u>	<u>3,003,639</u>	<u>431,445</u>

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29. FAIR VALUE MEASUREMENTS (CONTINUED)

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

	Contingent consideration payable
	RMB
Fair value at January 1, 2018	36,734
Changes in the fair value	(13,905)
Settlement of contingent consideration payable	(22,829)
Transfers in and/or out of Level 3	—
Fair value at December 31, 2018	—
Transfers in and/or out of Level 3	—
Fair value at December 31, 2019	—
Fair value at December 31, 2019 (US\$)	—
	Liability classified RSU
	RMB
Fair value at January 1, 2018	11,865
Reclassification to equity	(587)
Reversal	(6,308)
Transfers in and/or out of Level 3	—
Fair value at December 31, 2018	4,970
Reclassification to equity	(2,861)
Reversal	—
Transfers in and/or out of Level 3	—
Fair value at December 31, 2019	2,109
Fair value at December 31, 2019 (US\$)	303

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30. COMMITMENTS AND CONTINGENCIES

Capital commitments

As of December 31, 2019, the Company has the following commitments to purchase certain computer and network equipment and construction-in-progress:

	<u>RMB</u>	<u>US\$</u>
2020	225,511	32,393
2021 and thereafter	<u>—</u>	<u>—</u>
	<u>225,511</u>	<u>32,393</u>

Bandwidth and cabinet capacity purchase commitments

As of December 31, 2019, the Company has outstanding purchase commitments in relation to bandwidth and cabinet capacity consisting of the following:

	<u>RMB</u>	<u>US\$</u>
2020	600,571	86,267
2021	60,602	8,705
2022	44,968	6,459
2023	206	30
2024 and thereafter	<u>2,068</u>	<u>297</u>
	<u>708,415</u>	<u>101,758</u>

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30. COMMITMENTS AND CONTINGENCIES (CONTINUED)*Managed Network Services*

As of December 31, 2019, the Company was still in the process of negotiation with the seller of the Managed Network Entities on the quality assessment of the fiber optic network subsequent to the completion of construction. As this is a pending event subsequent to the acquisition which is unrelated to the original acquisition, the Company concluded that the accounting for any settlement should be separated from that of the business combination. Based on the Company's best estimate, the fair value of the related contingent consideration in shares of RMB47,755, as determined based on the remeasured amount of December 31, 2012, is accrued as a contingent payable pursuant to ASC 450, *Contingencies*. The Company is negotiating with the seller of the Managed Network Entities to come to an agreement on the quality assessment of the fiber optic network as of December 31, 2019 and the Company's estimate of the contingent payable remains unchanged.

Income Taxes

As of December 31, 2019, the Company has recognized an accrual of RMB2,443 (US\$351) for unrecognized tax benefits and its interest (Note 22). The final outcome of the tax uncertainty is dependent upon various matters including tax examinations, interpretation of tax laws or expiration of statutes 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 class action settlement, requesting that, among others, the Court preliminarily approve a settlement agreement that the parties reached to settle the case for RMB58,808. The unopposed motion for preliminary approval is currently pending before the Court. The Company assessed that the settlement is probable and recorded an estimated loss after deduction of insurance claim of RMB10,007 within accrued expenses and other payables in the consolidated balance sheets as of December 31, 2017. 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. As this legal proceeding remains in preliminary stage, the Company's management is unable to estimate the likelihood of an unfavorable outcome or the amount or range of any potential loss.

31. SUBSEQUENT EVENTS

In February 2020, the Company has entered into convertible note purchase agreements with several investors to issue convertible notes for a total aggregate principal amount of US\$200,000 at a simple interest rate of 2% per annum. The convertible notes will mature in five years from the date of issuance if not converted.

Beginning in January 2020, the emergence and wide spread of the novel Coronavirus ("COVID-19") has resulted in quarantines, travel restrictions, and the temporary closure of stores and facilities in China and elsewhere. Substantially all of the Company's revenue and workforce are concentrated in China. Consequently, the COVID-19 outbreak may adversely affect the Company's business operations, financial condition and operating results for 2020, including but not limited to negative impact to the Company's total revenues, slower collection of accounts receivables and additional allowance for doubtful accounts and downward adjustments or impairment to the Company's long-term investments. Because of the uncertainties surrounding the COVID-19 outbreak, the extent of the business disruption and the related financial impact cannot be reasonably estimated at this time.

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21VIANET GROUP, INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)
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32. PARENT COMPANY ONLY CONDENSED FINANCIAL INFORMATION*Condensed balance sheets*

	Notes	As of December 31,		
		2018	2019	
		RMB	RMB	US\$
ASSETS				
Current assets				
Cash and cash equivalents		590,470	243,989	35,047
Short-term investments		150,990	138,848	19,944
Prepaid expenses and other current assets		98,337	105,597	15,168
Amounts due from subsidiaries	(b)	5,062,149	6,128,595	880,318
Total current assets		5,901,946	6,617,029	950,477
Non-current assets				
Investments in subsidiaries		1,364,685	1,446,563	207,786
Total non-current assets		1,364,685	1,446,563	207,786
Total assets		7,266,631	8,063,592	1,158,263
LIABILITIES AND SHAREHOLDERS' EQUITY				
Current liabilities:				
Accrued expenses and other payables		56,656	57,612	8,275
Account payables		2,725	56	8
Interest payable		53,965	58,525	8,406
Current portion of bonds payable		—	911,147	130,878
Amounts due to subsidiaries	(b)	21,242	22,471	3,228
Total current liabilities		134,588	1,049,811	150,795
Non-current liabilities				
Bonds payable	(c)	2,037,836	2,060,708	296,002
Total non-current liabilities		2,037,836	2,060,708	296,002
Total liabilities		2,172,424	3,110,519	446,797
Shareholders' equity:				
Class A Ordinary shares (par value of US\$0.00001 per share; 1,200,000,000 and 1,200,000,000 shares authorized; 499,706,628 and 505,253,850 shares issued and outstanding as of December 31, 2018 and 2019, respectively)		34	34	5
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 174,649,638 shares issued and outstanding as of December 31, 2018 and 2019, respectively)		12	12	2
Class C Ordinary shares (par value of US\$0.00001 per share; nil and 60,000 shares authorized; nil and 60,000 shares issued and outstanding as of December 31, 2018 and 2019, respectively)		—	—	—
Additional paid-in capital		9,141,494	9,202,567	1,321,866
Accumulated other comprehensive income		85,979	77,904	11,190
Accumulated deficit		(3,795,629)	(3,977,921)	(571,391)
Treasury stock		(337,683)	(349,523)	(50,206)
Total shareholders' equity		5,094,207	4,953,073	711,466
Total liabilities and shareholders' equity		7,266,631	8,063,592	1,158,263

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)
(Amounts in thousands of RMB and US\$, unless otherwise stated)

32. PARENT COMPANY ONLY CONDENSED FINANCIAL INFORMATION (CONTINUED)

Condensed statements of operations

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Operating Expenses				
General and administrative expenses	(145,890)	(65,949)	(44,490)	(6,389)
Changes in the fair value of contingent purchase consideration payables	(937)	13,905	—	—
Operating loss	(146,827)	(52,044)	(44,490)	(6,389)
Other loss	(95,210)	(262,186)	(274,572)	(39,440)
Share of (losses) profits from subsidiaries and Consolidated VIEs	(530,693)	109,165	136,770	19,646
Loss before income taxes	(772,730)	(205,065)	(182,292)	(26,183)
Income tax expense	—	—	—	—
Net loss	(772,730)	(205,065)	(182,292)	(26,183)

Condensed statements of comprehensive loss

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Net loss	(772,730)	(205,065)	(182,292)	(26,183)
Other comprehensive (loss) income, net of tax of nil:				
Foreign currency translation adjustments, net of tax of nil	(120,963)	88,652	(8,075)	(1,160)
Other comprehensive (loss) income, net of tax of nil:	(120,963)	88,652	(8,075)	(1,160)
Comprehensive loss	(893,693)	(116,413)	(190,367)	(27,343)
Comprehensive loss attributable to the Company's ordinary shareholders	(893,693)	(116,413)	(190,367)	(27,343)

Condensed statements of cash flows

	For the years ended December 31,			
	2017	2018	2019	
	RMB	RMB	RMB	US\$
Net cash used in operating activities	(18,324)	(166,068)	(142,989)	(20,539)
Net cash used in investing activities	(1,291,042)	(203,651)	(1,011,257)	(145,258)
Net cash (used in) generated from financing activities	(130,187)	43,145	807,765	116,028
Net decrease in cash and cash equivalents and restricted cash	(1,439,533)	(326,574)	(346,481)	(49,769)
Cash and cash equivalents and restricted cash at beginning of the year	2,356,597	917,044	590,470	84,816
Cash and cash equivalents and restricted cash at end of the year	917,044	590,470	243,989	35,047

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (CONTINUED)
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32. PARENT COMPANY ONLY CONDENSED FINANCIAL INFORMATION (CONTINUED)

(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 sheet as "Investments in subsidiaries" and the share of the subsidiaries' profit or loss is presented as "Share of (losses) 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, 2018 and 2019:

	As of December 31,		
	2018 RMB	2019 RMB	US\$
Amounts due from subsidiaries			
- 21Vianet HK	4,938,618	5,855,452	841,083
- WiFire Open Network Group Ltd.	4,277	147,326	21,162
- HongKong Fastweb Holdings Co., Ltd.	65,976	67,088	9,637
- 21V Mobile	52,579	58,018	8,334
- WiFire Group Inc.	686	698	100
- Others	13	13	2
	<u>5,062,149</u>	<u>6,128,595</u>	<u>880,318</u>
Amounts due to subsidiaries			
- 21Vianet Beijing	18,351	19,449	2,794
- Others	<u>2,891</u>	<u>3,022</u>	<u>434</u>
	<u>21,242</u>	<u>22,471</u>	<u>3,228</u>

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32. PARENT COMPANY ONLY CONDENSED FINANCIAL INFORMATION (CONTINUED)

(c) Bonds payable

On August 17, 2017, the Company issued and sold bonds with an aggregate principle amount of US\$200,000 at a coupon rate of 7% per annum or the Original Bonds. On September 29, 2017, the Company issued and sold follow-on bonds with an aggregate principle amount of US\$100,000 at a coupon rate of 7% per annum, or the Bonds. The Bonds were priced at a slight premium of 100.04%, with an effective yield of 6.98% (together with the Original Bonds, "2020 Notes"). The 2020 Notes will mature on August 17, 2020. The 2020 Notes were listed and quoted on the Official List of the Singapore Exchange Securities Trading Limited (the "SGX-ST"). Interest on the 2020 Notes is payable semi-annually in arrears on August 17 and February 17 in each year, beginning from February 17, 2018.

Net proceeds from 2020 Notes after deducting issuance costs were RMB1,926,419. The 2020 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; but rank lower than any secured indebtedness of the Company and all liabilities (including accounts payable) of the Company's subsidiaries and Consolidated VIEs.

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 (US\$283,903). 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 (US\$2,714) during the year ended December 31, 2019.

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