21Vianet Group, Inc.
Form 20-F
March 27, 2019
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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, 2018.

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)

Guanjie Building Southeast 1st Floor, 10# Jiuxianqiao East Road,

Chaoyang District

Beijing, 100016

The People s Republic of China

(Address of Principal Executive Offices)

Ms. Sharon Xiao Liu, Chief Financial Officer

21Vianet Group, Inc.

Guanjie Building Southeast 1st Floor, 10# Jiuxianqiao East Road,

Chaoyang District

Beijing, 100016

The People s Republic of China

Phone: (86) 10 8456-2121

Facsimile: (86) 10 8456-4234

(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	Name of exchange on which registered
American depositary shares, each representing six Class A ordinary shares, par value US$0.00001 per share	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.

499,706,628 Class A ordinary shares issued and outstanding and excluding treasury shares, and 174,649,638 Class B ordinary shares, par value US$0.00001 per share, as of December 31, 2018.

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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INTRODUCTION

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 consolida 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 both Class A ordinary shares, par value US$0.00001 per share, and Class B 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 RMB6.8755 to US$1.00, the exchange rate on December 31, 2018 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 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 services market;
- 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; 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, 2016, 2017 and 2018 and our balance sheet data as of December 31, 2017 and 2018 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, 2014 and 2015 and our balance sheet data as of December 31, 2014, 2015 and 2016 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, 2014, 2015 and 2016 as presented in this annual report were modified to reflect this change in segment reporting for consistency purposes.

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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.

	For the Year Ended December 31,					
	2014	2015	2016	2017	2018	
	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	1,505,233	2,369,223	2,668,655	2,975,178	3,401,037	494,660
Managed network services	1,371,214	1,265,149	973,119	417,527		
Total net revenues	2,876,447	3,634,372	3,641,774	3,392,705	3,401,037	494,660
Cost of revenues(1)	(2,066,304)	(2,780,614)	(2,929,638)	(2,634,295)	(2,456,166)	(357,235)
Gross profit	810,143	853,758	712,136	758,410	944,871	137,425
Operating (expenses) income:						
Sales and marketing expenses(1)	(287,229)	(359,460)	(352,926)	(256,682)	(172,176)	(25,042)
Research and development expenses(1)	(121,676)	(142,835)	(149,337)	(149,143)	(92,109)	(13,397)
General and administrative expenses(1)	(483,396)	(568,741)	(639,648)	(519,950)	(462,637)	(67,288)
(Allowance)/reversal for doubtful debt	(9,913)	(32,199)	(117,564)	(37,427)	598	87
Changes in the fair value of contingent purchase consideration payable	(22,629)	(43,325)	93,307	(937)	13,905	2,022
Impairment of long-lived assets			(392,947)	(401,808)		
Impairment of goodwill				(766,440)		
Operating income		8,569	6,783	5,439	5,027	731
Operating (loss) profit	(114,700)	(284,233)	(840,196)	(1,368,538)	237,479	34,538

Net loss	(328,477)	(401,275)	(931,922)	(917,644)	(186,736)	(27,161)
Net (income) loss attributable to non-controlling interest	(20,003)	(26,824)	298,324	144,914	(18,329)	(2,666)
Net loss attributable to Company s ordinary shareholders	(348,480)	(428,099)	(633,598)	(772,730)	(205,065)	(29,827)
Loss per share:						
Basic	(0.89)	(0.85)	(1.37)	(1.36)	(0.30)	(0.04)
Diluted	(0.89)	(0.85)	(1.37)	(1.36)	(0.30)	(0.04)
Loss per ADS:						
Basic	(5.34)	(5.10)	(8.22)	(8.16)	(1.80)	(0.24)
Diluted	(5.34)	(5.10)	(8.22)	(8.16)	(1.80)	(0.24)
Shares used in loss per share computation:						
Basic	401,335,788	492,065,239	617,169,833	672,836,226	674,732,130	674,732,130
Diluted	401,335,788	492,065,239	617,169,833	672,836,226	674,732,130	674,732,130

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

	For the Year Ended December 31,					
	2014	2015	2016	2017	2018	
	RMB	RMB	RMB	RMB	RMB	US$
	(in thousands)					
Allocation of share-based compensation expenses:						
Cost of revenues	7,163	12,422	(4,110)	(277)	2,668	388
Sales and marketing expenses	13,482	13,488	2,490	(681)	2,139	311
Research and development expenses	4,176	10,303	(2,924)	142	1,385	201
General and administrative expenses	208,914	153,814	123,273	47,945	53,346	7,759
Total share-based compensation expenses	233,735	190,027	118,729	47,129	59,538	8,659

	As of December 31,					
	2014	2015	2016	2017	2018	
	RMB	RMB	RMB	RMB	RMB	US$
	(in thousands)					
Consolidated Balance Sheet Data:						
Cash and cash equivalents	644,415	1,685,054	1,297,418	1,949,631	2,358,556	343,038
Restricted cash (current asset)	161,649	195,230	1,963,561	242,494	265,214	38,574
Short-term investments	911,242	102,300	277,946	548,890	245,014	35,636
Accounts and notes receivable, net	739,945	694,108	655,459	455,811	524,305	76,257
Total current assets	2,831,618	3,437,921	5,158,561	4,245,542	4,678,109	680,402
Restricted cash (non-current asset)	121,415	128,515	33,544	3,344	37,251	5,418
Total assets	9,612,281	10,847,710	12,421,524	9,908,161	11,150,717	1,621,804
Total current liabilities	2,989,115	2,821,019	4,373,857	1,764,184	2,191,210	318,699
Total liabilities	6,611,618	6,023,106	5,570,507	4,707,157	5,787,533	841,762
Total mezzanine equity	773,706	790,229	700,000			
Total shareholders equity	2,226,957	4,034,375	6,151,017	5,201,004	5,363,184	780,042

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 2018, we increased the aggregate number of cabinets under our management by 1,574 from 29,080 as of December 31, 2017 to 30,654 as of December 31, 2018. In order to support our growing customer demand, we plan to add new cabinets in 2019 through new self-built data centers, new phases of existing self-built data centers and partnered 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.

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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.

Delays in the construction of new data centers or the expansion of existing data centers could involve significant risks to our business.

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

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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;
- 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, 2018, we leased a total of 4,943 cabinets that are housed in our 38 partnered data centers, accounting for 16.1% of the total number of our cabinets under management. If we are not able to secure sufficient cabinets from China Unicom and China Telecom, it will have a material adverse effect on our business prospects and results of operations.

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

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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.

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, 2018, our self-built data centers house 25,711 cabinets, or 83.9% 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 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, in October 2012, we entered into a commercial operator agreement with Microsoft Corporation to expand Microsoft s premier commercial public cloud services, Office 365 and Windows Azure, in China, and we further agreed with them to extend the agreement and establish a long-term partnership in March 14, 2018. 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 (previously known as Bluemix) which are now generally available in China. 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, pursuant to which we and Warburg Pincus agreed to contribute assets, capital and other resources to this joint venture. In November 2017, we entered in to a definitive agreement with BMW to provide a cutting-edge turnkey solutions to BMW, as well as private and hybrid cloud services, to support BMW s strong capacity needs in China. In July 2018, our wholly-owned subsidiary Shanghai Blue Cloud Technology Co., Ltd., or SH Blue Cloud, entered into distribution agreements with each of Unify Cloud, AvePoint, Agile Point and Fadada.com to distribute their products and services in mainland 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;
- 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;
- the costs of acquisitions;
- international operations conducted by some of our subsidiaries;
- any different interpretations on 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.

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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 be assured 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 add 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;
- inability to successfully communicate the benefits of data center services to businesses;
- 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 expand our sales to existing customers; and
- reliability, quality or compatibility problems with our services.

A substantial amount of our past revenues were derived from service upgrades by 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 continue attracting new customers or grow our revenues from existing customers for a prolonged period of time could have a material adverse effect on our results of operations.

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, and price. Some of our current and future competitors 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.

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 financial markets experienced significant disruptions in 2008 and the United States, European and other economies went into recession. The recovery from the lows of 2008 and 2009 was uneven and the global macroeconomic environment is facing new challenges, including the escalation of the European sovereign debt crisis since 2011, the hostilities in the Ukraine, and the end of quantitative easing by the U.S. Federal Reserve and the economic slowdown in the Eurozone in 2014. It is unclear whether these challenges will be contained and what effects they each may have.

Our business and operations are primarily based in China and most of our revenues are derived from our operations in China. Accordingly, our financial results have been, and are expected to continue to be, affected by the economy and data center services industry in China. Although the economy in China has grown significantly in the past decades, it still faces challenges. The Chinese economy has slowed down in recent years. According to the National Bureau of Statistics of China, China s gross domestic product (GDP) growth was 6.6% in 2018. 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. There is considerable uncertainty surrounding the policy decisions the Trump Administration in the United States will make, especially in regard to foreign policy, which may impact the relationship between China and the United States. There have been concerns over unrest and terrorist threats in the Middle East and Africa, which have resulted in volatility in oil and other markets, and over the conflicts involving Ukraine and Syria. There have also been concerns on the relationship among China and other countries, including surrounding Asian countries, which may potentially lead to foreign investors closing down their business or withdrawing their investment in China and thus existing the China market, and other economic effects. 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. Recently there have been signs that the rate of China s and global economic growth is declining. Any prolonged slowdown in the global or Chinese economy may have a negative impact on our business, results of operations and financial condition, and continued turbulence in the international markets may adversely affect our ability to access the capital markets to meet liquidity needs.

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 UK s relationship with the EU, with the UK currently due to exit the EU on March 29, 2019. Our customers who have significant operations in the U.K. 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 UK 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 UK 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 UK, the EU and elsewhere. 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.

Our business could be adversely affected by trade tariffs or other trade barriers.

In March 2018, U.S. President Donald J. Trump announced the imposition of tariffs on steel and aluminum entering the United States and in June 2018 announced further tariffs targeting goods imported from China. Recently both China and the U.S. have each imposed tariffs indicating the potential for further trade barriers. Although we do not currently export any products to the United States, it is not yet clear what impact these tariffs may have or what actions other governments, including the Chinese government may take in retaliation. 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.

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

We derived a majority of our revenues in 2018 from customers in China s internet industry, including online media, e-commerce, live broadcasting, social networking, online game companies, portals, search engines, mobile internet 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 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. The 2020 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, 2018, our total consolidated indebtedness and other liabilities representing total bank borrowings, bonds payable, accounts and notes payable and accrued expenses and other payables were RMB3,323.9 million (US$483.4 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.

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 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.

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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.

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 are planning to provide wholesale data center services for them. 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.

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. 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 and IBM, 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.

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 senior management has worked together for a relatively short period of time, which may make it difficult for you to evaluate their effectiveness and ability to address challenges.

Due to recent changes to our management team, certain of our senior management and employees have worked together at our company for a relatively short period of time. For example, we have experienced turnover in our senior management ranks and hired or appointed a number of executive officers and senior management, including our chief executive officer and president and chief financial officer in early 2018. In light of the foregoing circumstances, it may be difficult for you to evaluate the effectiveness of our senior management and their ability to address future challenges to our business. Members of our senior management may not work together effectively as a team to manage our growth successfully, which may expose us to a higher risk of internal control deficiencies and result in us losing market share, business opportunity and revenues.

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.

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. However, the success of our partnership is dependent on the ability of the joint venture to source new

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projects and deals. There is no guarantee that the joint venture will be able to source new projects, find appropriate project financing, negotiate favorable terms with the counterparties, adhere to scheduled timelines for project completion, or navigate the Chinese real-estate market efficiently. In addition, there may be delays in completion of current projects, caused by construction delays, budget overtures, prolonged negotiations with suppliers, contractors or government entities, among other things. The failure of our cooperation with Warburg Pincus to carry out new and current projects will cause us to continue making capital expenditures to maintain our growth. Furthermore, we cannot assure you that we will be able to continuously lease data center spaces from Warburg Pincus at a commercially reasonable price in the future, and it may lease its data centers to our competitors in its sole discretion. If we fail to maintain a good relationship with Warburg Pincus or extend our partnership after the expiration of the investment agreement, our results of operations could be materially and adversely affected.

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.

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, 2018 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 anti-corruption 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.

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, , 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

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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.

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.

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 28, 2019, options to purchase 1,226,568 ordinary shares and 3,260,324 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, 2018, we recorded RMB59.5 million (US$8.7 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.

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.

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

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 natural disasters or public health emergencies, such as the outbreak of avian influenza, severe acute respiratory syndrome, or SARS, the influenza A (H1N1) virus, Ebola virus, or another epidemic. Any outbreak of avian flu, SARS, H1N1, or their variations, or other adverse public health epidemic in China may have a material and adverse effect on our business operations. These occurrences could require the temporary closure of our offices or prevent our staff from traveling to our customers offices to provide on-site services. Such closures could severely disrupt our business operations and adversely affect our results of operations.

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.

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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.

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 to not 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 operational e-commerce), 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.

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;

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- 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.

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, 2016, 2017 and 2018, 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.

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. 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 March 15, 2019, the National People s Congress approved the Foreign Investment Law, which will come into effect on January 1, 2020 and replace 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.

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The Foreign Investment Law embodies 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 it is relatively new, uncertainties still exist in relation to its 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 Stale 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.

In addition, the Foreign Investment Law further specifies that foreign investments shall be conducted in line with the negative list issued by or approved to be issued by the State Council. If an FIE proposes to conduct business in an industry subject to foreign investment restrictions in the negative list, the FIE must meet certain conditions under the negative list before being established. If an FIE proposes to conduct business in an industry subject to foreign investment prohibitions in the negative list, it must not engage in the business. It is uncertain whether the industry of data center and providing value-added telecommunication services, in which our consolidated affiliated entities operate, will be subject to the foreign investment restrictions or prohibitions under the negative list to be issued. 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.

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 21Vianet Beijing by the MIIT on January 17, 2012 (which was latest updated on December 18, 2018) with a term effective until January 23, 2022, 21Vianet Beijing is permitted to carry out its (i) data center business under the first category of value-added telecommunications business in Beijing; (ii) data center business (excluding internet resources coordination service) under the first category of value-added telecommunications business across 3 province-level municipalities and 18 cities in China; (iii) VPN services under the first category of value-added telecommunications business across 3 province-level municipalities and 2 cities in 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 6 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.

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 the 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 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 June 4, 2018) 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 (excluding internet resources coordination service) under the first category of value-added telecommunications business , which covers the service in Beijing, Shanghai and Shenzhen; and (iv) internet access service under the first category of value-added telecommunications business across 3 province-level municipalities and provinces in China.

Pursuant to the VAT License issued to SH Blue Cloud by Shanghai Communications Administration on October 20, 2017 (which was updated on June 26, 2018 to revise the categories of permitted business) with a term effective until October 20, 2022, SH Blue Cloud is permitted to carry out the information service business (limited to internet information service) under the second category of value-added telecommunications business in Shanghai. In addition, pursuant to the Cross-Regional VAT License issued to SH Blue Cloud by the MIIT on May 18, 2018 with a term effective until February 15, 2020, SH Blue Cloud is permitted to carry out (i) full 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; (iv) internet access service under the first category of value-added telecommunications business in Beijing and Shanghai; (v) store-and-forward business under the second category of value-added telecommunications business in China; and (vi) domestic call center business under the second category of value-added telecommunications business in China.

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, SH Blue Cloud and SZ DYX, and the VAT License issued to BJ Yilong 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 Yilong, SZ DYX and SH Blue Cloud 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.

In addition, MIIT initiated a periodical pilot scheme for mobile network resale business by issuing the Notice on Carrying out Pilot Work of Mobile Network Resale Business on May 17, 2013, or the Pilot Work Notice, pursuant to which, the qualified private sector enterprises are encouraged, but not required, to apply to participate in the pilot scheme in mobile network resale business and the pilot scheme only lasts for a short period ending on December 31, 2015. 21Vianet Beijing has voluntarily applied to participate in the pilot scheme and obtained approval on August 18, 2014, with a term expiring on December 31, 2015. Following expiration of the Pilot Work Notice, MIIT did not extend the effective period of the pilot scheme or issue a long-term regulation. The mobile network resale business continues and MIIT issued a guideline on January 6, 2016 to regulate the wholesale price in the mobile network resale business. In April 2018, MIIT published the Notice on Official Commercialization of Mobile Network Resale Business, or the Mobile Network Resale Business Notice, to officially commercialize the resale business of mobile network from May 1, 2018. Pursuant to the Mobile Network Resale Business Notice, an approved mobile network resale business operator under the aforementioned pilot scheme must renew the existing cooperation contract with a basic telecommunication service provider and apply for and obtain the applicable telecommunication business operation license. During the application period, a pilot enterprise may continue to carry out its mobile network resale business. However, if the basic telecommunication service provider terminates its cooperation with the pilot enterprise, or the pilot enterprise fails to obtain the applicable telecommunication business operation license before April 28, 2020, the pilot enterprise must terminate its mobile network resale business. We have entered into a cooperation contract with a basic telecommunication service provider for mobile resale business, and we plan to apply for the required telecommunication business operation license. However, we cannot assure you that we will be able to timely obtain the telecommunication business operation license or maintain all the permits and qualifications to conduct mobile network resale business on a continuous basis. If we are not able to continue our mobile network resale business, our business, financial condition and results of operations may be adversely affected.

MIIT initiated another 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 and have provided broadband access services in Beijing.

We believe such pilot schemes and the official commercialization of the mobile network resale business represent 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 Work Notice also specifically mentioned that the mobile network resale business is a second-category basic telecommunication business rather than a value-added telecommunication business. These pilot schemes and the official commercialization of the mobile network resale business, to some extent, reflect 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 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.

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.

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, 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.

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.

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, which became effective on January 1, 2008, 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, 2016, 2017 and 2018, the tax rate assessed for Xi an Sub was 25%, 25% and 15%, respectively.

For the year ended December 31, 2018, 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

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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.

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.

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 became effective on June 1, 2015. 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.

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 PRC government allowed the Renminbi to appreciate by more than 20% against the U.S. dollar between July 2005 and July 2008. Between July 2008 and June 2010, this appreciation was halted and the exchange rate between the Renminbi and the U.S. dollar remained within a narrow band. As a consequence, the Renminbi fluctuated significantly during that period against other freely traded currencies, in tandem with the U.S. dollar. 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, 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.

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.

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 2018, the trading prices of our ADSs have ranged from US$5.01 to US$11.98 per ADS, and the last reported closing price on March 26, 2019 was US$8.17 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;

announcements of new services by us or our competitors;

- 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;
- fluctuations of exchange rates between the Renminbi and the U.S. dollar or other foreign currencies;
- announcements by us or our competitors of 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 dual-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 dual-class voting structure such that our ordinary shares consist of Class A ordinary shares and Class B 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 holders of Class B ordinary shares are entitled to ten votes per share. Each Class B ordinary share is convertible into one Class A ordinary share at any time by the holder thereof, while Class A ordinary shares are not convertible into Class B ordinary shares or preferred shares under any circumstances. Upon any transfer of Class B ordinary shares by a holder thereof to any person or entity which is not an affiliate of such holder, such Class B 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 two classes, holders of our Class B ordinary shares have significant voting power over matters requiring shareholder 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.

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 United States federal income tax purposes for our taxable year ended December 31, 2018 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.

A non-U.S. corporation, such as our company, will be considered a PFIC for United States 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 United States 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, 2018 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 United States Federal Income Tax Considerations General) may incur significantly increased United States 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 United States federal income tax rules. For more information, see Item 10.E. Additional Information Taxation United States 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.

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 (2018 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 dual-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.

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

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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:

- In October 2016, we launched IBM cloud services which are now generally available in China. The deepening partnership will expand IBM ecosystem in China and the Internet of things, or IoT, innovation.

- 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. We have committed to seed the initial JV with four existing high-performing IDC assets, valued at over US$300 million, and Warburg Pincus has committed to contribute direct capital and extensive industry network and resources in the real estate sector. We will continue to own 51% of the equity interests in the four existing IDC assets while Warburg Pincus will own the remaining 49%. With respect to further projects to be developed by the joint venture, we will initially own 49% of the equity interests and Warburg Pincus will initially own 51% of the equity interests.

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.

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.

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.

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 dated 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 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 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 20 self-built data centers and 38 partnered data centers located in over 20 cities, including substantially all of China s major internet hubs with 30,654 cabinets under management that house 180,177 servers as of December 31, 2018. 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 to time. Our data transmission network includes 172 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.

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 and Office 365 services. Our average monthly hosting churn rate, based on our core internet data center (IDC) business, was 0.7%, 0.5% and 0.3% in 2016, 2017 and 2018, respectively. Our average monthly recurring revenue from our top 20 customers has increased from RMB74.8 million in 2016 to RMB96.4 million in 2017 and to RMB105.9 million (US$15.4 million) in 2018.

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, VPN services, hybrid IT services and other value-added services as part of our hosting and related services business.

Our hosting and related services including the following:

Managed Hosting Services (Colocation Services) that dedicate data center space to house our customers servers and networking equipment and provide tailored server administration services;

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;

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;

VPN Services, or virtual private network services that extend customers private networks by setting up secure and dedicated connections through the public internet;

Hybrid IT Services that provide customers with a complete package of infrastructure service offerings that are conveniently bundled together; and

Other Value-Added Services, including firewall services, server load balancing, data backup and recovery, data center management, server management, and backup server services.

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.

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 (Colocation Services)

Our managed hosting 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. Managed hosting service relieves 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

We provide internet services in the following ways:

Border Gateway Protocol (BGP) Network Services. We provide network services that use BGP routing protocol and policies. BGP exchanges routing information for the internet and is the protocol used between ISPs, backing the core routing decisions on the internet. Customers connect to ISPs, and ISPs use BGP to exchange customer and ISP routes, bypassing major internet exchanges. This allows the internet to become a decentralized system, thereby reduces traffic congestion and data transmission time. BGP network is generally considered a premium network service due to its improved internet connectivity and data reachability.

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 because when one line is down or interrupted, the other line can still provide internet connectivity.

Multiple-Line Network Services. As a carrier-neutral service provider, our data centers are connected to all carrier and non-carrier networks in China, namely, China Telecom, China Unicom, China Mobile, China Education Network, and China Science and Technology Network. 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.

Cloud Services

We started providing public cloud services in 2013 and private and hybrid cloud services in 2014,

Public Cloud Services. 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.

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. In particular, we (i) provide the infrastructure of IBM Cloud combined with the latest technologies of IBM (ii) are responsible for the end-to-end operation of IBM Cloud in China; and (iii) provide a comprehensive set of services, such as IoT and Cloudant, to China s burgeoning developer community. Our services provided a set of tools for China s software developers to efficiently develop new apps and technologies based on readily available models.

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 customers a comprehensive portfolio of customized VPN solutions for both enterprise customers seeking multi-point connectivity and carrier customers seeking to provision off-net customer locations. With over 60 POPs across China, Hong Kong, Singapore, Taiwan and Vietnam, Dermot Entities provide fully-managed network enabling connectivity to more than 700 cities in the region for many blue-chip customers across many verticals, including manufacturing, logistics, retail, financial services, eSports, real estate, food and beverage and technology.

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.

Other Value-Added Services

To complement our hosting services and enhance our customers experiences, we also provide value-added services, including firewall services, server load balancing, data backup and recovery, data center management, server management, and backup server services.

Firewall Services. Customers can lease our hardware firewalls, which can be configured according to their specific requirements. Hardware firewalls protect servers from outside attacks and other unlawful invasions. We notify our customers promptly once we find out that their servers are under attack or subject to invasion.

Server Load Balancing Services. When websites experience significant traffic increases, servers may not be able to respond timely to visiting requests. Our server load balancing services are designed to address this issue by providing load balancing facilities to share the increased traffic and therefore moderate the burden on main servers of our customers.

Data Backup and Recovery Services. We provide data backup services to our customers to recover any lost or damaged data.

Server Management Services. Our server management services allow customers to engage the services of our data center staff to handle problems that occur to their servers. At the customers request, our staff can fix operating system issues, perform emergency equipment replacement and other tasks related to the servers housed in our data centers. These services help customers minimize network outages and improve response and repair times.

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. DDOS attack is an attempt to make a computer s resource unavailable to its intended users. We generally charge fees for our various types of interconnectivity services at the end of each month based on the customers bandwidth usage.

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, 2018, we operate 20 self-built data centers and 38 partnered data centers located in over 20 cities, including all of China s major internet hubs, with 30,654 cabinets under management that house 180,177 servers. Our extensive network, consisting of 172 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, 2018, we operate 20 self-built data centers housing 25,711 cabinets and 38 partnered data centers housing 4,943 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, 2016, 2017 and 2018.

	As of December 31,		
	2016	**2017**	**2018**
Data Centers	81	57	58
Cabinets			
Self-built	19,294	23,823	25,711
Partnered	7,086	5,257	4,943
Total	26,380	29,080	30,654
Servers	132,648	163,187	180,177

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 1,151 gigabits per second to nearly all locations. As of December 31, 2018, our network connects 172 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, 2016, 2017 and 2018.

	As of and for the year ended December 31,		
	2016	**2017**	**2018**
Number of POPs	706	476	172
Estimated Network Service Capacity*	4,641	1,032	1,151

* *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 and Office 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 21% of our total net revenues in 2018.

As of December 31, 2018, we had over 5,000 enterprise customers for our hosting and related services, among which 22 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 4%, 2% and 4% of our total revenues, respectively, in 2016, 2017 and 2018, 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 0.7%, 0.5% and 0.3% in 2016, 2017 and 2018, respectively. Our average monthly recurring revenue from our top 20 customers were RMB74.8 million, RMB96.4 million and RMB105.9 million (US$15.4 million) in 2016, 2017 and 2018, 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.

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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	Mobile internet	Azure and Office 365 customers	Enterprise VPN
Damai	iQIYI	Meituan	Lvmama	Toutiao	DongFeng-Renault	iKang
Fang	Chineseall	Zhaogang	Qunar	Firefox	Cfwin	Shuttle
Baixing	Mgtv	Jiuxian	Renren	Droi	Yungoal	Ryosan
58	Kuwo	Kongfz	Jiayuan	Hurray!	Pactera	Cheetah Mobiles

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 62 patents, 42 patent applications and 70 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 pocket 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.

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 54.2% of the data center services market in 2017. 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 and Office 365, operated by 21Vianet, a leading global public cloud service platform as well as IBM cloud service, operated by 21Vianet, a leading global private cloud service platform. We believe our partnerships with Microsoft and IBM 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.

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 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. In December 2015, the Catalog was updated and came into force on March 1, 2016, pursuant to which 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 latest updated on December 18, 2018) with a term effective until January 23, 2022. It is permitted to carry out its (i) data center business under the first category of value-added telecommunications business in Beijing; (ii) data center business (excluding internet resources coordination service) under the first category of value-added telecommunications business across 3 province-level municipalities and 18 cities in China; (iii) VPN services under the first category of value-added telecommunications business across 3 province-level municipalities and 2 cities in 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 6 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.

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 .

SZ DYX holds a Cross-Regional VAT License issued by the MIIT on September 18, 2013 (which was updated on June 4, 2018) 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 (excluding internet resource coordination service) under the first category of value-added telecommunications business , which covers the service in Beijing, Shanghai and Shenzhen; and (iv) internet access service under the first category of value-added telecommunications business across 3 province-level municipalities and provinces in China.

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SH Blue Cloud holds a VAT License issued by Shanghai Communications Administration on October 20, 2017 (which was updated on June 26, 2018 to revise the categories of permitted business) with a term effective until October 20, 2022, pursuant to which SH Blue Cloud is permitted to carry out the information service business (limited to internet information service) under the second category of value-added telecommunications business in Shanghai. In addition, SH Blue Cloud holds the Cross-Regional VAT License issued by the MIIT on May 18, 2018 with a term effective until February 15, 2020, pursuant to which SH Blue Cloud is permitted to carry out (i) full 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; (iv) internet access service under the first category of value-added telecommunications business in Beijing and Shanghai; (v) store-and-forward business under the second category of value-added telecommunications business in China; and (vi) domestic call center business under the second category of value-added telecommunications business in China.

MIIT initiated a periodical pilot scheme for mobile network resale business by issuing the Pilot Work Notice, pursuant to which, the qualified private sector enterprises are encouraged, but not required, to apply to participate in the pilot scheme in mobile network resale business and the pilot scheme only lasts for a short period ending on December 31, 2015. 21Vianet Beijing has voluntarily applied to participate in the pilot scheme and obtained approval on August 18, 2014, with a term expiring on December 31, 2015. Following expiration of the Pilot Work Notice, MIIT did not extend the effective period of the pilot scheme or issue a long-term regulation. The mobile network resale business continues and MIIT issued a guideline on January 6, 2016 to regulate the wholesale price in the mobile network resale business. In April 2018, MIIT published the Notice on Official Commercialization of Mobile Network Resale Business, or the Mobile Network Resale Business Notice, to officially commercialize the resale business of mobile network from May 1, 2018. Pursuant to the Mobile Network Resale Business Notice, an approved mobile network resale business operator under the aforementioned pilot scheme must renew the existing cooperation contract with a basic telecommunication service provider and apply and obtain for the applicable telecommunication business operation license. During the application period, a pilot enterprise may continue to carry out its mobile network resale business. However, if the basic telecommunication service provider terminates its cooperation with the pilot enterprise, or the pilot enterprise fails to obtain the applicable telecommunication business operation license before April 28, 2020, the pilot enterprise must terminate its mobile network resale business.

MIIT initiated another 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 and have provided broadband access services in Beijing.

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 from the government authorities.

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.

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 2018 allow a foreign investor to own more than 50% of the total equity interest in online data processing and transaction processing businesses (Operational E-commerce) , 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

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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.

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. Due to a lack of interpretations from the regulator, it remains unclear what impact this circular would have on us.

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 rend 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.

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 was amended on May 29, 2016, and its Implementation Rules was issued by SAFE on January 5, 2007 and became effective on February 1, 2007. 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.

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 became effective on June 1, 2015. 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 October 10, 2018, 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 Printing and Distributing 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 October 10, 2018, 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.

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.

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.

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 holds 100% of the equity interests in BJ iJoy and is a party to the contractual agreements through which we conduct our operations in China.

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. They are also PRC citizens and therefore, our variable interest entities are considered as domestic companies under the PRC laws. For the years ended December 31, 2016, 2017 and 2018, our consolidated affiliated entities contributed most of our total net revenues.

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.

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.

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, 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, 2018, our offices occupied an aggregate of 34,754 square meters of leased space.

In Beijing, we also lease facilities for our self-built data centers located: (i) in the Chaoyang District, through three lease agreements with BOE Technology Group Co., Ltd., or BOE Technology, one lease agreement with Beijing Seven Star Technology Group Co., Ltd., one lease agreement with Telehouse Beijing BEZ Data Centre, and six lease agreements 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., and (iii) in the Daxing District, through a lease agreement with Beijing Xingguang Tuocheng Investment Co., Ltd.. These leases provide an aggregate of approximately 75,637 square meters of leased space and host a total of 11,472 cabinets as of December 31, 2018. The three leases with BOE Technology one all expiring on August 31, 2019. The lease with Beijing Seven Star Technology Group Co., Ltd. has a term of 5 years expiring on January 6, 2022. The lease with Telehouse Beijing BEZ Data Center has a term of 10 years expiring on March 31, 2027. The leases may be renewed upon mutually agreed-upon terms before they expire. Each of the six leases with China Youth Printing Factory has a term of 5 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. In 2018, we entered into a lease with Beijing Tuspark Harmonious Investment Development Co., Ltd., a subsidiary of Tus Holdings, which has a term of 20 years expiring on September 27, 2038 and will automatically extend for another 20 years, and the cabinets and equipment in this premise are still under construction.

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. and a lease agreement with Shenzhen Toukong Industrial Park Development and Operation Co., Ltd.. These leases provide an aggregate of approximately 4,347 square meters of leased space and hosted a total of 736 cabinets as of December 31, 2018. The two leases with Shenzhen Merchants Property Development Co., Ltd. both have a term of 47 months expiring on September 30, 2015, which has 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.

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, 2018. 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 31,2018. 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, 2018. The lease has a term of twenty years expiring on July 31, 2031, subject to our pre-emptive right to renew the lease.

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 1,516 cabinets as of December 31, 2018. The lease has a term of 10 years expiring on December 31, 2024.

We have also built our own data centers in our self-owned buildings in Beijing, Xi an, Shanghai, Foshan, Guangzhou, Suzhou and Ningbo, housing 8,318 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 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.

Our total net revenues generated from providing hosting and related services increased from RMB2,668.7 million in 2016 to RMB2,975.2 million in 2017 and further to RMB3,401.0 million (US$494.7 million) in 2018, representing a CAGR of 12.9% from 2016 to 2018. The total number of cabinets under our management increased from 26,380 as of December 31, 2016 to 29,080 as of December 31, 2017 and to 30,654 as of December 31, 2018. Our average monthly recurring net revenues from hosting and related services increased from RMB204.2 million in 2016 to RMB235.9 million in 2017 and further to RMB275.4 million (US$40.1 million) in 2018. We recorded a net loss of RMB931.9 million, RMB917.6 million and RMB186.7 million (US$27.2 million) in 2016, 2017 and 2018, respectively, which reflected share-based compensation expenses of RMB118.7 million, RMB47.1 million and RMB59.5 million (US$8.7 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$10.7 billion in 2017, a 35.9% year over year growth rate, and is expected to reach US$35.4 billion in 2022, representing a five-year CAGR of 27.1%. 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 26,380, 29,080 and 30,654 cabinets under management as of December 31, 2016, 2017 and 2018, respectively. Our annualized average monthly cabinet utilization rates were 76.0%, 75.3% and 70.6% in 2016, 2017 and 2018, 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

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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.

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 RMB204.2 million in 2016 and to RMB235.9 million in 2017 and further to RMB275.4 million (US$40.1 million) in 2018.

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 0.7% in 2016, 0.5% in 2017 and 0.3% in 2018.

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 in 2016, 2017 and 2018. 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.

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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, Hangzhou, Jiangsu, Xi an, Suzhou and the Greater Guangzhou 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.

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.

	For the Year Ended December 31,						
	2016		2017		2018		
	RMB	%	RMB	%	RMB	USD	%
	(in thousands, except percentages)						
Net revenues:							
Hosting and related services	2,668,655	73.3	2,975,178	87.7	3,401,037	494,660	100.0
Managed network services	973,119	26.7	417,527	12.3			
Total net revenues	3,641,774	100.0	3,392,705	100.0	3,401,037	494,660	100.0

Hosting and Related Services

Hosting and related services have been our primary sources of revenues. 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, VPN services, hybrid IT services and other value-added services as part of our hosting and related services business. Revenues from our hosting and related services were RMB2,668.7 million, RMB2,975.2 million and RMB3,401.0 million (US$494.7 million) in 2016, 2017 and 2018, respectively, representing 73.3%, 87.7% and 100% of our total net revenues in the respective periods.

We generally enter into contracts with our customers with terms ranging from one to three years and most of our customer contracts have an automatic renewal provision. Customers generally pay our service fees on a monthly basis according to the amount of hosting spaces, the bandwidth and other value-added services they used or leased in the previous month.

Managed Network Services

Revenues from our managed network services decreased in absolute amounts from RMB1,265.1 million in 2015 to RMB973.1 million in 2016, as a percentage of total net revenues, revenues from our managed network services decreased from 34.8% in 2015 to 26.7% in 2016.

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.

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 Year Ended December 31,						
	2016		2017		2018		
	RMB	%	RMB	%	RMB	US$	%
	(in thousands, except percentages)						
Cost of revenues:							
Telecommunications costs	1,811,565	49.7	1,533,615	42.5	1,332,280	193,772	39.2
Others	1,118,073	30.7	1,100,680	35.1	1,123,886	163,463	33.0
Total cost of revenues	2,929,638	80.4	2,634,295	77.6	2,456,166	357,235	72.2

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 Year Ended December 31,						
	2016		2017		2018		
	RMB	%	RMB	%	RMB	US$	%
	(in thousands, except percentages)						
Cost of revenues:							
Hosting and related services	1,936,658	72.6	2,130,279	71.6	2,456,166	357,235	72.2
Managed network services	992,980	102.0	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.

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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 Year Ended December 31,						
	2016		2017		2018		
	RMB	% of Net Revenues	RMB	% of Net Revenues	RMB	US$	% of Net Revenues
	(in thousands, except percentages)						
Operating expenses:							
Sales and marketing expenses[1]	352,926	9.7	256,682	7.6	172,176	25,042	5.1
Research and development expenses[1]	149,337	4.1	149,143	4.4	92,109	13,397	2.7
General and administrative expenses[1]	639,648	17.6	519,950	15.3	462,637	67,288	13.5
Allowance/(reversal) for doubtful debt	117,564	3.2	37,427	1.1	(598)	(87)	(0.0)
Changes in the fair value of contingent purchase consideration payable	(93,307)	(2.6)	937	0.0	(13,905)	(2,022)	(0.4)
Impairment of long-lived assets	392,947	10.8	401,808	11.8			
Impairment of goodwill			766,440	22.6			
Operating income	(6,783)	(0.2)	(5,439)	(0.2)	(5,027)	(731)	(0.1)
Total Operating Expenses[1]	1,552,332	42.6	2,126,948	62.6	707,392	102,887	20.8

Note:

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

	2016	2017	2018	
	RMB	RMB	RMB	US$
	(in thousands)			
Allocation of share-based compensation expenses:				
Sales and marketing expenses	2,490	(681)	2,139	311
Research and development expenses	(2,924)	142	1,385	201
General and administrative expenses	123,273	47,945	53,346	7,759
Total share-based compensation expenses	122,839	47,406	56,870	8,271

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.

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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 28, 2019, options to purchase 1,226,568 ordinary shares and 3,260,324 RSUs have been granted to our employees, directors and consultants. We recorded share-based compensation expenses in the amount of RMB122.8 million, RMB47.4 million and RMB56.9 million (US$8.3 million) for the year ended December 31, 2016, 2017 and 2018, respectively, in connection with our share-based incentive grants.

Taxation

The Cayman Islands

The Cayman Islands currently does not levy taxes on individuals or corporations based upon profits, income, gains or appreciation and there is no taxation in the nature of inheritance tax or estate duty. There are no other taxes likely to be material to our company levied by the government of the Cayman Islands, except for stamp duties that may be applicable on instruments executed in, or after execution brought within the jurisdiction of, the Cayman Islands. The Cayman Islands is not a party to any double taxation treaties that are applicable to any payments made to or by our company. There are no exchange control regulations or currency restrictions in the Cayman Islands. Additionally, upon payments of dividends by our company to the shareholders, no Cayman Islands withholding tax will be imposed.

The British Virgin Islands

The Company and all dividends, interest, rents, royalties, compensation and other amounts paid by the Company to persons who are not resident in the BVI and any capital gains realized with respect to any shares, debt obligations, or other securities of the Company by persons who are not resident in the BVI are exempt from all provisions of the Income Tax Ordinance in the BVI.

No estate, inheritance, succession or gift tax, rate, duty, levy or other charge is payable by persons who are not resident in the BVI with respect to any shares, debt obligation or other securities of the Company.

All instruments relating to transfers of property to or by the Company and all instruments relating to transactions in respect of the shares, debt obligations or other securities of the Company and all instruments relating to other transactions relating to the business of the Company are exempt from payment of stamp duty in the BVI. This assumes that the Company does not hold an interest in real estate in the BVI.

There are currently no withholding taxes or exchange control regulations in the BVI applicable to the Company or its members.

Hong Kong

Our Hong Kong subsidiaries are subject to Hong Kong profits tax at a rate of 16.5% for the three years ended December 31, 2016, 2017 and 2018. Our Hong Kong subsidiaries may be exempted from income tax on their foreign-derived income and there are no withholding taxes in Hong Kong on remittance of dividends.

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Taiwan

The Taiwan branch of Diyixian.com Limited is incorporated in Taiwan and is subject to Taiwan profits tax rate of 17% for the year ended December 31, 2016, 2017 and 2018.

The PRC

Our PRC subsidiaries are subject to PRC EIT on their taxable income in accordance with the relevant PRC income tax laws.

Effective from January 1, 2008, the statutory corporate income tax rate is 25%, except for certain entities eligible for preferential tax rates.

21Vianet Beijing has been qualified for an HNTE since 2008 and will continue to enjoy a preferential tax rate through 2019. For the years ended December 31, 2016, 2017 and 2018, 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. This qualification will need to be assessed on an annual basis. For the years ended December 31, 2016, 2017 and 2018, the tax rate assessed for Xi an Sub was 25%, 25% and 15%, respectively.

In 2015, SH Blue Cloud was recognized as an HNTE and is eligible for a 15% preferential tax rate effective from 2015 to 2017. The HNTE certificate was renewed in 2018 and will expire in October 2021. For the years ended December 31, 2016, 2017 and 2018, SH Blue Cloud enjoyed a preferential tax rate of 15%.

In 2016, SZ DYX was qualified as an HNTE and is eligible for a 15% preferential tax rate effective from 2016 to 2018, and thereafter for an addition three years if it is able to meet the HNTE technical and administrative requirements in those three years. For the years ended December 31, 2016, 2017 and 2018, SZ DYX enjoyed a preferential tax rate of 15%.

Our other PRC subsidiaries were subject to an EIT rate of 25% for the years ended December 31, 2016 and 2017. For the year ended December 31, 2018, 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%. Some of our PRC subsidiaries can enjoy such reduced EIT rate as their financial data are determined to meet the standard of small scale and low profit enterprise when filing with the tax bureau.

Under the EIT Law, dividends paid by PRC enterprises out of profits earned after 2007 to non-PRC tax resident enterprises are subject to PRC withholding tax of 10%. A lower withholding tax rate may be applied based on applicable tax treaty with certain countries or districts.

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, 2017, no detailed interpretation or guidance has been issued to define place of effective management . Furthermore, as of December 31, 2017, the administrative practice associated with interpreting and applying the concept of place of effective management is unclear. If we are deemed as a PRC tax resident, we would be subject to PRC tax under the EIT Law. We 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.

Critical Accounting Policies

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of our consolidated financial statements requires us to make estimates and judgments that affect the reported amounts in our consolidated financial statements. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Although actual results have historically been reasonably consistent with management s expectations, actual results may differ from these estimates or our estimates may be affected by different assumptions or conditions.

Some of our accounting policies require higher degrees of judgment than others in their application. When reviewing our consolidated financial statements, you should consider (i) our selection of critical accounting policies, (ii) the judgment and other uncertainties affecting the application of such policies and (iii) the sensitivity of reported results to changes in conditions and assumptions. We consider the policies discussed below to be critical to an understanding of our consolidated financial statements as their application places significant demands on the judgment of our management. We believe the following critical accounting policies are the most significant to the presentation of our financial statements and some of which may require the most difficult, subjective and complex judgments and should be read in conjunction with our consolidated financial statements, the risks and uncertainties described under Risk Factors and other disclosures included in this annual report.

Revenue Recognition

We provide hosting and related services including hosting of customers servers and networking equipment, connecting customers servers with internet backbones 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.

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, 2017 and 2018, we have deferred revenue amounting up to RMB55.8 million and RMB57.8 million (US$8.4 million), respectively. The increase in deferred revenue as compared to the year ended December 31, 2017 is a result of the increase in consideration received from the customers. Revenue recognized from opening deferred revenue balance was RMB45.5 million (US$6.6 million) for the year ended December 31, 2018.

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 debt investments, share-settled bonus, liability-classified restricted share units and the contingent purchase consideration payable included in the balances with related parties. Other than the bonds payable, long-term bank borrowings, share-settled bonus and the contingent purchase consideration payable included in the balances with related parties, the carrying values of these financial instruments approximate their fair values due to their short-term maturities.

The carrying amounts of long-term bank borrowings approximate their fair values since they bear interest rates which approximate market interest rates. The contingent purchase considerations in both cash and shares and share-settled bonus are initially measured at fair value on the acquisition dates of the acquired businesses and the date of grant, respectively, and subsequently re-measured at the end of each reporting period with an adjustment for fair value recorded to the current period income.

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 data center services across nine 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.

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.

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.

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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. Prior to the change in segment reporting in 2016, we had one single reporting unit which is also its only operating segment. Goodwill that has arisen as a result of the acquisitions of subsidiaries was assigned to this reporting unit. Immediately upon the change in segment reporting in 2016, 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.

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, we elected to perform a qualitative assessment for hosting and related services. As of October 1, 2018, we completed the annual impairment test for goodwill that has arisen out of its 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 we were 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, 2016, 2017 and 2018, respectively.

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, 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 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,			
	2016	**2017**	**2018**	
	RMB 000	**RMB 000**	**RMB 000**	**US$ 000**
Impairment of property and equipment	238,144	237,956		
Impairment of intangible assets	154,803	163,852		

Leases

Leases are classified at the inception date as either a capital lease or an operating lease. We did not enter into any leases whereby we are the lessor for any of the periods presented. As the lessee, a lease is a capital lease if any of the following conditions exists: a) ownership is transferred to the lessee by the end of the lease term, b) there is a bargain purchase option, c) the lease term is at least 75% of the property s estimated remaining economic life, or d) the present value of the minimum lease payments at the beginning of the lease term is 90% or more of the fair value of the leased property to the lessor at the inception date. A capital lease is accounted for as if there was an acquisition of an asset and an incurrence of an obligation at the inception of the lease. We entered into capital leases for certain optical fiber, computer and network equipment and property in the years ended December 31, 2016, 2017 and 2018.

All other leases are accounted for as operating leases wherein rental payments are expensed on a straight-line basis over the periods of their respective lease terms. We lease office space and employee accommodation under operating lease agreements. Certain lease agreements contain rent holidays and escalating rent. Rent holidays and escalating rent are considered in determining the straight-line rent expense to be recorded over the lease term. The lease term begins on the date of initial possession of the lease property for purposes of recognizing lease expense on a straight-line basis over the term of the lease.

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 740, *Accounting for Income Taxes*, 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 in the consolidated statements of operations.

On January 1, 2017, we adopted ASU No. 2015-17, *Income Taxes (Topic 740): Balance Sheet Classification of Deferred Taxes*, and classified all deferred income tax assets as noncurrent on the consolidated balance sheets on a retrospective basis.

Share-based Compensation

Share options and Restricted Share Units (RSUs) granted to employees are accounted for under ASC 718, *Compensation Stock Compensation*, 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 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.

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For the performance bonuses that the employees can elect to settle in cash and/or restricted shares at an agreed premium of us (Share-Settled Bonus), we estimate the portion of the arrangement to be settled shares based on our past settlement practices and classify such portion as a liability in accordance with ASC topic 480 (ASC 480), *Distinguishing Liabilities from Equity*. We re-measure the fair value of such liability at each reporting period end through earnings until the underlying shares were 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-Others in the consolidated balance sheets until the end of the six months lock-up period as such amounts will be paid to the employees in cash upon the termination of their employment. The fair value of the premium will be reclassified to additional paid in capital and recognized over the remaining lock-up period using the accelerated method, respectively.

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.

On April 15, 2016 (the Modification date), we made revisions to the Share-Settled Bonus to remove the agreed premium and six month lock-up period for the employees above a specified level and the option to settle in share for the employees below a specified level. The modified awards remain as liabilities in accordance with ASC 718 as we can only settle the Share-Settled Bonus by issuing variable number of shares until the settlement date or in cash. 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.

On November 26, 2016, the Board approved a new incentive program to replace unvested RSUs 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 modification was treated as an equity to liability modification in accordance with ASC 718. We re-measure 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 incremental cost over the remaining vesting term and the unrecognized compensation of original awards using the new term.

On January 1, 2017, we adopted ASU No. 2016-09, *Improvements to Employee Share-Based Payment Accounting*, and elected to account for forfeitures as they occur.

Segment Reporting

In accordance with ASC 280 Segment Reporting (ASC 280), we historically had only one single reportable segment since our chief executive officer, who has been identified as our chief operating decision-maker (CODM) formerly relied on the consolidated results of operations when making decisions on allocating resources and assessing performance of us. On October 1, 2016, we changed our reportable segments as the CODM now reviews the operating result of two different services in order to allocate resources and assess performance of us. The operations of us are organized into two segments, consisting of the Hosting and related services and Managed network services. Hosting and related services includes the data center and related businesses such as IDC, Cloud and VPN. Managed network services includes CDN, MNS, hosting area network services and last-mile wired broadband service.

In September 2017, we disposed of WiFire Entities and Aipu Group, which are primarily engaged in the managed network services. After the disposals, the CODM reviews the operation results on our basis. As of December 31, 2017 and 2018, we only has one reporting segment.

Recently Issued Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*, (ASU 2016-02), which requires a lessee to recognize a lease liability and a right-of-use asset for all leases with lease terms of more than 12 months. This guidance is effective for annual reporting periods beginning after December 15, 2018, including interim periods within those years, and early adoption is permitted. In January 2018, the FASB issued ASU No. 2018-01, *Leases: Land Easement Practical Expedient*, (ASU 2018-01), which provides an optional transition practical expedient for land easements. The effective date of the transition requirements for the amendment is the same as the effective date and transition requirements in ASU 2016-02. Subsequently, the FASB issued ASU No. 2018-10, *Codification Improvements to Topic 842, Leases*, (ASU 2018-10), which clarifies certain aspects of the guidance issued in ASU 2016-02; and ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements*, (ASU 2018-11), which provides an additional transition method and a practical expedient for separating components of a contract for lessors. ASU 2016-02 modifies existing guidance for off balance sheet treatment of lessees operating leases by requiring lessees to recognize lease assets and lease liabilities. Under ASU 2016-02, lessor accounting is largely unchanged. ASU 2018-10 clarifies certain provisions and correct unintended applications of the guidance such as the application of implicit rate, lessee reassessment of lease classification, and certain transition adjustments that should be recognized to earnings rather than to stockholders equity. ASU 2018-11 provides an alternative transition method and practical expedient for separating contract components for the adoption of Topic 842. ASU 2018-11, ASU 2018-10, and ASU 2016-02 (collectively, the new lease standards) are effective for public business entities for annual reporting periods and interim periods within those years beginning after December 15, 2018. These new lease standards become effective for us on January 1, 2019. We will adopt this standard effective January 1, 2019 using the modified retrospective method, and chose to apply the new standard as of the effective date and will not restate comparable period. Consequently, all of our operating lease commitments were recognized as lease liabilities, with corresponding right-of-use assets, based on the present value of the remaining minimum rental payments under current leasing standards for existing operating leases. We will elect the package of practical expedients permitted under the transition guidance within the new standard, which permits us not to reassess under the new standard its prior conclusions about lease identification, lease classification and initial direct costs. Our operating leases mainly related to offices and data center space will be subject to ASU 2016-02 and right-of-use assets and lease liabilities will be recognized on our consolidated balance sheet. We currently believe the most significant change will be related to the recognition of right-of-use assets and lease liabilities on our balance sheet for operating leases. We do not expect any material impact on net assets and the consolidated statement of comprehensive loss as a result of adopting the new standard.

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. Early adoption is permitted. We are evaluating the effect that this guidance will have on its consolidated financial statements.

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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 are evaluating the impact of adopting this new standard will have on its consolidated financial statements.

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 2016, 2017 and 2018 were 2.0% and 1.6% and 2.1%, respectively. The year-over-year percent changes in the consumer price index for January 2017, 2018 and 2019 were increases of 2.5%, 1.5% and 1.7%, 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.

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Results of Operations

The following table sets forth a summary of our consolidated results of operations for the periods indicated both in absolute amount and as a percentage of our total net revenues. This information should be read together with our consolidated financial statements and related notes included elsewhere in this annual report. The results of operations in any period are not necessarily indicative of the results you may expect for future periods.

	For the Year Ended December 31,						
	2016		2017		2018		
	RMB	%	RMB	%	RMB	USD	%
	(in thousands, except percentages)						
Consolidated Statements of Operations Data:							
Net revenues	3,641,774	100.0	3,392,705	100.0	3,401,037	494,660	100.0
Hosting and related services	2,668,655	73.3	2,975,178	87.7	3,401,037	494,660	100.0
Managed network services	973,119	26.7	417,527	12.3			
Cost of revenues	(2,929,638)	(80.4)	(2,634,295)	(77.6)	(2,456,166)	(357,235)	(72.2)
Hosting and related services	(1,936,658)	(53.2)	(2,130,279)	(62.7)	(2,456,166)	(357,235)	(72.2)
Managed network services	(992,980)	(27.3)	(504,016)	(14.9)			
Gross profit	712,136	19.6	758,410	22.4	944,871	137,425	27.8
Operating (expenses) income:							
Sales and marketing expenses	(352,926)	(9.7)	(256,682)	(7.6)	(172,176)	(25,042)	(5.1)
Research and development expenses	(149,337)	(4.1)	(149,143)	(4.4)	(92,109)	(13,397)	(2.7)
General and administrative expenses	(639,648)	(17.6)	(519,950)	(15.3)	(462,637)	(67,288)	(13.5)
(Allowance)/reversal for doubtful debt	(117,564)	(3.2)	(37,427)	(1.1)	598	87	0.0
Changes in the fair value of contingent purchase consideration payables	93,307	2.6	(937)	(0)	13,905	2,022	0.4
Impairment of long-lived assets	(392,947)	(10.8)	(401,808)	(11.8)			
Impairment of goodwill			(766,440)	(22.6)			
Operating income	6,783	0.2	5,439	0.2	5,027	731	0.1
Total operating expenses	(1,552,332)	(42.6)	(2,126,948)	(62.6)	(707,392)	(102,887)	(20.8)
Operating (loss) profit	(840,196)	(23.1)	(1,368,538)	(40.2)	237,479	34,538	7.0
Interest income	21,078	0.6	32,925	1.0	45,186	6,572	1.3
Interest expense	(198,589)	(5.5)	(185,313)	(5.5)	(236,066)	(34,334)	(6.9)
Impairment of long-term investment			(20,258)	(0.6)			
Gain on disposal of subsidiaries			497,036	14.7	4,843	704	0.1

Loss on debt extinguishment	(29,841)	(0.8)					
Other income	28,922	0.8	16,764	0.5	58,033	8,441	1.7
Other expenses	(16,449)	(0.5)	(17,060)	(0.5)	(4,103)	(597)	(0.1)
Foreign exchange gain (loss)	56,341	1.5	(17,153)	(0.5)	(81,055)	(11,789)	(2.4)
(Loss) income before income taxes and gain (loss) from equity method investments	(978,734)	(26.9)	(1,061,597)	(31.1)	24,317	3,535	0.7
Income tax benefits (expense)	11,160	0.3	90,170	2.7	(24,411)	(3,550)	(0.7)
Gain (loss) from equity method investments	35,652	1.0	53,783	1.6	(186,642)	(27,146)	(5.5)
Consolidated net loss	(931,922)	(25.6)	(917,644)	(26.8)	(186,736)	(27,161)	(5.5)
Net loss (income) attributable to non-controlling interest	298,324	8.2	144,914	4.3	(18,329)	(2,666)	(0.5)
Net loss attributable to the Company s ordinary shareholders	(633,598)	(17.4)	(772,730)	(22.5)	(205,065)	(29,827)	(6.0)

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 (US$494.7 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 (US$494.7 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.

Cost of Revenues

Our cost of revenues decreased by 6.8% from RMB2,634.3 million in 2017 to RMB2,456.2 million (US$357.2 million) in 2018. Our telecommunication costs decreased by 13.1% from RMB1,533.6 million in 2017 to RMB1,332.3 million (US$193.8 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 (US$137.4 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 (US$102.9 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 (US$25.0 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 (US$13.4 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 (US$67.3 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 (US$2.0 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.

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Interest Income

Our interest income increased from RMB32.9 million in 2017 to RMB45.2 million (US$6.6 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 (US$34.3 million) in 2018, primarily due to interest expense recognized for the 2020 Notes.

Other Income

Our other income increased from RMB16.8 million in 2017 to RMB58.0 million (US$8.4 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 (US$0.6 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 (Loss) Gain

We had a foreign exchange loss of RMB81.1 million (US$11.8 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 (US$3.6 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 (US$11.6 million) in 2018;

- Loss incurred outside China reduces the income tax benefit by RMB63.5 million (US$9.2 million) in 2018; and

- Current and deferred tax rate differences leads to an income tax benefit in the amount of RMB37.9 million (US$5.5 million) in 2018.

Consolidated Net Loss

As a result of the above, we recorded a net loss of RMB186.7 million (US$27.2 million) in 2018, as compared to a net loss of RMB917.6 million in 2017.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

Net Revenues

Our net revenues in 2017 decreased by 6.8% from RMB3,641.8 million in 2016 to RMB3,392.7 million in 2017. The decrease was primarily caused by the decline in net revenues generated from managed network services, which were deconsolidated from the fourth quarter of 2017 and partially offset by the growth of our hosting and related services.

Revenues from our hosting and related services amounted to RMB2,975.2 million in 2017, increasing by 11.5% from RMB2,668.7 million in 2016. The increase in revenues from our hosting and related services was primarily due to (i) the increase in the total number of billable cabinets 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 26,380 as of December 31, 2016 to 29,080 as of December 31, 2017.

Cost of Revenues

Our cost of revenues decreased by 10.1% from RMB2,929.6 million in 2016 to RMB2,634.3 million in 2017. Our telecommunication costs decreased by 15.3% from RMB1,811.6 million in 2016 to RMB1,533.6 million in 2017. The decrease in our cost of revenues was primarily due to our improved cost efficiency and disposal of WiFire Entities and Aipu Group.

We expect that our cost of revenues will increase as our business expands. Additionally, we anticipate recording significant expenses related to the amortization of the intangible assets related to the acquisition of the intangible assets of our subsidiaries as these intangible assets are amortized over their remaining useful lives.

Gross Profit

Our gross profit increased by 6.5% from RMB712.1 million in 2016 to RMB758.4 million in 2017. As a percentage of net revenues, our gross profit increased from 19.6% in 2016 to 22.4% in 2017. The increase of gross profit and gross margin was primarily due to our improved cost efficiency of hosting and related service.

Operating Expenses

Our operating expenses increased by 37.0% from RMB1,552.3 million in 2016 to RMB2,126.9 million in 2017. Our operating expenses as a percentage of net revenues increased from 42.6% in 2016 to 62.7% in 2017. The increase of our operating expenses was primarily due to our recognition of impairment of long-lived assets and goodwill as a result of the disposal of WiFire Entities and Aipu Group.

Sales and Marketing Expenses. Our sales and marketing expenses decreased by 27.3% from RMB352.9 million in 2016 to RMB256.7 million in 2017, primarily due to reduced agency costs and advertising expenses and 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 9.7% and 7.6% in 2016 and 2017, respectively.

Research and Development Expenses. Our research and development expenses decreased from RMB149.3 million in 2016 to RMB149.1 million in 2017. As a percentage of net revenues, our research and development expenses increased from 4.1% in 2016 to 4.4% in 2017.

General and Administrative Expenses. Our general and administrative expenses decreased by 18.7% from RMB639.6 million in 2016 to RMB520.0 million in 2017, 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 17.6% in 2016 to 15.3% in 2017.

Changes in the Fair Value of Contingent Purchase Consideration Payable. We recorded a decrease in the fair value of contingent purchase consideration payable in the amount of RMB0.9 million in 2017 in connection with our acquisition, which was primarily due to a decrease in the fair value of estimated contingent share considerations during this period.

Impairment of long-lived assets. We recorded impairment of long-lived assets in the amount of RMB401.8 million in connection with disposal of WiFire Entities and Aipu Group.

Impairment of goodwill. We recorded an impairment of goodwill in the amount of RMB766.4 million during this period, primarily related to the disposal of WiFire Entities and Aipu Group in the third quarter in 2017.

Interest Income

Our interest income increased from RMB21.1 million in 2016 to RMB32.9 million in 2017, primarily due to an increase in interest income generated from short-term investments.

Interest Expense

Our interest expense decreased from RMB198.6 million in 2016 to RMB185.3 million in 2017, primarily due to the repayment of the 2017 Bonds. In June 2017, we fully repaid the 2017 Bonds.

Other Income

Our other income decreased from RMB28.9 million in 2016 to RMB16.8 million in 2017. Other income in 2017 was primarily attributable to disposal gain on long-lived assets and government grant received.

Other Expenses

Our other expenses increased from RMB16.4 million in 2016 to RMB17.1 million in 2017. Other expenses in both periods were primarily due to the loss attributable to the disposal of certain of our equipment, such as servers and entry securities systems.

Loss on Debt Extinguishment

We incurred nil in loss on debt extinguishment in 2017. We incurred loss on debt extinguishment in the amount of RMB29.8 million in 2016 due to repurchase of 78.97% of the outstanding principal amount of the 2017 Bonds with the total consideration of RMB1,613.9 million including payment of accrued interests of RMB18.7 million.

Foreign Exchange (Loss) Gain

We had a foreign exchange loss of RMB17.2 million in 2017, compared to a foreign exchange gain of RMB56.3 million in 2016, primarily due to the depreciation of U.S. dollar relative to Renminbi in 2017 for the U.S. dollar denominated bonds.

Income Tax (Expense) Benefits

We recorded income tax benefits in the amount of RMB90.2 million in 2017, compared with income tax benefits of RMB11.2 million in 2016, with the effective tax rates 8.9%. This is primarily due to:

- The decrease of taxable income tax for our PRC subsidiaries and consolidated affiliated entities due to operating performance;

- increase in change in valuation allowance from RMB158.7 million in 2016 to RMB174.4 million in 2017.

the effect of preferential tax rates of negative RMB90.1 million enjoyed by certain of our PRC subsidiaries and consolidated affiliated entities. 21Vianet Beijing, SH Blue Cloud and SZ DYX are qualified as HNTEs and enjoy a preferential income tax rate of 15%.

Consolidated Net Loss

As a result of the above, we recorded a net loss of RMB917.6 million in 2017, as compared to a net loss of RMB931.9 million in 2016.

B. Liquidity and Capital Resources

As of December 31, 2018, we had RMB2,358.6 million (US$343.0 million) in cash and cash equivalents, RMB302.5 million (US$44.0 million) in restricted cash (current and non-current portion) and RMB245.0 million (US$35.6 million) in short-term investments.

As of December 31, 2018, we had short-term bank borrowings and long-term bank borrowings (current portions) from various commercial banks with an aggregate outstanding balance of RMB125.3 million (US$18.2 million), and long-term bank borrowings (excluding current portions) from various commercial banks with an aggregate outstanding balance of RMB112.0 million (US$16.3 million). The short-term bank borrowings bore weighted average interest rates of 4.22%, 4.04% and 4.05% per annum, respectively, in 2016, 2017 and 2018. 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, 2016, 2017 and 2018 bore weighted-average interest rates of 5.85%, 5.50% and 5.31% per annum, respectively, in 2016, 2017 and 2018 and have certain financial covenants.

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.

The 2020 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 RMB21.4 million (US$3.1 million) as of December 31, 2018, pursuant to credit agreements entered into with five banks. A total of RMB462.9 million (US$67.3 million) credit line was granted to us under five credit agreements, of which we have used RMB441.5 million (US$64.2 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, 2018 is sufficient for our present requirements.

As of December 31, 2018, we had total outstanding debts of RMB2,275.1 million (US$330.9 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, 2018, we have purchase commitments (commitments related to acquisition of machinery, equipment, construction in progress, bandwidth and cabinet capacity) of RMB1,629.1 million (US$236.9 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, 2018, the amount of outstanding debt inside and outside of the PRC was RMB237.3 million (US$34.5 million) and RMB2,037.8 million (US$296.4 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, 2018, the total amount of cash and cash equivalents, restricted cash and short-term investments was RMB2,906.0 million (US$422.7 million), of which RMB879.8 million (US$128.0 million), RMB251.8 million (US$36.6 million) and RMB1,774.4 million (US$258.1 million) was held by our consolidated affiliated entities, PRC subsidiaries and offshore subsidiaries, respectively. Cash transfers from our PRC subsidiaries to our subsidiaries outside of China are subject to PRC government control of currency conversion. Restrictions on the availability of foreign currency may affect the ability of our PRC subsidiaries and consolidated affiliated entities to remit sufficient foreign currency to pay dividends or other payments to us, or otherwise satisfy their foreign currency denominated obligations. 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.

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

	For the Year Ended December 31,			
	2016[(1)]	**2017[(1)]**	**2018**	
	RMB	**RMB**	**RMB**	**US$**
		(in thousands)		
Net cash generated from operating activities	57,569	487,202	704,966	102,534
Net cash used in investing activities	(841,017)	(833,307)	(304,846)	(44,337)
Net cash generated from (used in) financing activities	1,908,883	(612,651)	(19,901)	(2,896)
Effect on foreign exchange rate changes on cash and cash equivalents and restricted cash	160,289	(140,298)	85,333	12,411
Net increase (decrease) in cash and cash equivalents and restricted cash	1,285,724	(1,099,054)	465,552	67,712
Cash and cash equivalents and restricted cash at beginning of the year	2,008,799	3,294,523	2,195,469	319,318
Cash and cash equivalents and restricted cash at end of the year	3,294,523	2,195,469	2,661,021	387,030
Cash and cash equivalents, restricted cash and short-term investments at end of the year	3,572,469	2,744,359	2,906,035	422,666

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 2016 and 2017 presented herein.

Operating Activities

Net cash generated from operating activities was RMB705.0 million (US$102.5 million) in 2018, compared to net cash generated from operating activities of RMB487.2 million in 2017.

Net cash generated from operating activities in 2018 primarily resulted from a net loss of RMB186.7 million (US$27.2 million), positively adjusted for certain items such as (i) depreciation of property and equipment of RMB566.5 million (US$82.4 million), (ii) the increase in advances from customers of RMB266.8 million (US$38.8 million), and (iii) loss from equity method investments of RMB186.6 million (US$27.1 million) , partially offset by certain item such as the increase in prepaid expenses and other current assets of RMB261.3 million (US$38.0 million).

Net cash generated from operating activities in 2018 primarily reflected payments of RMB3,611.8 million (US$525.3 million) received from our customers, partially offset by our payments for telecommunication costs of RMB852.0 million (US$123.9 million) in 2018, payment for taxes of RMB86.3 million (US$12.6 million) and payment to employees of RMB670.1 million (US$97.5 million).

Net cash generated from operating activities was RMB487.2 million in 2017, compared to net cash generated from operating activities of RMB57.6 million in 2016.

Net cash generated from operating activities in 2017 primarily resulted from a net loss of RMB917.6 million, positively adjusted for certain items such as (i) impairment of goodwill of RMB766.4 million, (ii) depreciation of property and equipment of RMB523.5 million, (iii) impairment of long-lived assets of RMB401.8 million, (iv) the increase in accrued expenses and other payables of RMB270.1 million, (v) the increase in advances from customers of RMB201.8 million, and (vi) amortization of intangible assets of RMB143.6 million, partially offset by certain items such as (i) the increase in gain from disposal of subsidiaries of RMB497.0 million, (ii) the increase in prepaid expenses and other current assets of RMB310.2 million, and (iii) the increase in deferred tax benefits of RMB128.0 million.

Net cash generated from operating activities in 2017 primarily reflected payments of RMB3,560.9 million received from our customers, partially offset by our payments for telecommunication costs of RMB1,099.7 million in 2017, payment for taxes of RMB81.6 million and payment to employees of RMB725.8 million.

Investing Activities

Net cash used in investing activities was RMB304.8 million (US$44.3 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 (US$63.3 million), our payments for long-term investments in the amount of RMB252.8 million (US$36.8 million), our payment for short-term investments in the amount of RMB98.9 million(US$14.4 million), offset by proceeds received from maturity for short-term investments in the amount of RMB417.6 million (US$60.7 million), proceeds from disposal of long-term investments in the amount of RMB75.7 million (US$11.0 million).

Net cash used in investing activities was RMB833.3 million in 2017, as compared to net cash used in investing activities of RMB841.0 million in 2016. Net cash used in investing activities in 2017 is primarily related to our payment for short-term investments in the amount of RMB755.9 million, our purchase of property and equipment in the amounts of RMB396.0 million, our payment for long-term investments in the amount of RMB162.2 million, offset by proceeds received from maturity for short-term investments in the amount of RMB484.9 million, and receipt of loan in the amount of RMB100.0 million from a third party.

Financing Activities

Net cash used in financing activities was RMB19.9 million (US$2.9 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 capital leases of RMB279.9 million (US$40.7 million) and the repayment of long-term bank borrowings of RMB70.6 million

(US$10.3 million), partially offset by the contribution from noncontrolling interest in a subsidiary of RMB196.3 million (US$28.5 million) and proceeds from the issuance of notes of RMB95.6 million (US$13.9 million).

Net cash used in financing activities was RMB612.7 million in 2017, as compared to net cash generated from financing activities amounting to RMB1.9 billion in 2016. Net cash used in financing activities in 2017 is primarily related to repayment of short-term bank borrowings in the amount of RMB1,673.7 million, repayment of 2017 Bonds in the amount of RMB420.6 million, payment for purchase of property and equipment through capital leases in the amount of RMB199.1 million, rental prepayment and deposits for sales and leaseback transactions in the amount of RMB164.7 million, payment for share repurchase plan in the amount of RMB133.1 million and repayment of loan from a third party in the amount of RMB100.0 million, and offset by proceeds from issuance of 2020 Notes in the amount of RMB1,936.2 million and contribution from noncontrolling interest in a subsidiary of RMB134.6 million.

Capital Expenditures

We had capital expenditures relating to the addition of property and equipment of RMB574.5 million, RMB396.0 million and RMB435.2 million (US$63.3 million) in 2016, 2017 and 2018, respectively, representing 15.8%, 11.8% and 12.8%, 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 2019 will be within the range of RMB700 million to RMB900 million, 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 2019 with cash from the proceeds from our operations, overseas offerings, operations and additional bank borrowings, if available.

Holding Company Structure

21Vianet Group, Inc. is a holding company with no material operations of its own. We conduct our operations primarily through our PRC subsidiaries and consolidated affiliated entities in China. As a result, although other means are available for us to obtain financing at the holding company level, 21Vianet Group, Inc. s ability to pay dividends and to finance any debt it may incur depends upon dividends paid by our subsidiaries. If our subsidiaries or any newly formed subsidiaries incur debt on its own behalf in the future, the instruments governing their debt may restrict its ability to pay dividends to 21Vianet Group, Inc. In addition, our PRC subsidiaries and consolidated affiliated entities are permitted to pay dividends to us only out of their retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. Under PRC law, our PRC subsidiaries and consolidated affiliated entities are required to set aside a portion of their after-tax profits each year to fund a statutory reserve and to further set aside a portion of its after-tax profits to fund the employee welfare fund at the discretion of the board or the enterprise itself. Although the statutory reserves can be used, among other ways, to increase the registered capital and eliminate future losses in excess of retained earnings of the respective companies, the reserve funds are not distributable as cash dividends except in the event of liquidation of these subsidiaries and consolidated affiliated entities.

C. Research and Development, Patents and Licenses, etc.

Research and Development

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 60% 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 2016, 2017 and 2018, our research and development expenses were RMB149.3 million, RMB149.1 million and RMB92.1 million (US$13.4 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 62 patents, 42 patent applications and 70 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 pocket 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, 2018 that are reasonably likely to have a material adverse effect on our net revenues, income, profitability, liquidity or capital resources, or that caused the disclosed financial information to be not necessarily indicative of future results of operations or financial conditions.

E. Off-Balance Sheet Arrangements

We have not entered into any financial guarantees or other commitments to guarantee the payment obligations of any third parties. We have not entered into any derivative contracts that are indexed to our shares and classified as shareholder s equity, or that are not reflected in our consolidated financial statements. Furthermore, we do not have any retained or contingent interest in assets transferred to an unconsolidated entity that serves as credit, liquidity or market risk support to such entity. Moreover, we do not have any variable interest in any unconsolidated entity that provides financing, liquidity, market risk or credit support to us or engages in leasing, hedging or research and development services with us.

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F. Tabular Disclosure of Contractual Obligations

The following table sets forth our contractual obligations and commercial commitments as of December 31, 2018:

	Payment Due by Period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	(in thousands of RMB)				
Short-term borrowings(1)	50,000	50,000			
Long-term borrowings(1)(2)	187,284	75,284	112,000		
Notes payable(3)	2,156,326	97,366	2,058,960		
Operating lease obligations(4)	1,363,979	171,404	282,696	170,214	739,665
Purchase commitments(5)	3,181,380	1,629,081	678,949	231,495	641,855
Capital lease minimum lease payment(6)	1,513,548	305,710	534,907	152,567	520,364
Total	8,452,517	2,328,845	3,667,512	554,276	1,901,884

Notes:

(1) As of December 31, 2018, our short-term bank borrowings bore a weighted average interest rate of 4.05% and have original maturity terms of one year. Our unused short-term and long-term bank borrowing facilities amounted to RMB21.4 million (US$3.1 million). We have pledged land use rights with the net book value of RMB16.4 million (US$2.4 million) for our bank borrowings. We have pledged property with the net book value of RMB140.4 million (US$20.4 million) for our bank borrowings. We have pledged computer and network equipment and office equipment with the net book value of RMB146.2 million (US$21.3 million) for our bank borrowings. We have also pledged office equipment with the net book value of RMB0.04 million (US$0.01 million) for our bank borrowings.

(2) Long-term bank borrowings (including the current portions) outstanding as of December 31, 2018 bear a weighted-average interest rate of 5.31% per annum, and are denominated in Renminbi. These loans were obtained from financial institutions located in the PRC.

(3) The 2020 Notes with US$300 million of the principal amount outstanding due 2020 at an interest rate of 7.000% per annum and notes payable related to daily operation.

(4) Operating lease obligations are primarily related to the lease of office and data center space.

(5) As of December 31, 2018, we had commitments of approximately RMB2,391.3 million (US$347.8 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 RMB790.1 million (US$114.9 million).

(6) Related to capital leases for electronic equipment, optic fibers and property.

G. Safe Harbor

This annual report on Form 20-F contains forward-looking statements. These statements are made under the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements can be identified by terminology such as will, expects, anticipates, future, intends, plans, believe estimates, may, intend, is currently reviewing, it is possible, subject to and similar statements. Among other t 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 EMPLOYEES

A. 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	50	Executive Chairman of the Board of Directors
Shiqi Wang	43	Chief Executive Officer and President
Sharon Xiao Liu	38	Chief Financial Officer
Yoshihisa Ueno	56	Director
Kenneth Chung-Hou Tai	68	Director
Sean Shao	62	Director
Erhfei Liu	61	Director
Wenbin Chen	48	Director
Tao Zou	43	Director
Yao Li	55	Director
Wing-Dar Ker	58	President of Microsoft Cloud Business Unit
Feng Liu	47	Vice President and General Manager of Marketing, and Infrastructure Operation
Chunfeng Cai	36	Vice President and National General Sales Manager

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.

Mr. Shiqi Wang has serviced 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. Yoshihisa Ueno has served as our director since October 2010. Our board of directors has determined that Mr. Ueno satisfies the independence standards under Rule 5605 of Nasdaq Stock Market Rules. Mr. Ueno is a serial entrepreneur & venture capitalist with operation & industrial expertise in the US, Europe, Japan and China and over 34 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, and 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 Fullerton Technology (TPE: 6136), National Aerospace Fasteners Corporation (TPE: 3004), 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, Jasper Display Corporation, Lumens Digital Optics Inc., and Evest 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 currently also serves as independent director of: Jumei International Holding Ltd., an e-commerce company listed on NYSE since May 2014; LightInTheBox Holdings Co., Ltd., an e-commerce company listed on NYSE since June 2013 and UTStarcom Holdings Corp., a provider of broadband equipment and solutions listed on Nasdaq since October 2012. Mr. Shao also serves as an independent director of China Biologic Products, Inc., a biopharmaceutical company listed on Nasdaq since July 2008. He served as the chief financial officer and a director of Trina Solar Limited from 2006 to 2008 and from 2015 to 2017, respectively. In addition, Mr. Shao served from 2004 to 2006 as the chief financial officer of ChinaEdu Corporation, an educational service provider, and of Watchdata Technologies Ltd., a Chinese security software company. Prior to that, Mr. Shao worked at Deloitte Touche Tohmatsu CPA Ltd. for approximately a decade. Mr. Shao received his master s degree in health care administration from the University of California at Los Angeles in 1988 and his bachelor s degree in art from

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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. From 1999 to 2012, Mr. Liu was Chairman of Merrill Lynch China initially and Country Executive of Bank of America Merrill Lynch after 2009. In addition to his various investment banking responsibilities, he was also in charge of the firm s private equity business in Greater China from 2006 to 2010. Prior to joining Merrill Lynch, Mr. Liu worked as head of Asia or China for Goldman Sachs, Morgan Stanley, Smith Barney and Indosuez. Mr. Liu received an MBA from Harvard Business School and Bachelor s degrees from Brandeis University and from Beijing Foreign Languages University.

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: CMCM) 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. 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. Wing-Dar Ker has served as our president of Microsoft cloud business unit since October 2013. 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. Feng Liu started to serve as our general manager of marketing, and infrastructure operation since January 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 oversea 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.

Mr. Chunfeng Cai has served as our vice president since January 2016. Mr. Cai started to serve 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.

Employment Agreements

We have entered into employment agreements with each of our executive officers. Under these agreements, each of our senior executive officers is employed for a specified time period. We may terminate employment for cause, at any time, without advance notice or remuneration, for certain acts of the executive officer, such as conviction or plea of guilty to a felony or any crime involving moral turpitude, negligent or dishonest acts to our detriment, or misconduct or a failure to perform agreed duties. In such case, the executive officer will not be entitled to receive payment of any severance benefits or other amounts by reason of the termination, and the executive officer s right to all other benefits will terminate, except as required by any applicable law. We may also terminate an executive officer s employment without cause upon one-month advance written notice. In such case of termination by us, we are required to provide compensation to the executive officer, including severance pay, as expressly required by the applicable law of the jurisdiction where the executive officer is based. The executive officer may terminate the employment at any time with a one-month advance written notice, if there is any significant change in the executive officer s duties and responsibilities inconsistent in any material and adverse respect with his or her title and position or a material reduction in the executive officer s annual salary before the next annual salary review, or if otherwise approved by the board of directors.

Each executive officer has agreed to hold, both during and after the termination or expiry of his or her employment agreement, in strict confidence, and not to use, except as required in the performance of his or her duties in connection with the employment, any of our confidential information or trade secrets, any confidential information or trade secrets of our clients or prospective clients, or the confidential or proprietary information of any third party received by us and for which we have confidential obligations. The executive officers have also agreed to disclose in confidence to us all inventions, designs and trade secrets which they conceive, develop or reduce to practice and to assign all right, title and interest in them to us, and assist us in obtaining patents, copyrights and other legal rights for these inventions, designs and trade secrets.

In addition, each executive officer has agreed to be bound by non-competition and non-solicitation restrictions during the term of his or her employment and for one year following the last date of employment. Specifically, each executive officer has agreed not to (i) approach our clients, customers or contacts or other persons or entities introduced to the executive officer for the purpose of doing business with such persons or entities that will harm our business relationships with these persons or entities; (ii) assume employment with or provide services to any of our competitors, or engage, whether as principal, partner, licensor or otherwise, any of our competitors; or (iii) seek directly or indirectly, to solicit the services of any of our employees who is employed by us on or after the date of the executive officer s termination, or in the year preceding such termination.

B. Compensation

In 2018, the aggregate cash compensation we paid to our executive officers was approximately RMB13.3 million (US$1.9 million), which total amount included RMB0.6 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 2018. Other than the amounts stated above, no pension,

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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 RMB36.5 million (US$5.3 million) in 2018. 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 28, 2019, options to purchase 1,226,568 ordinary shares and 3,260,324 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 e