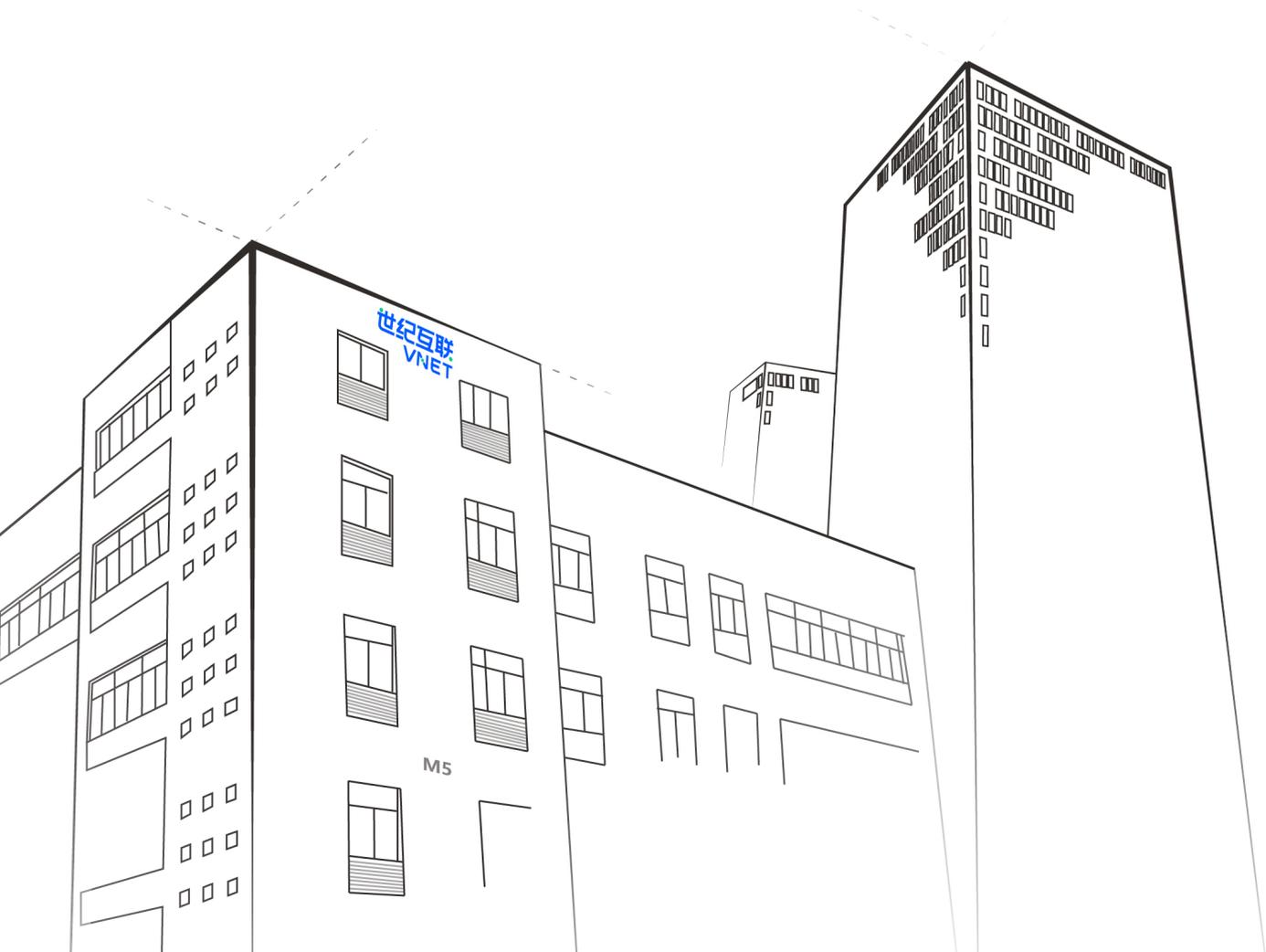


21 Vianet Group, Inc.



21VIANET

Environmental, Social and Governance Report



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About this Report

Overview

This Report offers full visibility into the environmental, social and governance (hereinafter referred to as “ESG”) performance and management measures of 21Vianet Group, Inc (hereinafter referred to as “21Vianet”, the “Company”, or “we”) and its affiliates in 2020, with a special focus on the concerns of key stakeholders.

Reporting Period

This Report covers information and data of the company from January 1, 2020 to December 31, 2020 (hereinafter referred to as the “reporting period”), some of the information dates back to 2019 or before, or extends to 2021.

Compilation Basis

This Report was prepared in accordance with the core option of the GRI Standards issued by the Global Reporting Initiative Standards (hereinafter referred to as the “GRI”) as well as the *Environmental, Social and Governance Reporting Guide* issued by the Stock Exchange of Hong Kong.

Data Source and Reliability Assurance

The data and cases included in this Report are mainly from the statistical reports and relevant documents of the company. Any monetary amount mentioned in this Report is in RMB (Renminbi). The Company undertakes that this Report does not contain any false or misleading statement and is responsible for the authenticity, accuracy, and completeness of the content herein.

Access and Response to this Report

We place great importance on the opinions of our stakeholders. We would appreciate your suggestions by contacting us through the following means. Your suggestions will help us further improve this Report and our ESG performance.

Email: IR@21Vianet.com

Message from CEO

In the extraordinary year of 2020, we experienced unprecedented challenges and opportunities. On the one hand, digital advancements gave strong impetus for the development of new infrastructure. Technologies such as cloud services, 5G, and artificial intelligence promoted the support services. Digital transformation of industries resulted in tremendous needs for data storage and computing capabilities. Founded over two decades ago, 21Vianet is entering a new and exciting era.

On the other hand, the COVID-19 outbreak, intensified climate change, and slow economic recovery have put mankind in an increasingly difficult situation in recent years. Facing these opportunities and challenges, we can see the possibilities of building a better society. Among them, sustainable development has become the common value, and ESG practices and investment are getting more and more attention.



申元庆

Mr. Samuel Yuan-Ching Shen

21Vianet has been dedicated to sustainable development since our inception. As a responsible corporate citizen, we believe in long-term commitments and responsibilities to our customers, employees, and society, as they are the foundation of our ongoing success in a highly competitive, ever-changing market. We have continued to explore opportunities in corporate governance, talent development, low-carbon operation, product service, social care, and other areas to align ourselves with the national policies and the United Nations Sustainable Development Goals (SDGs).

We continuously improve our corporate governance structure and risk management systems to form effective risk prevention and control mechanisms for sustainable operation. Integrity is at the core of our operation, and we have developed a series of anti-corruption systems and management measures to maintain high ethical standards.

Employee development is our top priority. As we improve our training system to support diversified employee development, we focus on the physical and mental well-being of our employees by providing a variety of benefits, such as enriching activities and events. During the COVID-19 outbreak in particular, we overcame challenges and promptly provided employees with infection prevention and control supplies to protect their health.

We are committed to building green data centers and progressing towards our low-carbon goals. In 2020, we adopted a system of energy-saving and consumption-reducing measures and optimized our energy consumption structure, taking another step towards reducing emissions from data centers.

We always follow the needs of our customers and aim to deliver top-quality services. In 2020, in an effort to improve existing products and services and considering our customers' performance requirements, we launched the hybrid cloud platform. We used technology to increase operational and maintenance efficiency. In addition, we set up our cybersecurity emergency response center and comprehensively optimized the Blue Cloud operation services in terms of user privacy protection to deliver worry-free services.

We actively respond to social issues, provide volunteer services, care for disadvantaged groups, and provide economic assistance to support the development of our communities. During the COVID-19 outbreak, we organized our employees to support local disease prevention and control measures, making contributions to China's prevention and control efforts.

Today, we are releasing our first ESG report to show the importance we consistently place on ESG in our company. I encourage you to take a closer look at our values and how we strive to pursue such values. Looking into the future, in line with the mission of "Green Computing for A Better Digital Life", we will continue to enhance our ESG practices and improve corporate governance and business ethics. We will build up capabilities to protect, connect, and empower the digital economy, and support employee development. We will join hands with customers and partners to promote the healthy development of the data center sector, be responsible to all stakeholders, and contribute to the development of society.



21Vianet operated more than 50 data centers in over 20 cities across China

50+ data centers

More than

53,553 cabinets

Port capacity

2,000G+

More than 1,000G of high-speed cloud dedicated access

1,000G

Corporate Overview

Founded in 1996, 21Vianet (Nasdaq: VNET) is one of the most influential cyberinfrastructure service providers in the world, one of China's leading carrier-neutral data center services providers, and the only leading IDC Internet Data Center enterprise in China providing "Wholesale plus Retail IDC". 21Vianet is committed to providing industry-leading customized one-stop data center solutions for ultra-large customers and providing data center-based comprehensive cloud computing services and solutions, including cloud computing exchange and connection and hybrid delivery for core customers. 21Vianet creates cyberinfrastructure platforms with core technology, hyper-scale operation capability, and high value-added services.

As of the end of the reporting period, 21Vianet operated more than 50 data centers in over 20 cities across China, with more than 53,553 cabinets, more than 2,000G of port capacity, and more than 1,000G of high-speed cloud dedicated access, standing out as a new digital transformation engine for customers. Additionally, 21Vianet is preparing a new collection of scaled-up, standardized, eco-friendly, high-capacity data centers to cater to the rapid expansion of Chinese and foreign enterprise customers.

21Vianet combines our core strength in data centers and advantages in data center construction and operation, multi-cloud services, and one-stop industry solutions to provide Internet infrastructure services for enterprises of different sizes and in different development stages that benefit their long-term development. So far, 21Vianet has formed large data center clusters in Beijing-Tianjin-Hebei, Yangtze River Delta, and Guangdong-Hong Kong-Macao regions – a stable, sizeable, and fully connected core basis for digital transformation. These facilities not only serve operations in tier-one cities, but also allow for smooth data transfer from tier-one cities to their neighboring cities.

21Vianet has not only realized interconnection among our own data centers, but also established high-speed network connections with telecom operators, Internet content providers, and cloud service providers. In addition, the Company cooperates with leading public cloud service providers in China to create large-capacity, high-reliability, high-scalability cloud exchange networks. 21Vianet provides autonomous, controllable, tailor-made enterprise-level hybrid IT solutions to serve customers' core business applications while providing extensibility, which helps businesses improve delivery efficiency, reduce operation and maintenance costs, and manage complex business scenarios and comprehensively supports their digital transformation.

Additionally, 21Vianet has supported the entry of large international cloud solutions into the Chinese market, such as Microsoft Azure, Office 365, Dynamics 365, and Power Platform. These platforms have been introduced to China and are now under independent operation.

21Vianet has provided solid business foundations for over 6,000 enterprises around the globe, including nearly 100 high-growth industry leaders, with our resources and capital strength, strong innovation capabilities, efficient delivery capabilities, and excellent operational capabilities. The experience and success of 21Vianet are irreplicable.

Corporate Governance

- Board and ESG Related Governance Structure
- Risk Management and Control
- Anti-Corruption

Environmental,
Social and
Governance Report



Board and ESG Related Governance Structure

In strict accordance with the *Company Law of the People's Republic of China*, *Securities Exchange Acts of the United States*, and relevant Nasdaq Listing Rules, 21Vianet continuously improves our corporate governance structure. This involves shareholders' meetings, a Board of Directors, several special committees to ensure effective supervision of senior management by the Board of Directors and to protect the rights and interests of shareholders.

The Board of Directors of 21Vianet has an Audit Committee, a Corporate Governance and Nomination Committee, and a Compensation Committee, and a Strategic Advisory Committee, responsible for overseeing respective affairs of the Company and providing consultation and suggestions on the major decisions of the Board of Directors. The scope of power of our primary Board Committees is published on the official website¹ of 21Vianet and is available to all stakeholders. In addition, we plan to establish an ESG working group in Company, reporting progress of ESG-related functions to the Strategic Advisory Committee on a regular basis and the Strategic Advisory Committee undertake the primary duty to supervise and manage the implementation of our ESG work by the ESG working group.

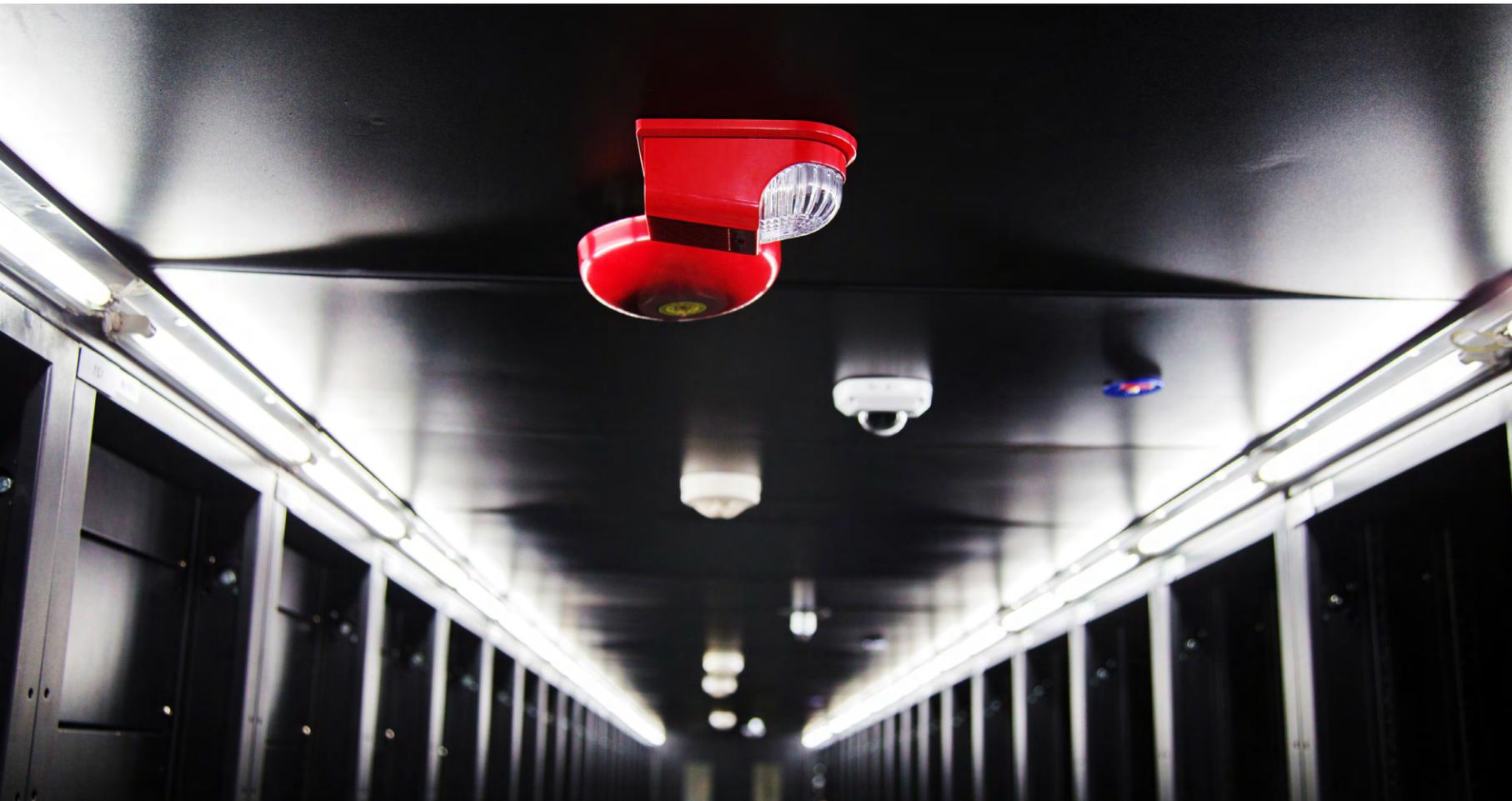
Governance Structure	Responsibility	Frequency of Reporting
 Strategic Advisory Committee	Key Responsibilities : ① Supervise the formulation of sustainability goals and strategies; ② Monitor sustainability performance; • Assess ESG related goals and review the progress of sustainability goals on a regular basis • Assess company's performance related to ESG ③ Supervise the release of ESG report.	Twice a year at the end of each half of the year
 ESG Working Group Leading department: ESG department Coordinating departments: product operation and maintenance department, human resources department, administration department, supervision department, etc.	Key Responsibilities : ① Determine the annual sustainability goals and key improvement plan based on the company's sustainability strategy; ② Communicate with stakeholders on important ESG issues and promote key projects to collect information required for ESG disclosure; ③ Produce ESG reports and submit to Strategic Advisory Committee; ④ Communicate with major rating agencies and keep up with ESG work and marketing.	Twice a year at the end of each half of the year



21Vianet's Board of Directors currently consists of 6 members, including one Executive Director, and 5 Independent Non-executive Directors. Current members of the Board of Directors have extensive experience in finance and economics, electrical engineering, government affairs, and other industries, as well as management skills and good educational backgrounds. They advise on the decision-making of the Board with global perspectives.

Board Directors of 21Vianet							
Title	Name	Length of office (year)	Gender	Educational Background	Expertise		
					Industry experience	Risk management	Financial management
Founder and Chairman	Mr. Josh Sheng Chen	25	Male	Bachelor of Electrical Engineering	√	√	√
Independent Director	Mr. Yoshihisa Ueno	11	Male	Bachelor of Business Administration	√	√	√
Independent Director	Mr. Kenneth Chung-Hou Tai	9	Male	Master of Business Administration; Bachelor of Electrical Engineering	√	√	√
Independent Director	Mr. Sean Shao	6	Male	Master of Management	√	√	√
Independent Director	Mr. Erfei Liu	6	Male	Master of Business Administration	√	√	
Independent Director	Mr. Yao Li	3	Male	PhD in Economics	√	√	

¹See the scope of power of the Board Committee of 21Vianet: <http://ir.21vianet.com/corporate-governance>

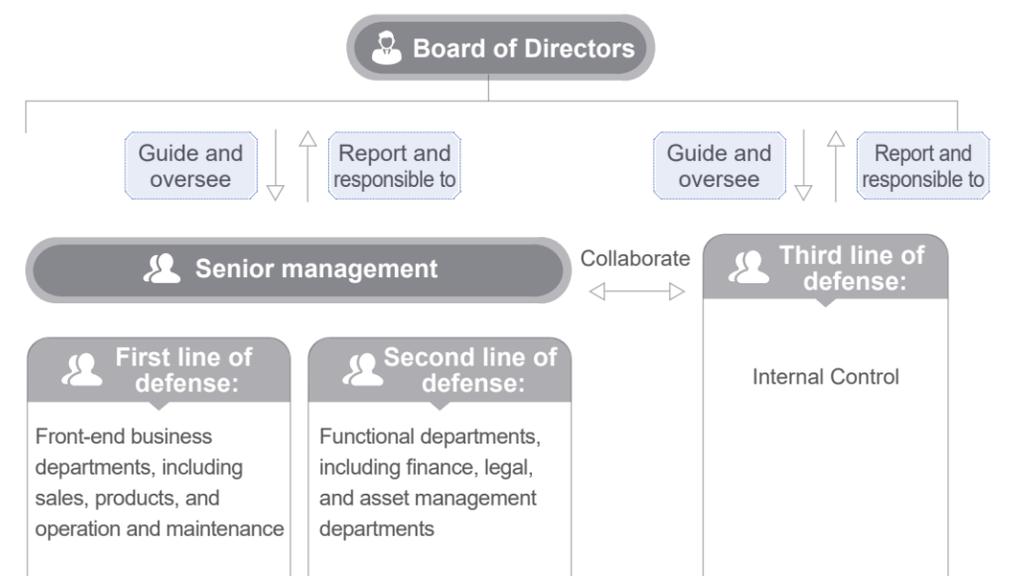


Risk Management and Control

21Vianet has developed a risk management process tailored to the characteristics of our business. The purpose of this process is to identify financial and non-financial risks in our operations as early as possible. The Company has formed effective risk prevention and control mechanism to safeguard our operations in the long run. The Board of Directors is responsible for guiding and overseeing risk identification and management, and senior management works with external auditors to ensure the soundness and effectiveness of the Company's risk management process.

Three Lines of Defense For Risk Management

Based on the COSO internal control framework² and in compliance with the Sarbanes-Oxley Act of 2002³, 21Vianet has applied the three lines of defense model for risk management. The model distinguishes different lines of defense involved in risk management and defines the control process for risks of various types. The first line of defense focuses on prevention and control of business-related risks through regular business processes. The second line of defense involves dedicated risk management professionals, who manage risk-related tasks and activities and guide and oversee the first line of defense to maximize risk reduction. The third line of defense provides examination of the operation of the first two lines of defense through an internal audit process. Using this model, we identify problems and arrange for rectification to ensure the implementation and optimization of risk management policies and responsibilities.



Forward-looking Risk Management

21Vianet pays particular attention to risks that are highly sensitive to corporate operations, such as the risk of relevant transactions. The Company is committed to implementing a comprehensive and forward-looking risk management process and controlling potential risks such as climate change and energy supply risks. 21Vianet has developed a series of emergency response guidelines, such as the *Sudden Disaster Emergency Response System*, and we received the ISCCC (China Information Security Certification Center) certification for disaster recovery information security services, which establishes processes for protecting normal business operation from potential risks.

²COSO: COSO refers to the Committee of Sponsoring Organizations of the Treadway Commission. In September 1992, COSO issued the Internal Control-Integrated Framework, the COSO Report in short.

³The Sarbanes-Oxley Act is a law established by the U.S. legislature to address corporate and securities regulatory issues in response to the financial frauds involving Enron Corporation, WorldCom, and other companies. It is called the SOX Act for short.





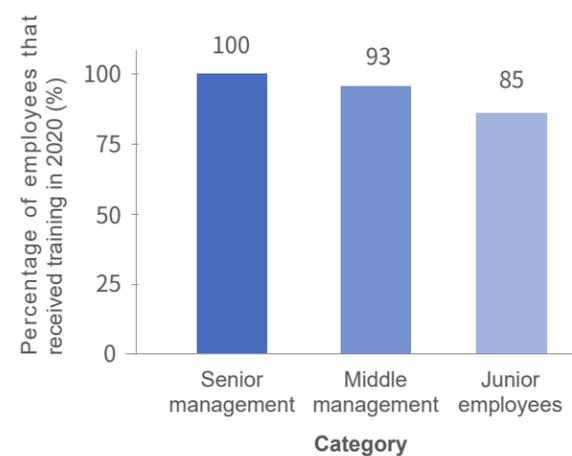
Anti-Corruption

We do business with integrity and act in strict accordance with laws, regulations and industry standards, including the *Criminal Law of the People's Republic of China*, *Company Law of the People's Republic of China*, and *Anti-Unfair Competition Law of the People's Republic of China*. We abide by the highest ethical standards and compliance requirements when interacting with our stakeholders.

Integrity Initiative

We have developed policies and systems such as the 21Vianet Group Integrity Interview System, the Anti-Corruption Inspection System, the Gift Registration System, and the Anti-Commercial Bribery Statement to ensure all employees understand and comply with 21Vianet's standards of integrity. During the reporting period, we developed an integrity education module on our office software to educate employees and spread our commitment to integrity. In addition, we joined the Anti-Fraud Alliance in 2019, and participate in online courses and offline training sessions organized by the Alliance on a regular basis to ensure the best practice of business ethics and compliance requirements are met.

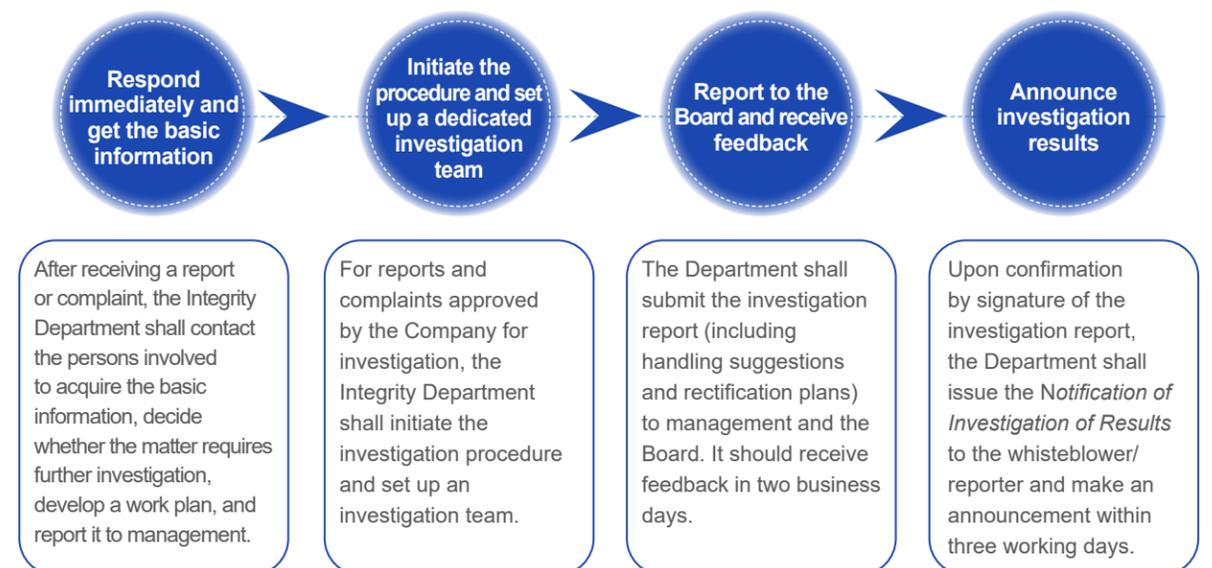
Percentage of employees who received anti-corruption training in 2020:



Anonymous Whistleblowing System

21Vianet has developed an anonymous whistleblowing and handling system led by our Integrity Department. Any employee can make a report, either using their name or anonymously, by e-mail, phone, and other means. 21Vianet resolutely fights non-compliant behaviors such as bribery, bribe solicitation, and kickbacks. We initiate investigation for reports and complaints that need to be investigated and set up investigation teams to carry out investigations. The investigation process and results are reported directly to management and the Board of Directors.

Our Anonymous Whistleblowing Process:





Employee Management

- Diversified Employment
- Employee Development
- Care for Employees

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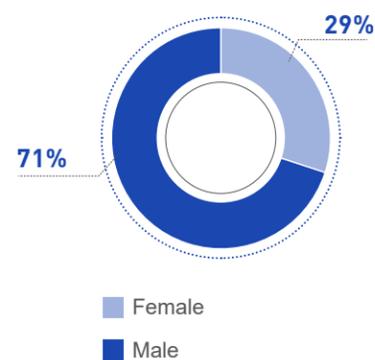
Diversified Employment

21Vianet always sees employees as the key to our success. Therefore, we resolutely protect the legitimate rights and interests of our employees. In strict accordance with laws and regulations, including the *Labor Law of the People's Republic of China* and *Labor Contract Law of the People's Republic of China*, we developed the *21Vianet Employee Handbook* that outlines our employment policies and standards. We adhere to the principle of impartiality and oppose any form of discrimination because of race, belief, gender, age, etc. We oppose child labor and forced labor. We provide employees with equal employment, promotion, and training opportunities. We are committed to creating a diversified, inclusive, and open workplace.

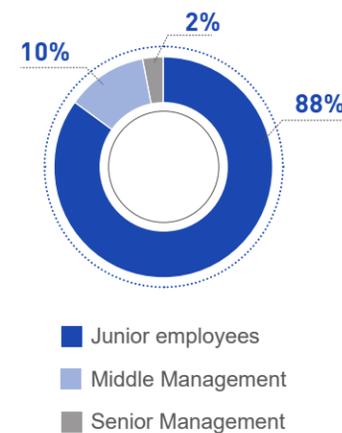
During the reporting period, 21Vianet had a total of 2,545 employees, of which ethnic minorities (14 ethnic minorities) accounted for 5%.



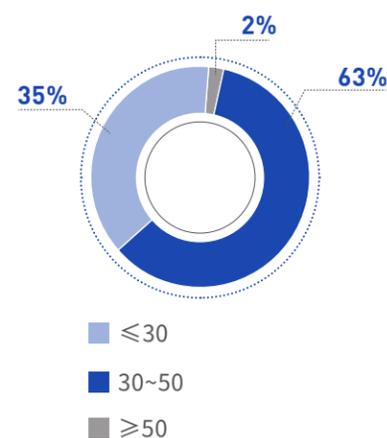
Percentage of employees by gender



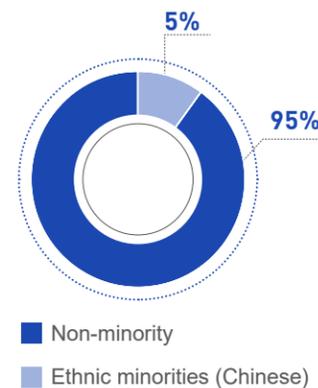
Percentage of employees by position level



Percentage of employees by age group



Percentage of employees by ethnic group



Employee Development

While we recruit high-potential talents from outside the organization, we also focus on training and development for our existing employees. We have established our lecturer system and learning platform to motivate employees and provide them with diversified development channels. Our training courses cover three themes, namely leadership, professional skills, and general skills. The training programs and courses prepared for each employee depends on their career level.



We have also created a young leaders training program for middle managers and below, which covers both professional skills and management skills. In particular, there are experience sharing sessions where senior managers from our partner firms or clients are engaged to exchange their experience with our department heads and senior managers. Additionally, in cooperation with the labor union, we organized the Operation and Maintenance Expert Program, which enriched employee learning with diverse courses and assessments.

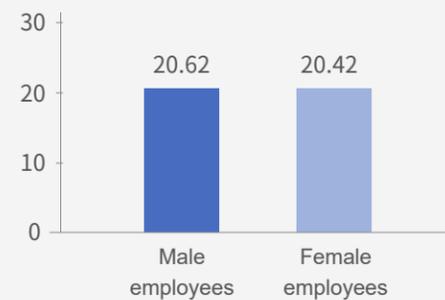
During the reporting period we implemented a greater variety of training programs, and the total hours of employee training was

49,068 hours

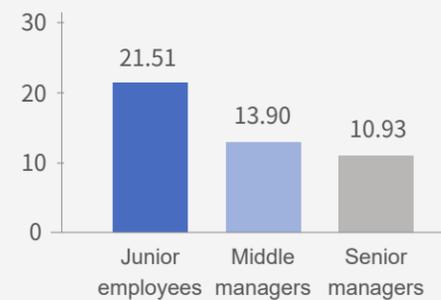
The average hours of training per employee was

19.28 hours

Hours of training per employee by gender in 2020



Hours of training per employee by position level in 2020



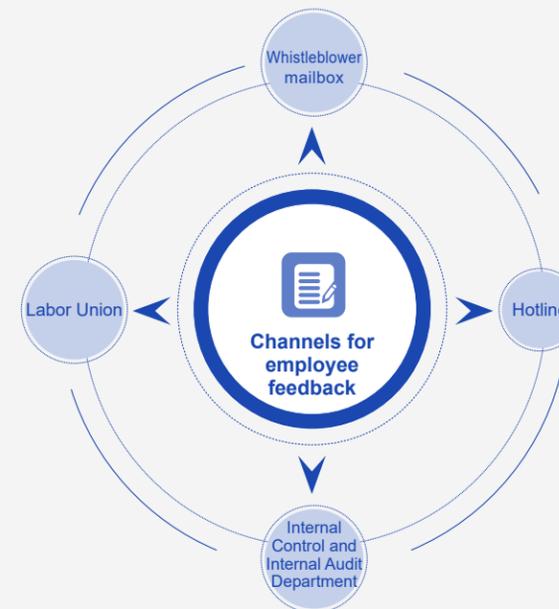
In addition to employee training, we established two promotion tracks for employees, namely the management track and the professional track. Employees are free to choose their track based on their own interests and career aspirations. For division heads and below, we perform reviews on an ongoing basis. For employees with levels higher than division heads, we review their eligibility for promotion from December to February each year to ensure equal opportunities for all.



Care for Employees

Employee Communication

21Vianet is committed to creating an equal, open, and transparent workplace. Employees can make complaints or provide suggestions through public channels such as the whistleblower mailbox or hotline, the labor union, and the Internal Control and Internal Audit Department. We will address the concerns raised by employees in a prompt and organized manner, striving to improve our systems and policies while addressing existing problems.



Employee Benefits

As a people-oriented company, we are dedicated to creating a supportive environment for employees and improving their life-work balance. We care for employees and are committed to building a stable and sustainable employee community.

With our employees always in mind, we designed an employee benefits program that includes comprehensive subsidies, medical insurance, housing provident funds, and critical illness insurance. We also purchase supplementary medical insurance for employees and their families. In addition, we organize regular extracurricular events and activities such as parent-child days and monthly jogging parties. To support new and expecting mothers, we have built nursing rooms for pregnant and breast-feeding female employees. Some of our business units also provide office massage services for employees every week, which give a boost to the sense of happiness and belonging of employees. In addition, we organize regular ball games with the labor union to diversify the enrichment opportunities.



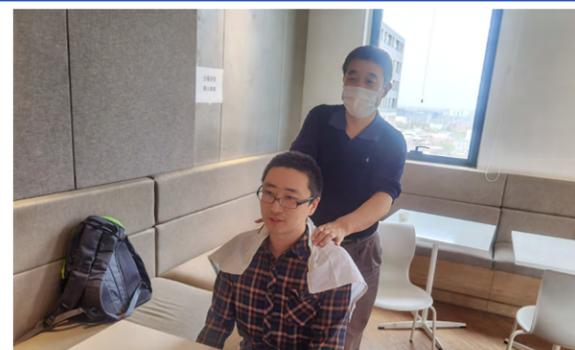
Holiday Gifts



Employee Center



Football Match



Massage Service

Health and Safety

21Vianet pays close attention to our employees' health and safety. We have received the ISO 45001 Occupational Health and Safety Management System certification and have been acting in compliance with the system in our operations.

In terms of safety, we provide protective devices for employees exposed to occupational hazards. We identify and resolve hidden dangers in a timely manner to ensure the safety of employees. We organize regular emergency drills and fire safety training to minimize the possibility of accidental injuries. During the reporting period, the Company had no major work-related injuries or fatalities.

In addition, we pay great attention to the physical and mental well-being of employees. We have set up psychological counseling rooms for employees, organized office health lectures, AED demonstrations, and health knowledge training sessions. We provide employees with regular physical examinations and take practical measures to ensure the health of employees. During the COVID-19 outbreak, we made various efforts to protect the health of employees such as disinfecting offices and distributing protective supplies.



ISO 45001 Occupational Health and Safety Management System Certification

Physical Examination

21Vianet organizes regular physical examinations and vaccinations for all employees every year. On a regular basis, we work on raising health awareness and encourage employees to receive psychological consulting services, Chinese medicine clinic for their happiness and well-being.



COVID-19 Countermeasures

During the outbreak, we eliminated all difficulties to purchase protective materials for employees and mailed them to their homes to ensure their safety. During the recurrence of the epidemic, we made work from home arrangements for pregnant and breast-feeding female employees. After operation resumed, we disinfected our offices every day, and organized employees to conduct nucleic acid testing and vaccination.





Green Development

- Green Data Centers
- Green Office

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To expedite the green construction of data centers and embrace high-efficiency, low-carbon intensive, and circular development, and in accordance with *Guiding Opinions on Strengthening the Construction of Green Data Centers of the Ministry of Industry and Information Technology of the People's Republic of China, National Government Offices Administration, and National Energy Administration and National Data Center Application Development Guidelines*, we strive to improve energy and resource efficiency throughout the lifecycle of our data centers, including design, construction, and operation and maintenance. Additionally, we identify areas with energy saving and emissions reduction potential in our offices, aligning our operations with the green development strategies of the industry and of the nation.

During the reporting period, the energy consumption, water consumption, and greenhouse gas emissions of 21Vianet were as follows:

Energy consumption, resource consumption, and greenhouse gas emissions of 21Vianet in 2020

Indicator		Unit	2020
Energy consumption	Gasoline	Liter	6,155
	Diesel	Liter	111,611
	Purchased electricity	Kilowatt-hour	491,853,539
	Renewable electricity	Kilowatt-hour	12,630,661
Water consumption		Tonne	777,075
Greenhouse gas emissions	Scope 1 ⁴	Tonne of carbon dioxide equivalent	303
	Scope 2 ⁵	Tonne of carbon dioxide equivalent	389,940
	Scope 3 (business travel) ⁶	Tonne of carbon dioxide equivalent	374
Energy intensity		Tonne of standard coal/ USD 1,000 of GDP	0.08
Greenhouse gas emissions per unit of GDP ⁷		Tonne of carbon dioxide equivalent /USD 1,000 of GDP	0.53

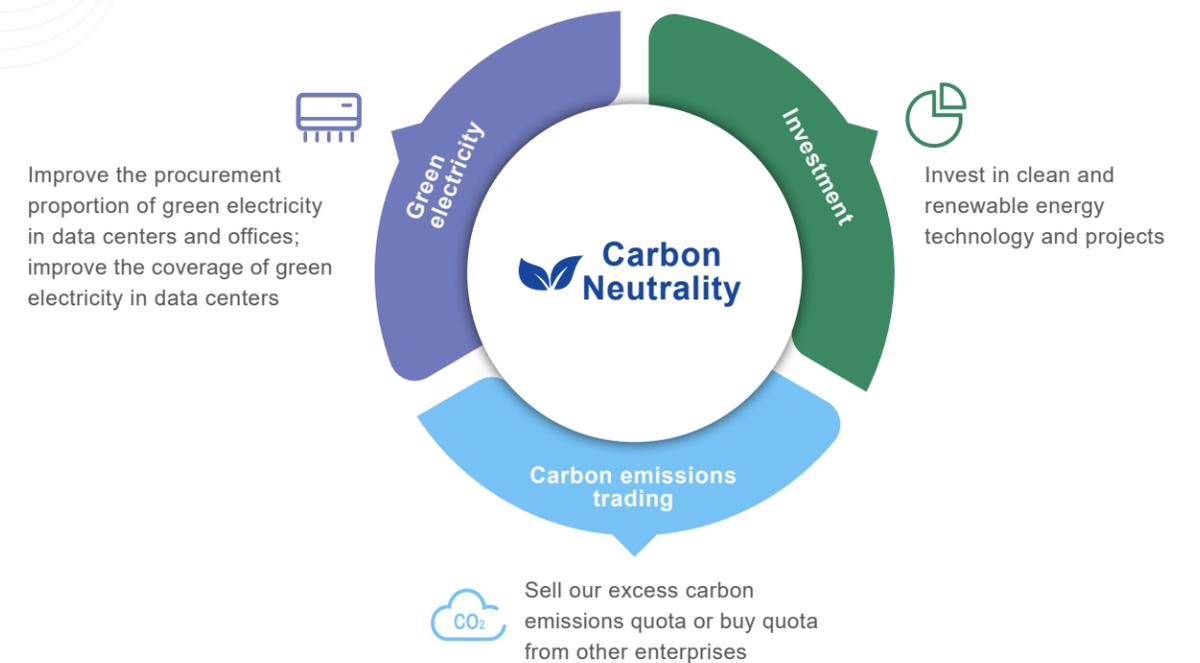
21Vianet prioritizes the goals of green development, low-carbon transformation and carbon neutrality proposed in the 14th Five-Year Development Plan of China and has incorporated such goals into our own practices. We are expediting progress towards carbon neutrality by means of carbon emissions trading, improvement in the utility of low-emissions electricity, and investments in clean and renewable energy technology and projects to contribute to carbon neutrality.

⁴Scope 1 refers to direct greenhouse gas emissions from the consumption of gasoline and diesel. The emission coefficients are derived from the China Energy Statistical Yearbook 2013, Provincial Greenhouse Gas Inventory Guidelines (Trial), 2006 IPCC National Greenhouse Gas Inventory Guidelines, etc.

⁵Scope 2 refers to indirect emissions from externally purchased electricity. The emission coefficients are derived from the average carbon dioxide emission factor of China's regional power grid in 2012.

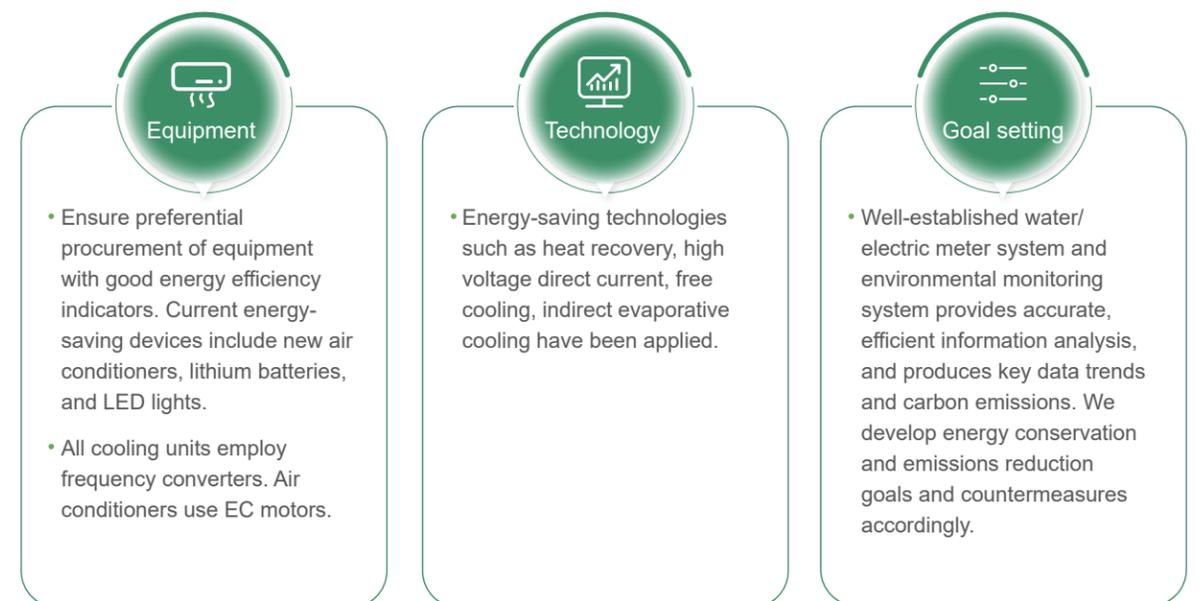
⁶Scope 3 refers to indirect emissions from travel. The emission coefficients are from Defra&DECC.

⁷As companies approach Scope 3 in very different ways, greenhouse gas emissions per unit of GDP are calculated on the basis of the total of Scope 1 and 2.



Green Data Centers

We developed our *Energy Management System, Cabinet Power Management System, Diesel Use Management Regulations* and other rules and regulations to standardize and guide energy conservation and consumption reduction work, and continue to explore new ways to improve resource efficiency and cut carbon emissions.





Green Certifications

We have received the ISO14001 environmental management certification for all environmental management activities of our computer system integration and software development services, including data center services, cloud computing, dedicated Internet access, and server and network equipment hosting services. 21Vianet has also received the ISO 50001 energy management system certification for the energy management activities of our data center, cloud computing, dedicated Internet access, server and network equipment hosting services, and office operations.



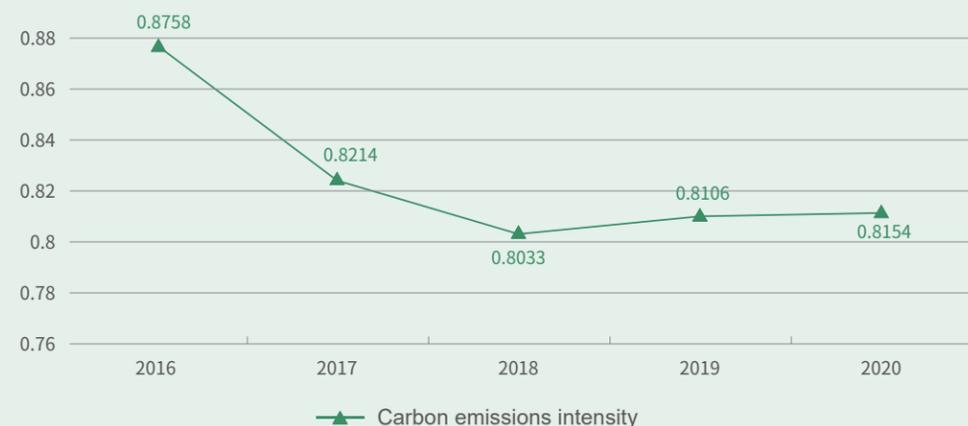
Annual Carbon Verification for the Beijing Data Centers

In 2013, Our Beijing Data Centers were incorporated in the key carbon emission unit list. The centers need to submit the verification report and allocate quota to the government annually to meet the compliance of this list. In light of policy requirements and our own emissions reduction initiative, we determine a PUE⁹ target each year to reduce the emissions per volume of business while making business development progress. We follow the *Carbon Emissions Management System* to perform carbon accounting on time and engage a third-party for data verification. From 2016 to 2019, we outperformed the quota for four consecutive years. Our carbon emission intensity calculated on stably operating data centers and newly built data centers fell below 0.9396, the standard advanced value, surpassing the industry advanced value by 15%.

Surpassing the industry advanced value by

IC
15%

Carbon Emission Intensity of 21Vianet Newly Built Facilities in Beijing (tCO2/MWh)



⁹PUE, Power Usage Effectiveness, the ratio of all the energy consumed by the data center to the energy consumed by the IT load.



In response to the *Guiding Opinions on Strengthening the Construction of Green Data Centers of the Ministry of Industry and Information Technology of the People's Republic of China, National Government Offices Administration, and National Energy Administration*, 21Vianet has worked on improving the major indicators in the *Evaluation Index System of Green Data Center*. As of the end of 2020, three data centers were shortlisted as national green data centers, including the M6 data center which was one of the first certified national green data centers, the Hangzhou Economic Development Zone Data Center, and the Anhui Suzhou High-tech Zone Data Center. These achievements exemplify the high energy-saving and environmental performance of our data centers.

In addition, 21Vianet is actively taking on the responsibility of energy conservation and emissions reduction, and our multi-dimensional, multi-channel energy conservation and emissions reduction efforts towards green data centers have been well received by local governments. 21Vianet received RMB 600,000 of energy conservation and carbon reduction incentives from the Chaoyang District Development and Reform Commission in Beijing in 2020.

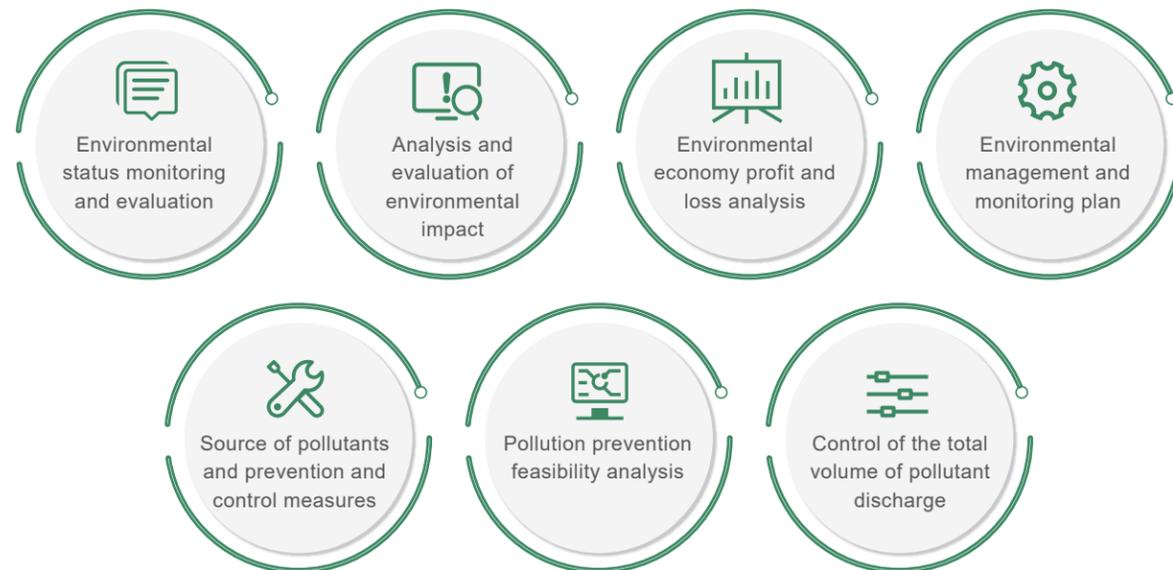
Received energy conservation and carbon reduction incentives

RMB **600,000**

from the Chaoyang District Development and Reform Commission in Beijing

| Siting and Design of Data Centers

In the siting stage, in addition to meeting the *Code for Design of Data Centers*, we assess the environmental impact (including air, water, noise, solid waste, diesel tank risks) of the data center during project registration. The assessment directions are as follows:



For M&A projects, 21Vianet conducts a series of assessments including environmental impact assessment and energy-saving plan assessment before closing to ensure safe and stable operations in the long run.

North China Green Big Data Industrial Park

In 2020, we began construction on our first large, green data industrial parks in North China. In the siting stage, we decided on the sites of data centers factoring in local constraints and energy conservation and environmental protection, and developed energy conservation plans for each industrial park. North China is marked by scarcity of water, therefore traditional water-cooling systems are not suitable. However, the climate provides free cooling for 10 months out of the year. Therefore, we opted for indirect evaporative cooling, which provides heat exchange with no direct contact between indoor air and outdoor air. Air-cooled chiller units are adopted for cooling supplement. This cooling program not only improves system safety but also lowers the PUE (power usage effectiveness).

We prioritize protecting the local environment, conserving water resources and reducing energy consumption, limiting environmental impacts when selecting sites, and developing energy conservation and environmental protection programs. This is how we shoulder environmental responsibilities as a corporate citizen.

» In addition, we plan to apply for LEED or Green Building certification for our newly planned data centers to strengthen energy conservation measures, water efficiency, and usage of materials and resources.

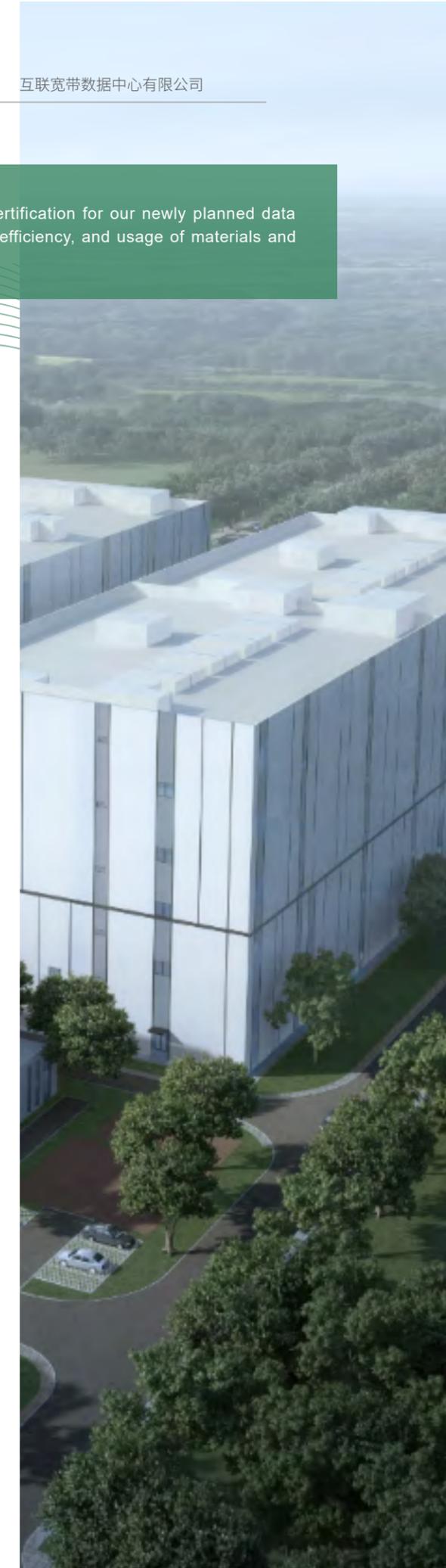
Green Design Helps Data Center in Jiangsu to Save Energy and Reduce Consumption

We plan to build our data centers in Jiangsu in accordance with "National A" standards, the highest standards in China. We plan to use 70mm extruded polystyrene board for the roof and 40mm composite foamed cement board for external wall thermal insulation to save energy. In addition, the interior will use high-quality decoration materials to strictly control the concentration of major indoor air pollutants. Rainwater from the nearby roads and roofs will be harvested and stored for irrigating plants and road cleaning to save water. Light pollution is addressed in the design process through use of glass curtain walls and landscape lighting. Public places such as aisles are equipped with an intelligent lighting control system to centrally control the use of lights. Lights are automatically turned off when they aren't needed to save electricity. Supply and return temperature of chilled water is set between 18 to 24 degrees celsius. Diffused air supply and closed hot aisles are adopted to improve return air temperature, extend the free cooling time of the cooling system, and further reduce energy consumption.

Prefabricated Structures Reduce the Environmental Impact of Data Centers in Shanghai

In response to the *Implementation Opinions on Promoting the Development of Prefabricated Buildings* in Shanghai, we employed prefabricated structures in our new data centers in Shanghai. Standardized sub-assemblies constructed at the manufacturing site save materials and reduce the workload at the construction site, thereby bringing down the environmental impact of construction.

Innovation in energy-saving technology is the key to green building. Therefore, 21Vianet has added a heat recovery system and the Panama power solution to our new data centers. In the future, we plan to introduce technical solutions such as phase-change cooling to further explore additional energy-saving potential.



Heat Recovery System Improves Energy Efficiency

Some of our data centers in Beijing were planned and designed in accordance with the "National A" standard. These centers are equipped with a heat recovery system to recover waste heat from exhaust gases, which is used to provide hot water for sinks in the data centers. This system improves the energy efficiency of the center. In addition, some data centers in Hebei Province have employed heat recovery units for heating in public areas such as offices and walkways.

>> We attach great importance to clean energy, such as wind energy, solar energy, and new storage batteries, to reduce greenhouse gas emissions. In 2020, **33%** of the purchased electricity we consumed at our three data centers in East China was generated by hydropower and nuclear power.

Photovoltaic and Energy Storage Data Center

One of our data centers in Guangdong has solar power and energy storage systems installed on the roof and in the industrial park. The solar power units generate approximately 480-720 kWh of electricity each day. The energy storage system, which has a capacity of 1MW/2MWh, charges during off-peak hours and discharges during peak hours. Its single-time storage is up to 2,000 kWh, and two charge cycles a day provide approximately 3,600 kWh of power.

 Solar power units generate approximately 480kWh-720kWh	 Single-time storage is up to 2,000kWh	 Two charge cycles a day provide approximately 3,600kWh
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Intelligent Lithium Battery Solution For the Suzhou Data Center

One of our data centers in Suzhou has employed an intelligent lithium battery overall solution to serve more than 500 cabinets. The solution saves area for end-to-end power supply needs by about 50%, making room for more cabinets and consequently more operating income, reducing the environmental pollution of lead-acid batteries in the process of production, consumption and recycling. The modular lithium battery solution not only provides high efficiency, but also has an intelligent sleep feature to boost efficiency at low load. The solution saves millions in electricity bills each year.

The solution saves area for end-to-end power supply needs by about

50%

In addition, we are actively exploring innovative integration of data centers and new energy storage, relying on our strengths to pursue green development.

Data Center Operation

Our average PUE target in 2020 went down by 2% compared to 2019. We set up an overall PUE target, and break it down according to the actual operation of each data center, establish a PUE target for each data center, and closely monitor the achievement of PUE. We also promote energy-saving design and transformation from technical and management dimensions, and have issued our *PUE Energy-Saving Project Incentive Plan*, which outlines the definition, target, execution, audit, and incentive mechanism of energy-saving projects to encourage employees to better achieve PUE targets.



To achieve the established PUE target, we implemented a number of dedicated energy-saving measures:



Waste Management

We have been standardizing our waste gas, and solid waste management in strict accordance with laws and regulations such as the *Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution*, *Law of the People's Republic of China on Prevention and Control of Water Pollution*, *Law of the People's Republic of China on the Prevention and Control of Soil Pollution*, *Law of the People's Republic of China on the Prevention and Control of Solid Waste Pollution*, *Law of the People's Republic of China on the Prevention and Control of Noise Pollution*. We take water pollution management, air pollution management, and waste pollution management as our key environmental protection tasks and control the total amount of waste generated. We developed the *Standard Safe and Civilized Construction Manual* and *Hazardous Waste Management Manual* to integrate source control, process control and treatment of pollutants into project operations and provide detailed rules for waste classification, storage, and recycling at construction sites. In addition, we strictly control the domestic waste and domestic wastewater generated during our operations and ensure compliance with wastewater discharge regulations. Solid waste is properly classified and recycled. Waste batteries in data centers are recycled by manufacturers with required environmental qualifications. In the third and fourth quarters of 2020, we recycled 234 tons of used batteries from data centers.

Green Office

21Vianet attaches importance to the environmental management at our offices. A series of energy-saving and consumption-reducing measures are taken as part of our green office initiative. Slogans are posted in offices to promote the conservation of power, paper, and water. As the garbage classification policy came out, we followed the policy to implement garbage classification to raise awareness among employees.

Green Commuting Enabled by Electric Vehicles

21Vianet encourages employees to commute by new energy vehicles. At present, the Company provides commuter shuttles for more than 40% of employees. Some of the buses consume new energy. In the future, all shuttle buses will be powered by new energy. We have also set up charging devices in our industrial park. There are 9 bike storage sheds and 25 chargers in the North China region and 3 bike storage sheds and 52 chargers in the East China region for employees to store and charge their bikes and new energy vehicles, thereby helping employees reduce their carbon footprint when traveling.



At present, the Company provides commuter shuttles for more than

40% 
of employees

Lighting Upgrade to Reduce Electricity

There are large numbers of lights in data centers that operate long hours each day and thus consume a large amount of electricity. To address this problem, 21Vianet researched the pros and cons of different lights and decided on replacing old lights with new small power, small size, long service life, high brightness, low heat, eco-friendly lights. At this time, some data centers are already running with these new lights. It is estimated that the new 18W LED light will reduce electricity consumption by 44% per day. Additionally, cold aisle lighting in stably operating data centers were spaced out to reduce the overall quantity and thus save electricity consumption.

It is estimated that the new 18W LED light will reduce electricity consumption by

44%



Products and Services

- Quality Products
- Customer Service

Environmental,
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Quality Products

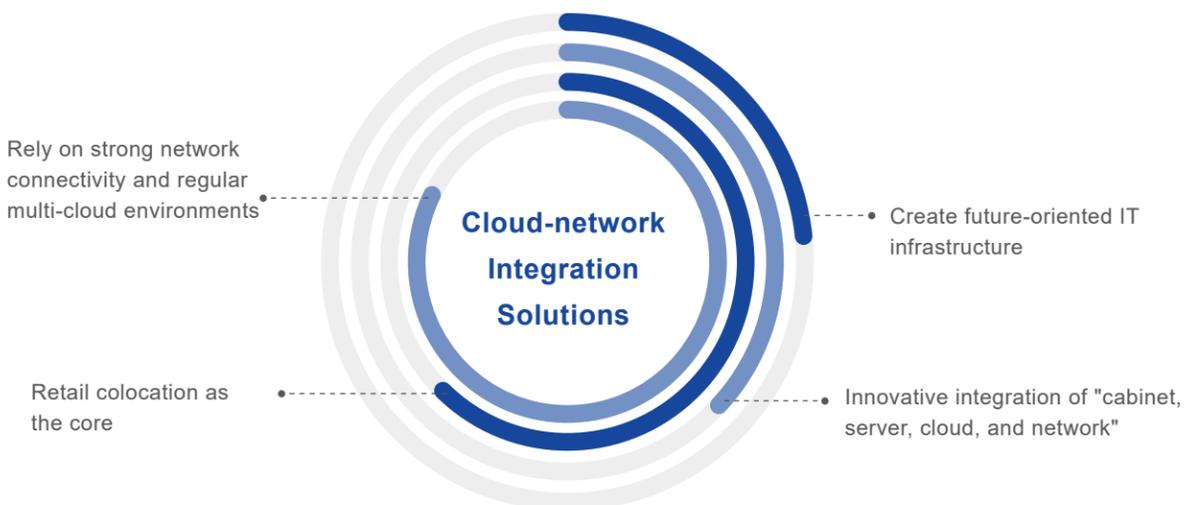
21Vianet places great emphasis on product quality and is committed to ensuring the safety, quality and stability of data centers. We continuously upgrade existing businesses and develop new businesses to cater to customers' requirements. We strictly practice procurement compliance, and have established quality and safety assurance systems and work processes to deliver quality products and services.

Business Innovation

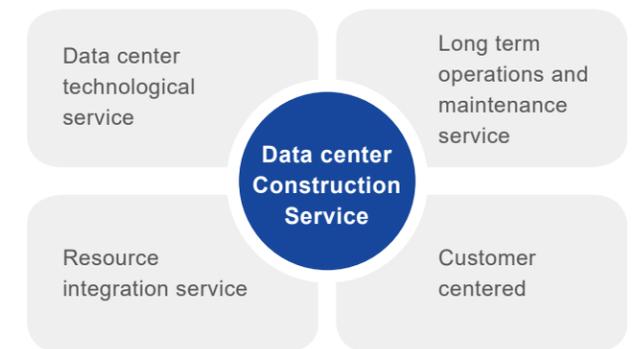
21Vianet is committed to driving innovation with technology and upgrading business capabilities through research and development (R&D). The innovation and patent application achievements of 21Vianet in 2020 are as follows:

Category	2020	Accumulated
Patent applied	30	168
Patent granted	11	78
Copyright	4	87
Trademark	22	227

As part of R&D and innovation, we focus on industry trends and consumer insights. With more than 20 years in retail data center services market, 21Vianet pioneered the "Retail IDC" and strategy, aiming at developing Retail IDC solutions centered on industry customers to fully satisfy their infrastructure needs driven by digital transformation.



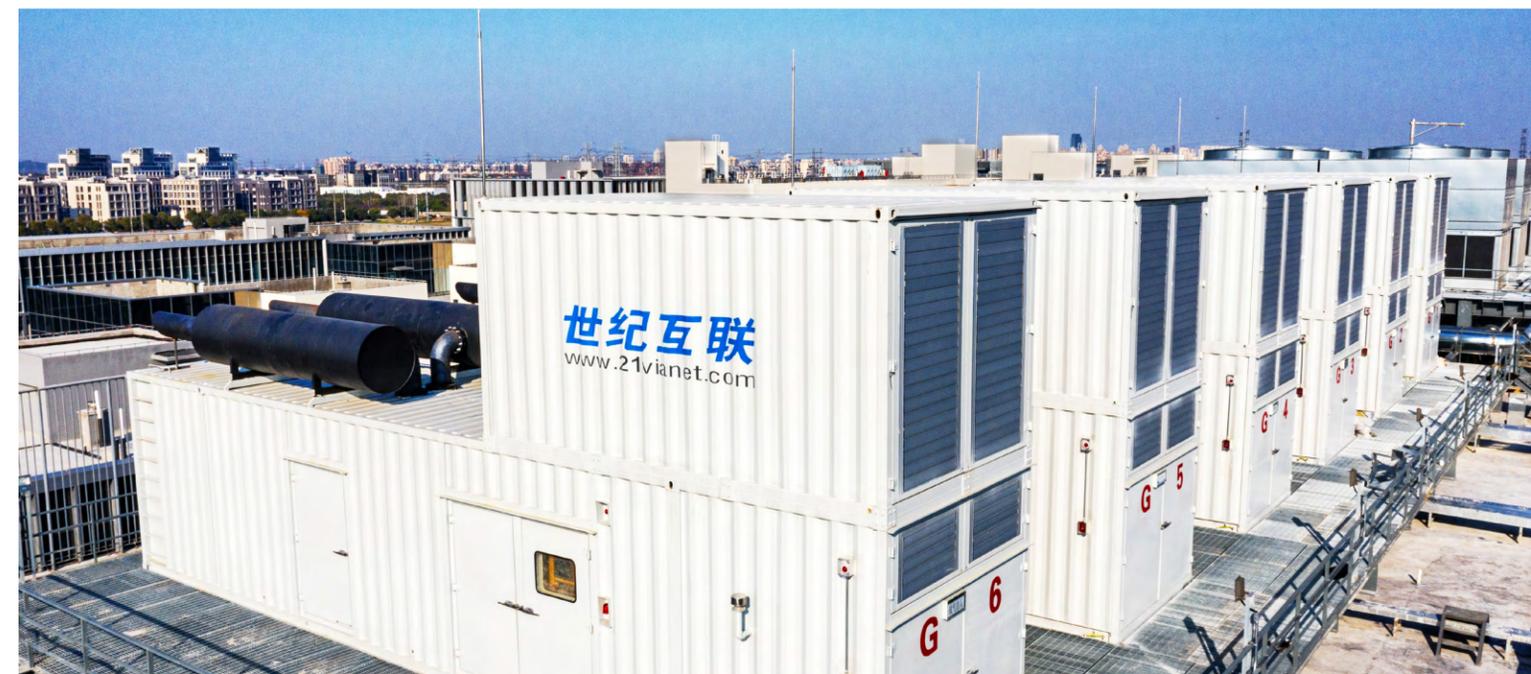
Customized services are an important direction of 21Vianet's product development and business upgrade. 21Vianet is committed to providing products and services that meet the specific needs of leading Internet companies and their industries and building an autonomous, controllable, safe and trustworthy data space that can fully meet the needs of our customers. By building a large-scale, high-level Internet infrastructure platform in China, we surpass our customers' expectations for customized data center services with a better-established service system and higher efficiency.



At the same time, we combine performance guarantee with economic benefits and business foresight. Based on the data center resources, we built an enterprise-level IT service platform, by integrating data centers, physical facilities, enterprise private clouds, and public clouds connections to develop "hybrid cloud" solutions and launched them in 2020. We gave full consideration to our customers' performance requirements for the system and ensured high availability in complex environments, with the reduction of footprint and the double assurance of customers' core business applications and extensibility. We also boosted the efficiency of operations and maintenance by reducing human effort by optimizing equipment.

Responsible Procurement

In strict accordance with national laws and applicable industry regulations, we developed the *Supplier Approval System* to comprehensively evaluate the behavior, business size, industry experience, trust records, and other aspects of suppliers. Diverse assessment is employed to ensure supplier performance in product quality, delivery capability and green supply chain. In addition, we are incorporating carbon footprint into supplier evaluation. In terms of existing suppliers, we perform regular evaluations and reviews. Our procurement department takes the lead to assess suppliers' performance against contracts, product quality, and service support among other criteria. Subsequent cooperation shall depend on the results of such assessment to ensure the quality of the supply chain. In addition, we have established our anti-corruption system and circulated it among suppliers. We have drafted the *Anti-Commercial Bribery Statement (Supplier)* and signed it with 99% of suppliers to ensure unbiased supplier screening.



Quality Assurance

We are dedicated to providing customers with solid and reliable quality assurance. To maintain the daily stability of data centers, we established an all-round training system for our operations and maintenance force and formulated learning and assessment plans for employees at different levels. Additionally, we launched the 21Vianet E-Learning platform for our operation and maintenance teams to improve the learning process of operation employees and lay a solid foundation for safe and stable operation and maintenance. In terms of work processes, we have developed a standardized process with reference to ITIL and UPTIME M&O standards to eliminate human error and improve system safety and stability. At the same time, we use BMS (building management system) and BA (building automation system) to monitor the operating parameters and operating status of data centers in real time, diagnose and address faults, and ensure the safe and stable operation of data centers. In addition, we place great importance on stability assurance during emergencies. We have developed plans and corresponding work processes to ensure the around-the-clock stable operation of data centers in an efficient and orderly manner.

Technical preparations for the Double Eleven Shopping Carnival

21Vianet has developed a key assurance plan for the Double Eleven⁹ project. A series of preparations and drills were completed in advance. We closely communicate with internal and external participants to ensure the success of the Double Eleven project. In addition, we have established our emergency event handling process and management rules to ensure the provision of quality products and services in various emergency situations or under peak pressure.



During the reporting period, 21Vianet organized employees at different departments to receive ISO/IEC 20000 information technology service management system training, which further ensures high-quality services and aligns services with business goals. Some data centers received the ISO/IEC 20000 certification.



ISO/IEC 20000 information technology service management system training at 21Vianet

Safety Assurance

21Vianet has developed work processes and standards such as *Regulations on the Screening of Hidden Risks*, *Sudden Disaster Emergency Response System*, *Safety Hazard Checklist*, *Operational Risk Self-Inspection Checklist*, and *Emergency Contact Directory During Major Holidays* to enhance safety assurance and ensure efficient, orderly handling of emergency events to minimize losses. Our safety assurance work covers fire safety, electrical safety, and data center safety during major holidays. Dedicated personnel are sent to screen, prevent, control, and eliminate various safety hazards.

⁹Double Eleven refers to the Double Eleven Shopping Carnival, an online shopping day on November 11 each year, which dated back to the online promotions organized by Taobao Mall (Tmall) on November 11, 2009. Double Eleven has become an annual e-commerce gala in China and is developing global influence.



Customer Service

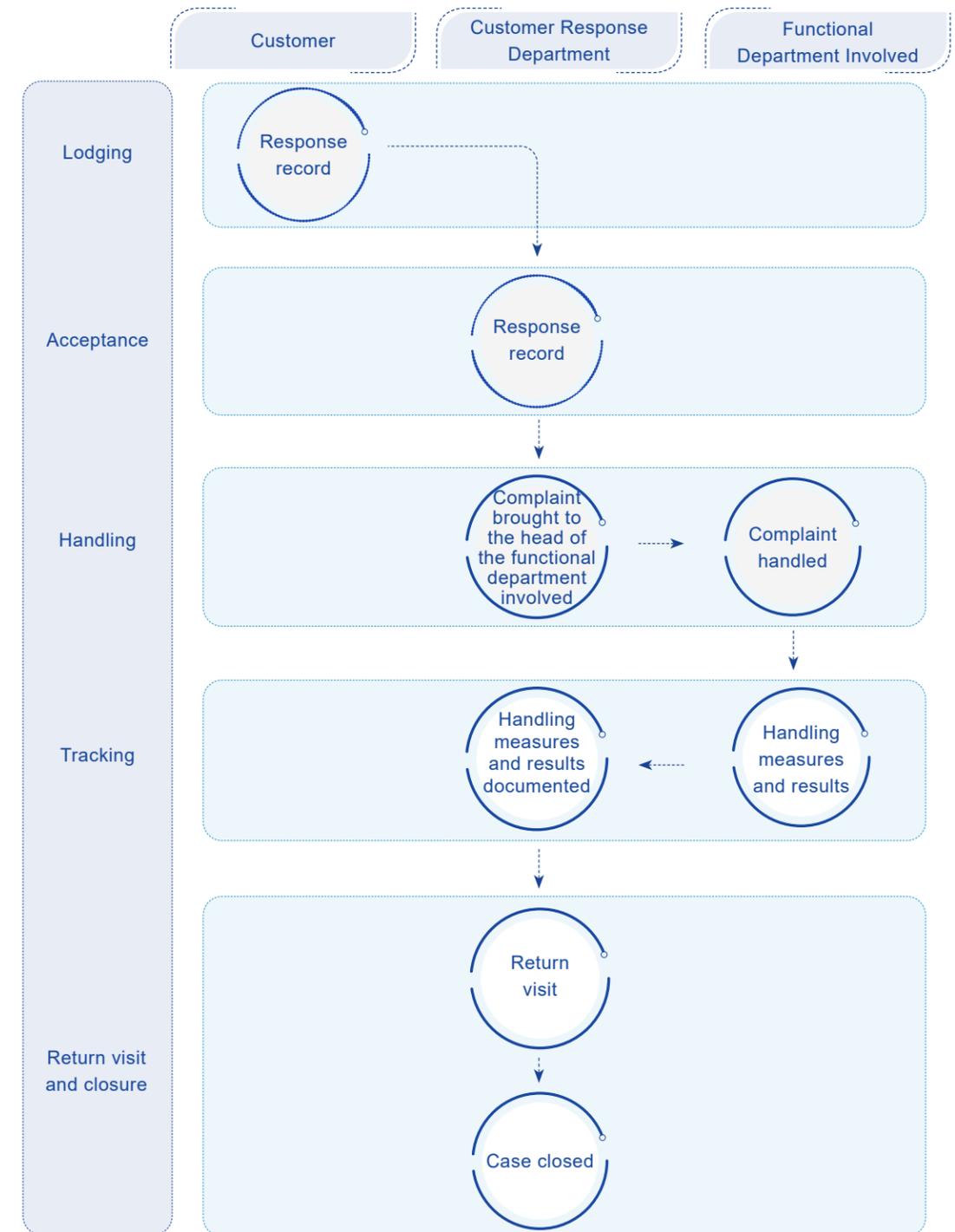
21Vianet prioritizes customer service improvements in addition to product quality. We have developed rules and systems to improve service level and customer satisfaction related to ensuring prompt response to after-sales events, responding to complaints, and institutionalizing customer privacy and information protection.

| After-sales Event and Complaint Handling

21Vianet has developed rules and systems such as the Complaint Handling Process and Customer Service Email Response Quality Assurance Standards, setting forth strict requirements of after-sales response and service quality. We also assess whether email communications are compliant with our standards through quality assurance and spot checks. We have a customer response center to attend to and follow up with all complaints. The heads of the functional departments involved are responsible for approving complaint handling measures and the escalation of complaints, as well as analyzing the reasons behind the complaints and developing corrective and preventive measures. In 2020, 100% of customers were satisfied with our customer response engineers, sustaining our record of zero complaint. Although we have the strictest service requirements in the industry, our customer response team surpassed their goals.

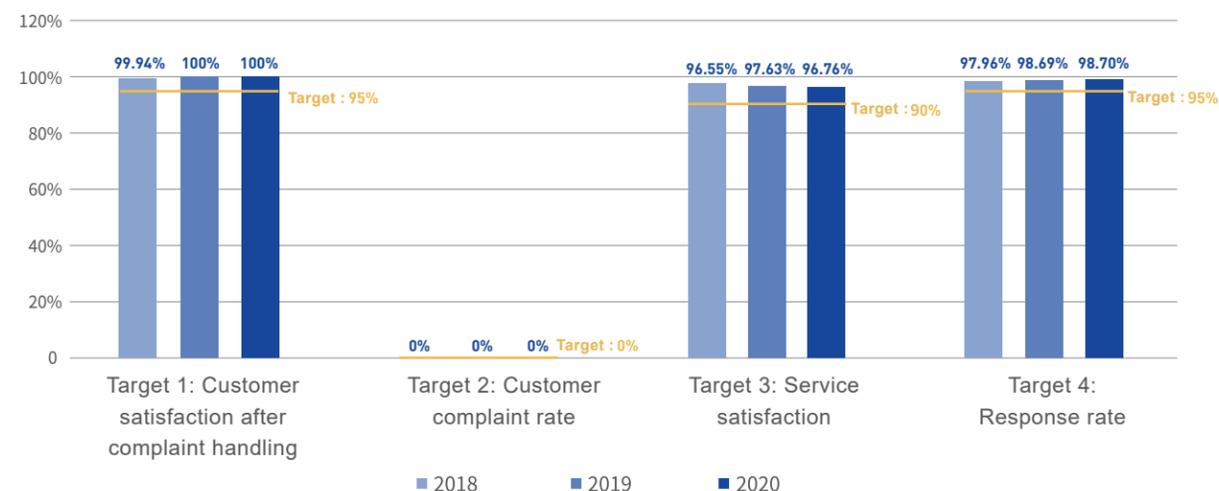
In 2020,
100%
 of customers were satisfied
 with our customer response
 engineers

21Vianet Customer Complaint Handling Process





2018-2020 21Vianet Customer Service Department Customer Response Targets Delivery Report



Improvement in Customer Satisfaction

We attach considerable importance to customer satisfaction and continuously provide value for customers by offering free service reports, customer care, key support for customer business, and customized monitoring. In addition, we conduct online surveys on nationwide customer satisfaction twice a year, surveying approximately 20% of customers about the daily performance of our sales, customer service, customer response, data center service, facility service, and network service departments. Customer opinions collected in the survey will be brought to relevant departments for improvement, and the results will be fed back to customers once they are available. In 2020, the customer satisfaction of 21Vianet was 99.28%, with an increase of 0.40% year-on-year.

The number of customers participating in the survey accounted for

20%

of the total number of customers

21Vianet customer satisfaction in 2020

99.28%

Increased by

0.40%

compared to 2019



Cybersecurity

21Vianet has developed *Information Security Management System, Cybersecurity Management System, Password Security and Confidentiality System, Cybersecurity Vulnerability Detection System, Case Report and Co-investigation System* and other systems to protect cybersecurity. Comprehensive user identification and verification measures are employed, such as access control, surveillance and other customized physical protection outside the data center. Security technologies and security mechanisms are combined to provide stricter identity verification and access time frames. To prevent and control external attacks, we strictly abide by laws, administrative regulations, rules, and our internal information security regulations, such as the *Cybersecurity Law of the People's Republic of China*, to create an underlying security platform. Logging, anomaly detection, and vulnerability scan tools are deployed to protect user data. In addition, we set up a cybersecurity emergency response center to address emergencies such as sudden disasters in a timely manner and received the China Certification of Information Security and ISO27001 Information Security Management System Certification for our efforts.



Privacy Protection

21Vianet employs remote disaster recovery, encrypted transmission, firewall, and other technical applications to assign different levels of authority to access customer information, resource query, and usage demands. During the reporting period, 21Vianet Blue Cloud further strengthened customer privacy protection. The upgraded *Microsoft Azure Privacy Statement and Microsoft Azure Online Service Standard Agreement* are ISO/IEC 27018 is compliant with clear description of the ownership of customer information. At the same time, we have incorporated the protection of personally identifiable information throughout the life cycle of operations and maintenance work. Shanghai Blue Cloud renews its Protection of Personally Identifiable Information in Public Clouds certification each year in accordance with ISO/IEC 27018 (international code of practice for protection of personally identifiable information in public clouds) to ensure the privacy and security of user data.





Social Care

- The Fight Against COVID-19
- Public Welfare

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As 21Vianet pursues sustainable development, we are actively building a public welfare platform to improve social responsibility management. We have developed an institutionalized, process-based social responsibility management system to support our public welfare efforts. We have always committed ourselves to public welfare projects by gathering resources, exploring channels and appealing to the public for action towards a harmonious society.

The Fight Against COVID-19

Facing the pandemic, 21Vianet gathered and organized resources from various channels and offered help to communities lacking medical supplies in order to help fight against the pandemic.

Supporting the Front Line as a Responsible Enterprise

The unexpected COVID-19 outbreak spread rapidly in early 2020. 21Vianet has fulfilled its corporate social responsibility. During the most difficult period, while strengthening company-wide infection prevention and control, 21Vianet immediately donated 76,000 medical masks and 1,000 set of Type3 protective clothing for those fighting on the front lines. Our actions were well received by the public and thus covered by Beijing TV.

In addition, the pandemic drove a surge in working from home. To fulfill social responsibility, we have invested hybrid cloud and data center resources to help small and medium-sized businesses resume operation and survive the crisis.

A total of

76,000

medical masks were donated

A total of

1,000

protective clothing were donated

Public Welfare

We always remember what our progress depends on and where our success comes from. 21Vianet has been aligning corporate social responsibility with our business development and why we are acting for a better future. We will keep our original aspirations and stay positive, gathering all forces to fulfill social responsibility through various channels.

Supporting the Development of Charity in Huangjing Town

On December 15, 2020, the Charity Association of Huangjing Town, Taicang City was formed. To support this public welfare program, the 21Vianet Taicang Data Center donated RMB 300,000 to the association. As an emerging representative of private enterprises in Huangjing Town, we take active steps to support the community there. We incorporate social responsibility in our business development strategy as our platform and resources expand.



Supporting Poverty Alleviation in Qijiazuo Township, Tang County, Hebei Province

On November 10, 2020, representatives from 21Vianet and other enterprises in Jiuxianqiao Subdistrict were led to Qijiazuo Township in Tang County, Hebei Province by Cui Shaofei, Secretary of the CPC Working Committee of Jiuxianqiao Subdistrict to visit local underprivileged households and make charitable donations. 21Vianet has donated office desks and chairs, computers, and electrical appliances to Qijiazuo People's Government and to poor and needy families.



To improve education quality and academic standards in China, in 2016 we signed a donation agreement with the Tsinghua Education Foundation on donating to the Tsinghua Institute of Internet Industry and Institute of Energy Internet Industry on a regular basis. During the reporting period, we donated RMB 3 million to the Institute to support development and innovation in research education. In addition, we initially invested RMB 6 million to jointly establish the Blockchain Industry College of Chengdu University of Information Technology with Chengdu University of Information Technology in 2020. The college has achieved full enrollment in the first year, and many students regarded the college as their first choice for studying.

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