

CORPORATE  
SOCIAL  
RESPONSIBILITY  
REPORT  
**2020**



CHINA UNICOM (HONG KONG) LIMITED  
HKEx: 0762

**DIGITS · WALK WITH RESPONSIBILITIES**



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## FORWARD-LOOKING STATEMENTS

Certain statements contained in this report may be viewed as “forward-looking statements” within the meaning of Section 27A of the U.S. Securities Act of 1933 (as amended) and Section 21E of the U.S. Securities Exchange Act of 1934 (as amended). Such forward-looking statements are subject to known and unknown risks, uncertainties and other factors, which may cause the actual performance, financial condition or results of operations of the Company to be materially different from any future performance, financial condition or results of operations implied by such forward looking statements. In addition, we do not intend to update these forward-looking statements. Further information regarding these risks, uncertainties and other factors is included in the Company’s most recent Annual Report on Form 20-F and other filings with the U.S. Securities and Exchange Commission.

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## MESSAGE FROM CHAIRMAN

The year 2020 was an extremely tough and extraordinary year. Facing the complicated internal and external dynamics, the severe impact of the novel coronavirus disease (the “pandemic”) and the arduous reform and development missions, we shouldered the responsibilities to fight against the pandemic, overcome major challenges, gather great wisdom and accumulate big momentum. On the one hand, we engaged in pandemic prevention and control. On the other hand, we pushed forward reform and transformation. We made every effort to create new digital edges, and actively served people’s growing needs for high-quality digital life. We leveraged our unique edges gained from the convergence of the upstream and downstream digital industry value chains following the mixed-ownership reform to empower the transformation and upgrade of thousands of industries and better serve the country’s major strategies and economic and social development, establishing a positive example in fulfilling economic, environmental and social responsibilities.

**Coordinating reform, transformation and development to promote highly effective digital governance.** We bravely acted as a “pioneer” and “vanguard” in digital transformation and smart operations. We promoted organic efficiency in business, products, services, management and processes through digitisation to ensure the organizational health and improve operating efficiency and customer service responsiveness. We strengthened data empowerment by creating a unified and agile digital foundation and enhancing middle platforms. We were the first in the industry to 100% complete cBSS migration and achieved interoperability and granular analysis and sharing of data in various domains, continuously empowering customers and the frontline. Adhering to the systematic concept, we consolidated and rationalised our mechanisms and systems, thoroughly reformed our operating systems, reengineered our workflows, implemented a director-based accountability system, conducted anti-bureaucracy reform at the headquarters, rebooted sub-division reform and deepened the market-oriented reform of subsidiaries and branch companies, stimulating the vitality of micro-entities at all levels and better adapting production relations to productivity growth. We also improved our internal control management system, strengthened supervision and assessment and enhanced closed-loop management to effectively prevent and resolve major risks and continuously enhance our competitiveness, innovation, control, influence, and risk management capabilities.

**Deploying new digital infrastructure to empower high-quality digital development.** As a “national team” in the development of cyber superpower and digital China, we shoulder the mission and responsibility of operators to lead the development of the digital economy. We accelerated the construction of high-speed, mobile, secure and ubiquitous digital infrastructure, and built the first and largest “co-build and co-share” 5G network in the world, consolidating China’s leading edges in 5G development in the world. We continued to promote the “co-build and co-share” of 4G networks, with a population coverage rate of over 94%, and the download speed maintaining the leading position in the industry for three consecutive years. The number of our broadband ports reached 225 million, and the average access speed increased by 24%. We accelerated the promotion of universal information services, and the coverage rate of mobile networks in towns reached 97.3%, laying a high-quality information foundation for the rapid development of digital economy. In order to promote digital transformation through technological innovation, we

increased the intensity of R&D investment, established joint laboratories, acquired outstanding IT talents, and promoted joint innovation among industries, academia, research sector and application development. We applied for 1,734 patents and our technological innovation significantly improved. We deployed digital technology to fortify our network security defence, making our network secure and controllable. We fully engaged in pandemic prevention and control, and persevered in our important duties to assure stable communication during the pandemic. We concentrated our resources and spared no effort to ensure smooth and reliable communication network for more than 2,000 key pandemic prevention hospitals, and successfully supported the communication at 40 high-level “cloud diplomacy” events, demonstrating our important contributions to the nation. We adhered to the harmonious coexistence of human and nature, vigorously promoted green and low-carbon technologies, strengthened electromagnetic radiation management and built a green supply chain to guard the safety boundary of natural ecology.

**Adhering to people-oriented philosophy to serve high-quality digital life.** As an operator which provides customers with high-quality services, we are committed to becoming a leading integrated digital service provider. We provided customers with convenient services by continuously expanding the supply of high-quality digital products, strengthening total life cycle management, enriching 5G package products, forging industry-leading cross-region integration capabilities, improving the “1+4+X” smart home product system and offering centralised smart customer services. Focusing on cloudification, Big Data analytics and intelligent transformation, we integrated advanced technologies such as 5G, AI and blockchain to help industries and enterprises improve quality and efficiency, and transform and upgrade. Building on proprietary capabilities, we strengthened our innovative product systems to help the digital transformation of industries such as aviation, coal, iron and steel, home appliances and machinery, etc. We opened up our smart brain data engine, gathered excellent ecological partners, and jointly built 67 municipal-level smart cities and 52 district/county-level smart cities. Building on the massive data from 31 provinces with centralised operations, we created a cloud-based, connected, data-driven, intelligent and operable “digital government” system structure, and developed new drivers for digital transformation driven by both platform system and operating system. Unicom Big Data Co., Ltd. won the title of “National Advanced Group in Fighting against COVID-19”. We deeply implemented “speed upgrade and tariff reduction”, with the average broadband and Internet dedicated line tariffs for corporate customers further reduced by over 15% and international roaming outbound data tariffs reduced by 4.5% year-on-year. We fully regulated the mobile number portability services, and customer service experience was significantly improved. With a goal of creating a “Smart Winter Olympics”, we overcame the major challenges brought by extreme winter and the pandemic, and meticulously pushed forward the network construction for the Winter Olympics to ensure that the network will be ready on time. By leveraging our network and technological edges and focusing our efforts on precise poverty alleviation, the Company successfully completed its targeted poverty alleviation and assistance missions. We arranged more than 3,000 poverty alleviation projects to lift more than 316,000 people from poverty, and we achieved the highest grade in the targeted poverty alleviation assessment for two consecutive years.

**Advocating open cooperation and win-win to drive the digital upgrade of supply chain.** We insisted on creating an “open, shared, inclusive and win-win” digital ecosystem, continued to deepen cooperation with strategic investors and industry-leading companies to promote the optimisation and upgrade of supply chain and value chain, and were one of the first to digitally transform our supply chain among central state-owned enterprises. We promoted the mutual development of various types of capital ownership structure and achieved complementary edges within an industry ecology and win-win cooperation. We promoted the ecological development of the industry, resolutely rectified vicious competition at the expense of customer interests and industry value to support the healthy and sustainable growth of the industry. We created a “new ecology” of smart living by leveraging our high-traffic portal, app to introduce third-party smart living resources, forming ecosystems in smart life, smart communication and smart entertainment, etc. We strengthened cooperation in the digital value chain and built a terminal cooperation ecosystem. We united more than 1,000 ecological chain companies to launch “Resonance Action 2020”, where we established a 5G XR terminal ecological alliance to jointly promote the in-depth development of the 5G terminal industry in specialised fields. We built a sustainable, high-quality, and ecological new system for channel cooperation and operation. Our online cooperation channels had more than 4,000 cloud stores and we had more than 20,000 micro-ecosystems, effectively driving O2O integration. We also carried out in-depth capital cooperation and successively established joint ventures such as iCloud Wisdom and Cloud Broadcasting. Through capital cooperation, we strengthened business cooperation with our partners to jointly provide customers with high-quality products and services.

Standing at a new starting point in 2021, we will strive to build a new development paradigm, deeply advance the three-year action plan of state-owned enterprise reform, and accelerate the comprehensive digital transformation. We will focus on shaping the new development advantages of high-quality services, high-quality development, highly effective governance, high-tech engines, and high-vitality operation. We will leverage the driving force of information and communication in the development of supply chain, the economy and society, and strive to achieve excellent results in the development of cyber superpower and digital China.

Wang Xiaochu  
Chairman & CEO  
March 2021

# WELCOME TO CHINA UNICOM

## COMPANY PROFILE

China Unicom (Hong Kong) Limited (“China Unicom”, or the “Company”) is the Hong Kong-listed red-chip company of China United Network Communications Group Company Limited. It was incorporated in Hong Kong in February 2000 and listed on the New York Stock Exchange (“NYSE”)<sup>1</sup> and The Stock Exchange of Hong Kong on 21 and 22 June 2000 respectively. The Company was included as a constituent stock of the Hang Seng Index on 1 June 2001. The Company merged with China Netcom Group Corporation (Hong Kong) Limited on 15 October 2008.

China Unicom’s principal operations include, among others, fixed-line service, mobile service, domestic and international communication facilities service, data communication service, network access service, various value-added services and system integration services related to communication and information services. China Unicom’s modern telecommunication network covers China and connects to the world. We are making vigorous efforts to drive bandwidth upgrades of our fixed-line and mobile networks as well as the implementation of the “cyber superpower” strategy at the corporate level, in order to provide users with a full range of high-quality information and telecommunication services. In 2020, China Unicom played a leading role in 5G, continued to build and accumulate 5G<sup>+</sup> brand visual assets, carried out “Innovation walks with Intelligence” brand upgrades, and has set different brand promises for the five scenarios of consumer Internet, home Internet, experience Internet, industrial Internet and ecological platform.

In 2020, facing the complicated internal and external situations, China Unicom coordinated the pandemic prevention and control and the reform and development tasks. It further promoted the network “co-build and co-share” and continuously participated in positive development of the industry dynamics. It carried out comprehensive digital transformation and deepened the mixed-ownership reform and continued to make solid strides on high-quality development.

Note 1: Based on the Executive Order 13959 issued on 12 November 2020 by the former President of the United States and the guidance by the US Department of the Treasury’s Office of Foreign Assets Control, NYSE staff determined to commence proceedings to delist the Company’s ADSs and suspended trading in the Company’s ADSs from 11 January 2021. In order to protect the interests of the Company and its shareholders, on 20 January 2021, the Company filed with NYSE a written request for a review of the determination by a Committee of the Board of Directors of the NYSE. Please refer to the Company’s announcement dated 21 January 2021.

## CULTURAL PHILOSOPHY

China Unicom has actively practiced the strategy of cultural superpower. It upheld the motion that culture is critical in prospering and strengthening the corporate and continuously strengthened the construction of corporate culture. It improved the soft power of corporate culture, and built corporate culture system of China Unicom that consists of a core philosophy system and a code of conduct system.

### Core Values

Customer-oriented    Team collaboration  
Open and innovation    Committed to excellence

### Mission

Connect the world to innovate and share a good smart living

### Vision

Be a creator of smart living trusted by customers

### Management Philosophy

All for the customers  
All for the front line  
All for the market

### Core Philosophy System

Corporate Culture System of China Unicom

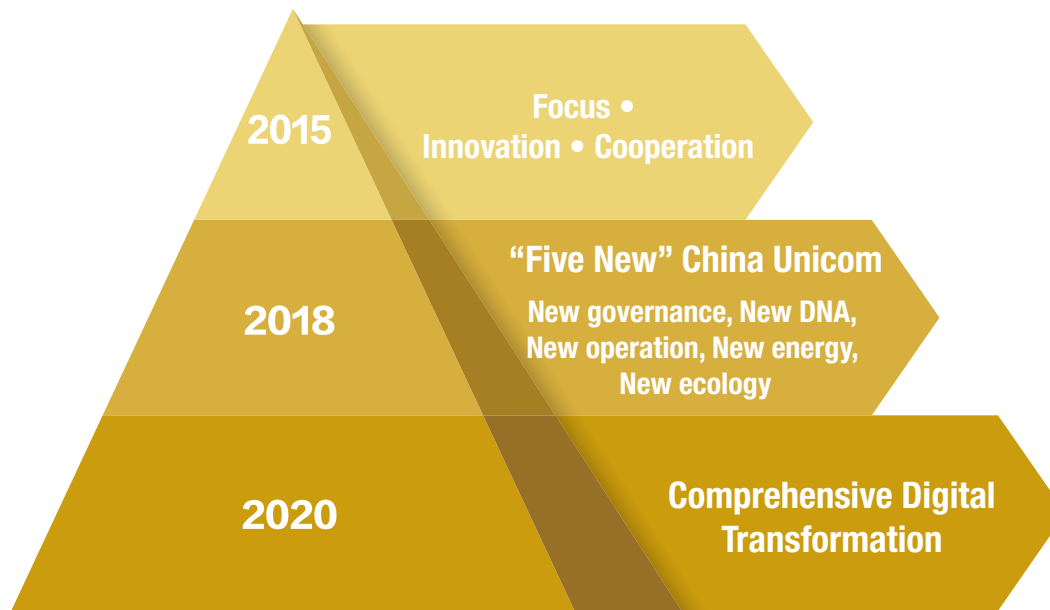
### Code of Conduct System

High prohibitions of behaviours  
Basic code of conduct

## CORPORATE STRATEGY

China Unicom deeply implemented the new development philosophy and accelerated the construction of a new development pattern. It firmly implemented the strategy of focus, innovation and cooperation. China Unicom will deepen the mixed-ownership reform and accelerate comprehensive digital transformation guided by the construction of a “Five New” China Unicom. It aims to become a comprehensive digital service provider with leading development quality, digital operation capability, factor allocation efficiency and governance efficacy by 2025; and become a world-class enterprise with global competitiveness that can contribute to the comprehensive construction of a modern socialist country by 2035.

China Unicom has always adhered to and implemented the strategy of “Focus, Innovation, Cooperation”



“Five New” China Unicom and comprehensive digital transformation are all integrated into and inherited from the implementation of the “Focus” strategy

Strategic framework of China Unicom

## CORPORATE GOVERNANCE

China Unicom is committed to maintaining high standards of corporate governance and believes that good corporate governance is critical to the long-term success and sustainable development of the Company’s business. The Company adopts the Companies Ordinance (Chapter 622 of the Laws of Hong Kong), the Securities and Futures Ordinance of Hong Kong and other related laws and regulations as the basic guidelines for the corporate governance. The Company’s articles of association are in full compliance with the regulatory requirements of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited. The Company takes these rules as guideline to improve the foundation of its corporate governance, and strives to comply with international and local standards for best practices in corporate governance. China Unicom did not have any instance in violation of listing-related laws and regulations in 2020.

### Responsibilities towards the capital markets

To further enhance the information disclosure system and to ensure the truthfulness, accuracy, completeness and timeliness of its public information disclosures (including inside information), the Company has adopted and implemented the Information Disclosure Control Policy. In an effort to standardise the principles for information disclosures, the Company has established the Information Disclosure Review Committee which under the management and formulated the procedures in connection with the compilation and reporting of the financial and operational statistics and other information, as well as the procedures in connection with the preparation and review of the periodic reports. Moreover, the Company established detailed implementation rules with respect to the content and requirements of financial data verification, in particular, requiring the upward undertaking by the individual responsible officers of major departments.

The Company’s effort in corporate governance (including information disclosure) is well recognised by the capital market, and was accredited with a number of major awards.

### Responsibilities towards the investors

The Company attaches importance to investor relations and maintains ongoing dialogues with the shareholders, and in particular, to communicate with shareholders through annual general meetings. Annual general meeting shall be held every year, and extraordinary general meeting may be held when the Board deems it appropriate, the Company’s Directors and representatives of Board committees will attend the meetings. All matters at the Company’s general meetings are resolved by poll and the relevant procedures are explained at the meeting and the Company publishes the poll results in a timely manner, thereby offering protection of the shareholders’ rights and interests. The Company adopted Shareholders’ Communication Policy to ensure that the shareholders are provided with readily, equal and timely access to balanced and understandable information to protect their right to know.

In addition to publishing annual reports and interim reports, the Company discloses unaudited financial information and other performance indicators on a quarterly basis and announces operational statistics on a monthly basis in order to further enhance the Company’s transparency and improve investors’ understanding of the business operation of the Company. Upon the announcement of interim and annual results or major transactions, the Company will generally hold analyst briefings, press conferences, and global teleconferences with investors, during which the Company’s management would accurately and thoroughly respond to questions raised by stakeholders.

The Company has established the investor relations department, which is responsible for providing information and services requested by investors and maintaining timely communications with investors and fund managers. The Company also arranges from time to time roadshows and actively attends investor conferences arranged by investment banks, through which the Company’s management meets and communicates with investors. The Company actively responds to investors’ concerns, and transparently makes adequate disclosures on the Company’s efforts to address climate-related risks on climate change issues that have been widely concerned by investors in recent years.

Latest updates on the Company’s significant business developments are being provided in a timely and accurate manner through announcements, press releases and the Company’s website ([www.chinaunicom.com.hk](http://www.chinaunicom.com.hk)), so that investors can keep abreast of the Company’s latest developments. The Company was voted as “Best Overall Investor Relations (Large Cap)”, “Best in Communications Sector” and the “Best in Hong Kong” at “IR Magazine Award — Greater China 2020”.

## The Board of Directors and management

To serve the best interests of the Company and its shareholders, the Board of Directors of the Company is responsible for reviewing and approving major corporate matters, including, amongst others, business strategies and budgets, major investments, capital market operations, as well as mergers and acquisitions. The Board of Directors is also responsible for risk management and internal control, and reviewing and approving the regular announcements periodically published by the Company regarding its business results and operating activities. In addition, the Board of Directors has overall responsibility for environmental, social and governance strategies and reporting. The Company has established three committees under the Board of Directors, namely, Audit Committee, Remuneration Committee and Nomination Committee.



**Wang Xiaochu**

Chairman and  
Chief Executive Officer

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**Chen Zhongyue**

Executive Director and  
President

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**Li Fushen**

Executive Director

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**Mai Yanzhou**

Senior Vice President

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**Liang Baojun**

Senior Vice President

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**Zhu Kebing**

Executive Director and  
Chief Financial Officer

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**Fan Yunjun**

Executive Director and  
Senior Vice President

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**He Biao**

Senior Vice President

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**Cheung Wing Lam Linus**

Independent Non-executive  
Director

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**Wong Wai Ming**  
Independent Non-executive  
Director



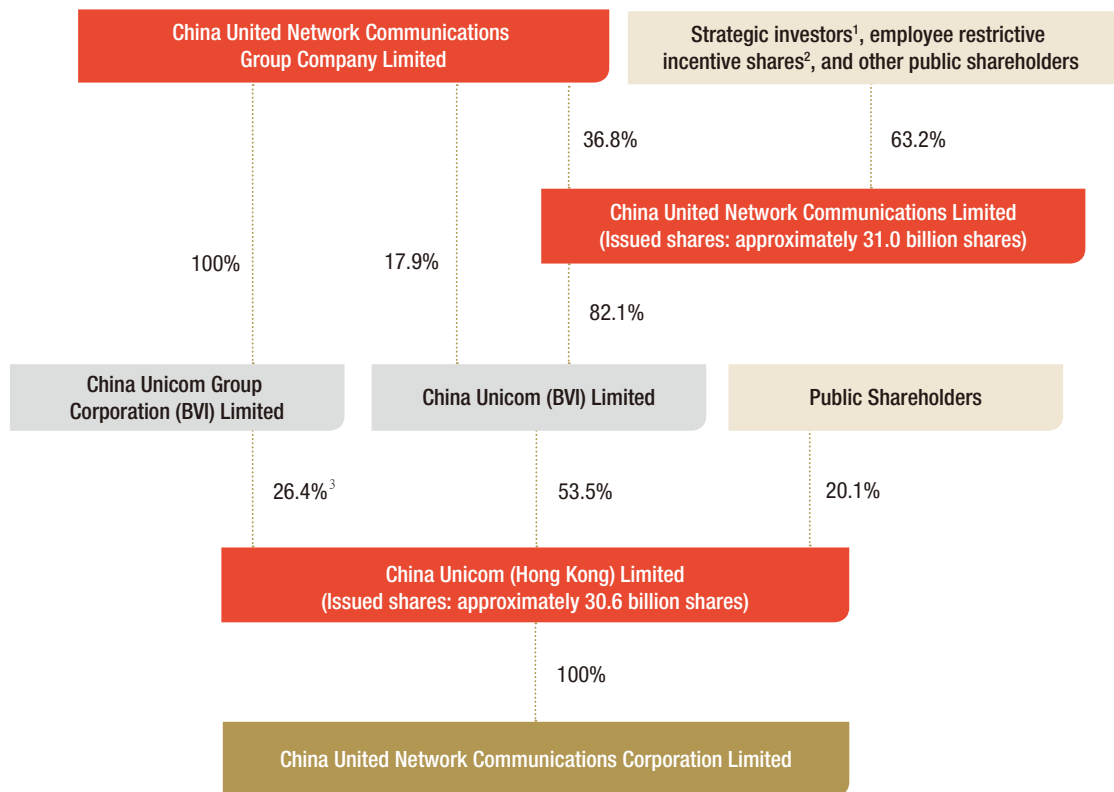
**Chung Shui Ming  
Timpson**  
Independent Non-executive  
Director



**Law Fan Chiu Fun Fanny**  
Independent Non-executive  
Director

Note: Changes of the Board of Directors and management  
Chen Zhongyue was appointed on 19 February 2021.  
He Biao was appointed on 18 June 2020.  
Li Guohua has resigned on 11 March 2020.  
Shao Guanglu has resigned on 16 January 2020.  
Cesareo Alierta Izuel has retired on 25 May 2020.

## SHAREHOLDING STRUCTURE



Shareholding Structure of China Unicom

Notes:

1. In 2017, approximately 10.9 billion shares of China United Network Communications Limited were acquired by the strategic investors introduced by the mixed-ownership reform through non public share issuance and transfer of existing shares. These shares were no longer restricted from sale in November 2020.
2. Pursuant to the initial grant of restrictive share incentive scheme, China United Network Communications Limited granted approximately 800 million restricted shares to the core employees, of which, approximately 300 million shares were unlocked in April 2020.
3. Excluded the interest regarding the pre-emptive right owned by China Unicom Group Corporation (BVI) Limited in 225,722,791 shares of the Company.

# PANDEMIC CONTROL

Persevering in our mission to combat the pandemic in fulfilment of our pivotal role

In the face of the sudden COVID-19, China Unicom quickly responded with respect to pandemic prevention and communication assurance. It emphasised on both pandemic prevention and business operations to ensure smooth network communication, sound service and effective assurance. It fully leveraged its new digital technology edges to support precise pandemic prevention and the resumption of work, production and schooling, thereby contributing to the winning of the battle against COVID-19 and fully fulfilling its role as a key pillar of a great nation.



## GOING ALL OUT TO FIGHT THE PANDEMIC

Facing the major test of pandemic prevention and control, China Unicom quickly established a prevention and control system by strictly enforcing the prevention and control responsibilities of units at all levels. Taking into account actual circumstances, the Company dynamically formulated various prevention and control measures. We went all out to leverage our edges to ensure communication security and network stability while protecting the safety of our employees, thus demonstrating the responsibility of a central state-owned enterprise.

### Quickly Establishing a Prevention and Control System

The pandemic is an order, and prevention and control are our responsibility. China Unicom took the initiative and acted quickly, carefully formulated work plans and emergency plans, and formed a prevention and control system with joint and strict measures both inside and outside the Company.

A leading team for pandemic prevention and control was established, which consisted of five sub-groups, namely general coordination group, medical security group, humanistic care group, building security group and legal support group. A pandemic infection report system was established.

An overseas pandemic prevention and control working team was established to carry out pandemic prevention and control supervision work for overseas institutions according to local actual conditions.

Since the outbreak of the pandemic, the Company's Pandemic Prevention Office held over 60 meetings and released 48 documents to make careful arrangements for formulating pandemic prevention measures, dispatching pandemic prevention materials, key communication assurance, personnel safety and treatment of infected employees, etc.

The Company pioneered a one-on-one material support model among central state-owned enterprises to strengthen the allocation of pandemic prevention materials across provinces, effectively solving the problem of severe shortage of medical supplies in severely affected areas.

China Unicom Global Limited ("CUG") sourced a total of 1.1 million masks and other materials for domestic pandemic prevention while such materials were in shortage. CUG also actively procured materials to support overseas pandemic prevention when the pandemic was raging overseas. Its fight against the pandemic has never stopped.



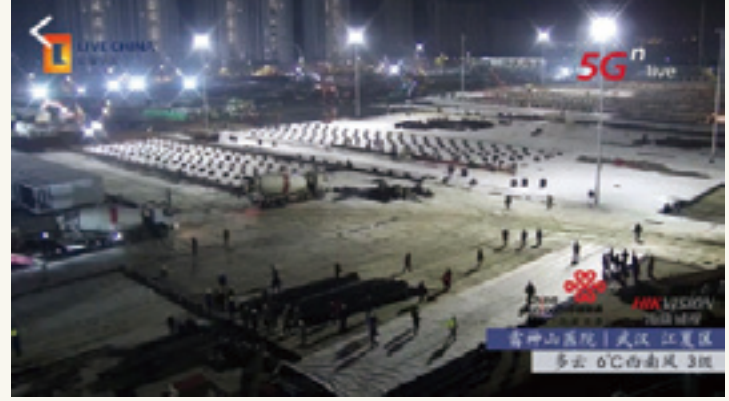
CUG was inspecting and transporting pandemic prevention materials

### Ensuring Smooth Communication Services

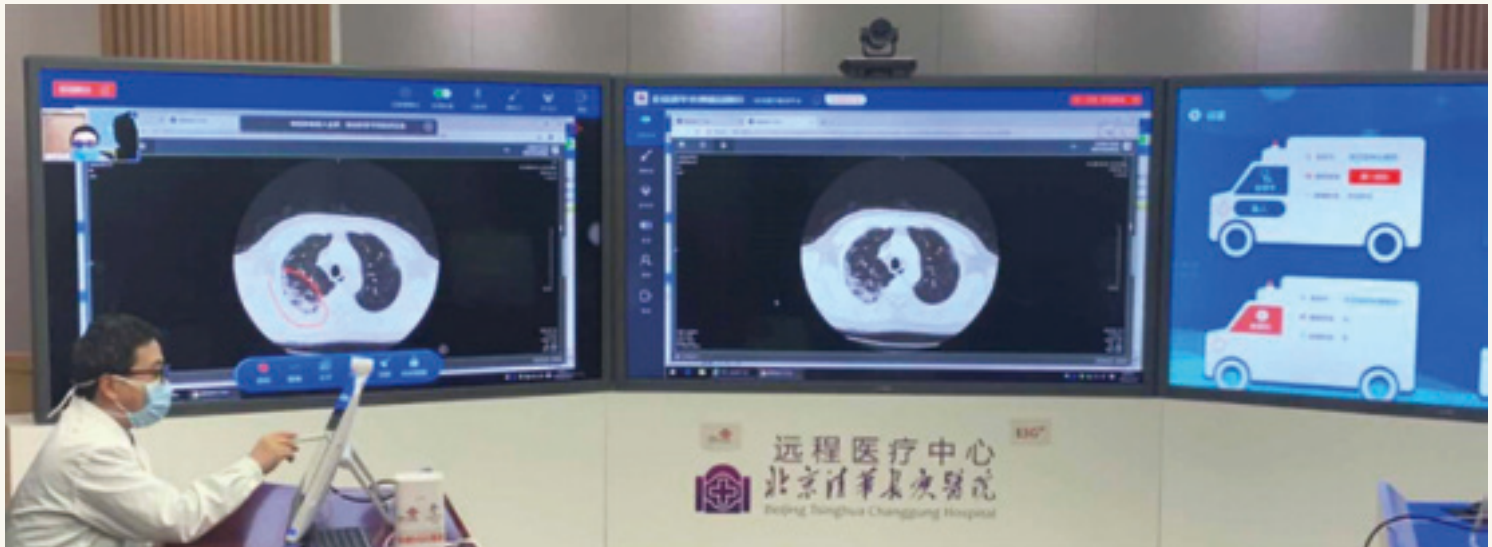
As a state-owned telecommunications company, China Unicom leveraged its network advantages, insisted on a holistic thinking, and actively mobilised its branch companies and subsidiaries to participate in the communication assurance for local pandemic prevention and control, setting up an information transmission "lifeline" for fighting the pandemic.

- Focusing on VIP customers such as pandemic prevention hospitals and healthcare authorities, 6,171 dedicated lines were installed/expanded, and 71,394 dedicated lines were specially protected to achieve zero failure.
- Approximately 300 million users in 29 provinces were reprieved from suspension due to arrears in the emergency period. Focusing on assuring communications for medical personnel, the Company offered a total of RMB9.7 billion in phone tariff discounts or giveaways to more than 20,000 medical personnel. In addition, the Company gave away free data and voice allowance to more than 130,000 medical personnel who were the Company's customers, equivalent to approximately RMB9.04 million.
- Distributed nearly ten billion of public service messages for pandemic prevention and control, and provided an integrated solution of "Callers' ID/SMS on hang-up" for provincial health commissions and CDCs.
- Strongly promoted online service sign-up and guided users to sign up most services without leaving home. Guided users to repair faults remotely to avoid potential cross-infection caused by on-site services.

In early 2020, China Unicom Hubei branch kept in mind that “people’s interests are above everything else”, and went all out to fight the pandemic. From the network coverage of Huoshenshan Hospital and Leishenshan Hospital to the network assurance of tens of designated hospitals, from the dedicated line reassurance of medical institutions across the province to the network coverage of more than 20 shelter hospitals, from the 8-hour rapid network expansion for nucleic acid testing to the emergency repair of networks in bad weather, China Unicom Hubei branch dispatched assurance personnel for a total of more than 20,000 times and inspected more than 30,000 kilometers of communication lines, ensuring the smooth operation of the province’s network and making important contributions to the fight against the pandemic.



China Unicom’s Internet Pioneer Team conducting construction work at Leishenshan Hospital and “Cloud Supervision” live broadcast



Beijing Tsinghua Changgong Hospital connected with Leishenshan Hospital for 5G medical consultation

With an “indomitable” lofty ambition, China Unicom Guangdong Zhaoqing branch rushed into the battlefield of fighting the pandemic, and quickly installed three 5G base station sites for municipal health bureau and designated hospitals in 5 days. It sent a total of 20,767,000 public service messages for pandemic prevention and control in 57 occasions and offered phone tariff discounts to pandemic prevention personnel, becoming the “most beautiful servant” on the front line of pandemic control.



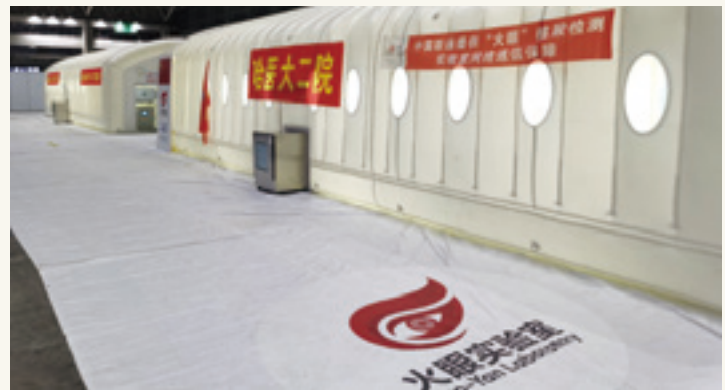
In July 2020, in the face of the worsening COVID-19 pandemic in Xinjiang, China Unicom Xinjiang branch acted quickly, made careful arrangements, and took various measures to prevent and control the pandemic. It deployed communication assurance personnel for 87 times and assurance vehicles for 56 times, inspected 38 base station sites and repaired 63 faults. It maintained 7x24 uninterrupted manual or self-service hotline services, and established a remote expert support team, providing solid communication assurance for the pandemic prevention and control.

As 2021 just began, a new round of COVID-19 invaded the land of Northern China, and the pandemic prevention and control in Hebei Province entered a wartime state. China Unicom Hebei branch immediately launched an emergency plan, coordinated actions at provincial and city levels, and fully participated in the fight against the pandemic. China Unicom Shijiazhuang branch strengthened the dispatch of emergency support personnel and rescue vehicles. After 15 hours of continuous hard work, it turned on the first 5G base station in a centralised isolation point to support the pandemic prevention and control. China Unicom Xingtai branch actively assisted the local government in fighting the pandemic, went all out to strengthen its video surveillance network, and supported the testing and installation of video surveillance equipment in a total of 358 quarantine points in the urban area and 10 counties, making outstanding contributions to winning the battle against the pandemic.



China Unicom Hebei branch spared no effort to ensure the communication network construction at the centralised isolation points in Zhengding

In mid-January 2021, the COVID-19 pandemic in Harbin suddenly worsened. China Unicom Heilongjiang branch shouldered its responsibilities and missions, and took united actions to tackle challenges around the clock to demonstrate “China Unicom speed” and “China Unicom responsibility”. It completed in the shortest time the communication assurance for Huo-Yan Laboratory, and assisted the Harbin government in precise pandemic control with practical actions, ensuring the communication “lifeline” of the people in the city.



China Unicom Heilongjiang branch completed the communication assurance for Huo-Yan Laboratory

## EMPOWERING RESUMPTION OF WORK AND PRODUCTION BY TECHNOLOGY

China Unicom took full advantage of new digital technologies such as cloud computing, Big Data, Internet of Things (IoT), artificial intelligence (AI), etc. to provide smart mobile products for pandemic monitoring, data platforms for pandemic prevention and control and innovative solutions, etc., thereby providing smart protection for the resumption of work, production and schooling.

### Assisting in Precise Pandemic Prevention with Digital Intelligence

China Unicom capitalised on the multi-source, massive and integrated advantages of Big Data to empower “predictable” pandemic prevention and control, and provide timely decision-making support for all parties in the society, facilitating scientific and precise pandemic prevention and control.

- With 10 self-developed platforms for population flow, pandemic assessment, AI pandemic compliance monitoring, etc., the Company provided more than 20,000 pandemic prevention and control analyses and reports on resumption of work and production for more than 20 national ministries and commissions and more than 300 local pandemic prevention and control departments. Travel history codes were used for 1.4 billion times.



China Unicom’s Big Data “healthy U code”

- The Company transparently visualised data through products and services such as “community risk prediction”, “travel history query” and “healthy U-code”, letting the public know nearby risks at any time to avoid panic.

## Supporting Resumption of Work and Production with Technology

Facing the dual requirements of routine pandemic prevention and control and orderly resumption of work and production, China Unicom innovatively developed many digital applications such as Big Data platforms for resumption of work and production, cloud video conferencing, distance education and AI pandemic prevention monitoring based on key technologies such as network + Big Data + AI. Such digital applications facilitated the full resumption of work, production and schooling, and proactively served the social and economic development.

Developing Big Data platforms for resumption of work and production

This platform can effectively display the resumption of work and production in prefecture-level cities and key regions and can provide population datasets and reports on resumption of work and production, so as to provide the government with a basis for decision-making and promote the resumption of work and production in an orderly manner.

Promoting cloud video conferencing system

Through R&D and promotion of cloud video conferencing system, the Company facilitated telecommuting, served more than 10,000 institutions and departments in 31 provinces, and supported 25,000 video conferences.

Launching WO Family online classroom solution

The Company actively catered for the Ministry of Education's requirement of "Continuous learning during suspension of classes", and launched an innovative comprehensive solution called "WO Family Online Classroom" for all primary and secondary schools.

Developing AI-assisted pandemic prevention products

The pandemic compliance monitoring system developed by the Company using AI capabilities was widely used in campuses, hospitals, communities and other scenarios, and made positive contributions to the country's coordination of pandemic prevention and control and the resumption of work and production.

Assist SMEs to raise capital and weather the pandemic

Since the outbreak of COVID-19, small and medium-sized enterprises (SMEs) faced difficulties in production and operation. To this end, China Unicom created a supply chain finance platform to channel bank funds to credit loans of SMEs, thereby improving the efficiency of the financial system in supporting the private economy, building an interactive ecosystem of "government + banks + enterprises" and promoting the sustainable and healthy development of SMEs.



China Unicom's Big Data platform for resumption of work and production



China Unicom's "Continuous learning during suspension of classes" cloud courses

Unicom Big Data Co., Ltd. strived to promote the integration of technological innovation and pandemic control use cases, greatly improved the efficiency of pandemic control through its powerful technologies and put into actions the wisdom of scientific prevention and control on the front line. In September 2020, the company was awarded the honorary title of National Advanced Group in Fighting COVID-19.



In the face of the pandemic, China Unicom Zhejiang Jiaying branch actively responded, and deployed more than 90 sets of thermal imaging body temperature monitoring equipment in production and living places such as wet markets, schools, hospitals, and enterprises, building the “first line of defense” for pandemic prevention and control. Building on its high-quality 5G network, the branch developed a local version of the “WO code” health ETC verification platform, and received a total of 2.083 million QR code scans. The branch also developed an online application system for enterprises to resume production, which effectively assisted 3,715 companies in Tongxiang to apply for resumption of production through “online application + on-site solution”.



Body temperature measurement solution applied in Dushangang Town



A patrol robot with 5G+ infrared body temperature detection

China Unicom Guangxi branch provided multi-scenario and intelligent pandemic control services using Big Data technology. The branch launched China Unicom’s 5G thermal imaging body temperature measurement solution, and provided 118 entities with such solution, to achieve long-distance, contactless, multi-target and high-precision body temperature screening. The branch also promoted China Unicom’s DingTalk Cloud Classroom among millions of households, and quickly built a “Classroom in the Air” network platform. The number of registered students of DingTalk Cloud Classroom reached 91,200, and the number of average daily active users reached 15,300, supporting “continuous teaching and learning during suspension of classes”.

## CARING FOR THE LIVES AND HEALTH OF EMPLOYEES

China Unicom always puts the safety and health of its employees first. Due to early deployment, quick actions and strict measures in fighting the pandemic, the pandemic prevention and control situation of the Company was stable, maintaining a very low infection rate and zero death among employees.

- For employees with underage children in need of childcare and pregnant female employees, the Company adopted accommodative measures such as home office and flexible working hours.
- The Company took measures to protect the well-being of employees on duty, such as strictly controlling the crowdedness in workplaces, and providing employees with pandemic prevention materials such as masks and disinfectants.
- The Company endeavoured in the pandemic prevention and control for overseas employees and their family members and provided them with pandemic prevention materials and online psychological care.
- The Company offered various forms of condolences and services for its employees and their family members quarantined or stranded in the pandemic areas, including delivering food to their homes, regular video home visits, applying for mutual aid, handling critical illness claims, etc., to effectively solve the most immediate and practical problems of its employees.

With the courage to assume responsibility, the wisdom of scientific prevention and control, the strategy of overall planning and the capability of effective implementation, China Unicom Shandong branch adopted a variety of solid and specific measures such as staggered rush hour arrival, health monitoring, heart-warming paper towels and regular disinfections to facilitate the resumption of work and production, demonstrating its meticulous care for the health of its employees, and accumulating strength for winning the fight against the pandemic.



Staggered rush hour arrival of employees



Comprehensive disinfection in business outlets

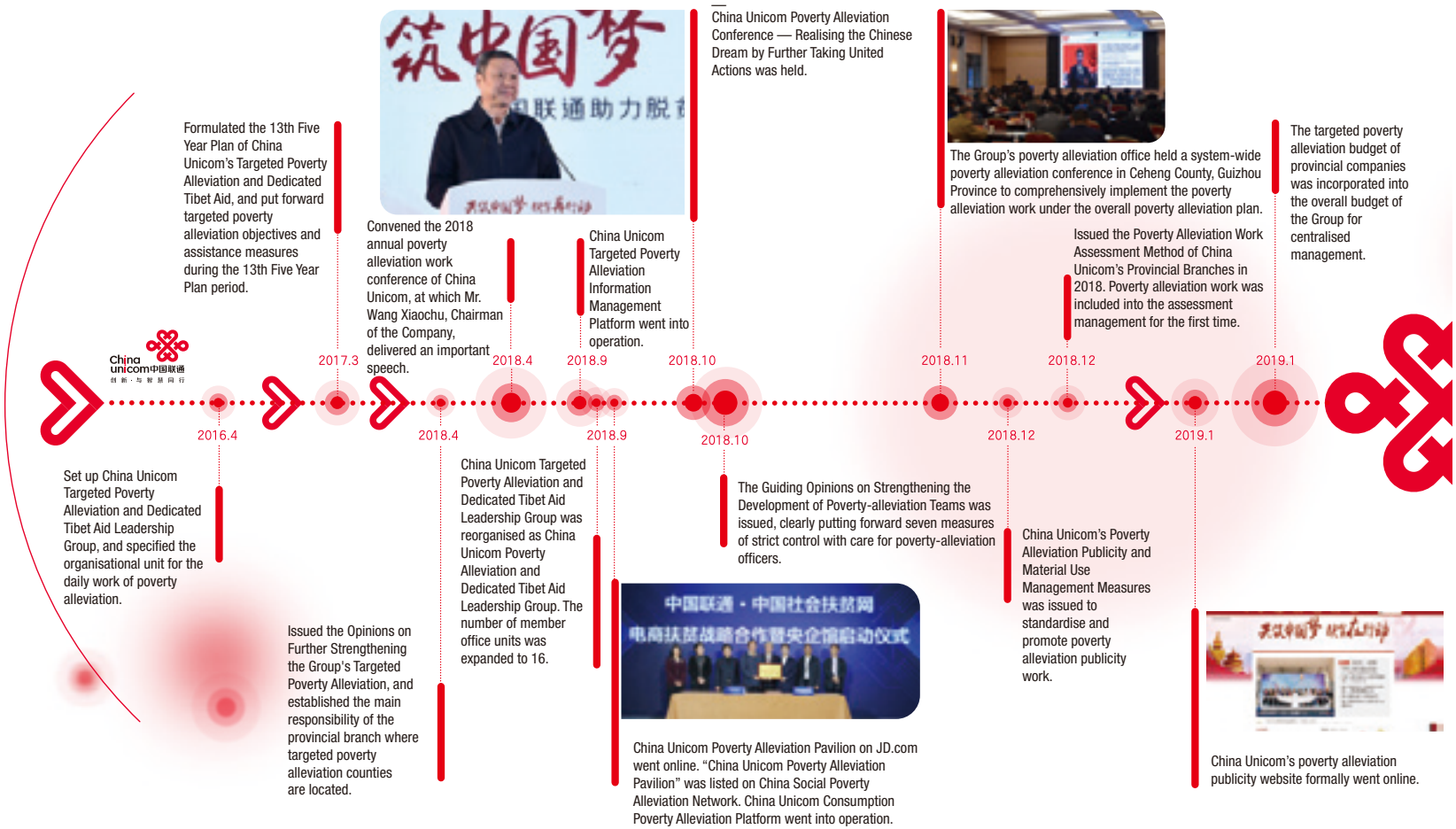
# POVERTY ALLEVIATION

## Winning the battle of targeted poverty alleviation and promoting high-quality life

The year of 2020 was the year of deciding victory in the fight against poverty. The mission of winning the fight against poverty on schedule and building a moderately prosperous society in all aspects has been the aspiration of the Chinese nation for thousands of years and an achievement benefiting hundreds of millions of people. China Unicom kept its mission firmly in mind and took its responsibility in a down-to-earth way with full strength to concentrate efforts on winning the battle of poverty alleviation under a paradigm of “unified leadership, professional implementation, integration of departments and regions and overall coordination”. With new changes taking place in more and more villages, China Unicom has embarked on a new journey by consolidating the achievements of poverty alleviation to help rural areas navigate towards high-quality development and common prosperity.





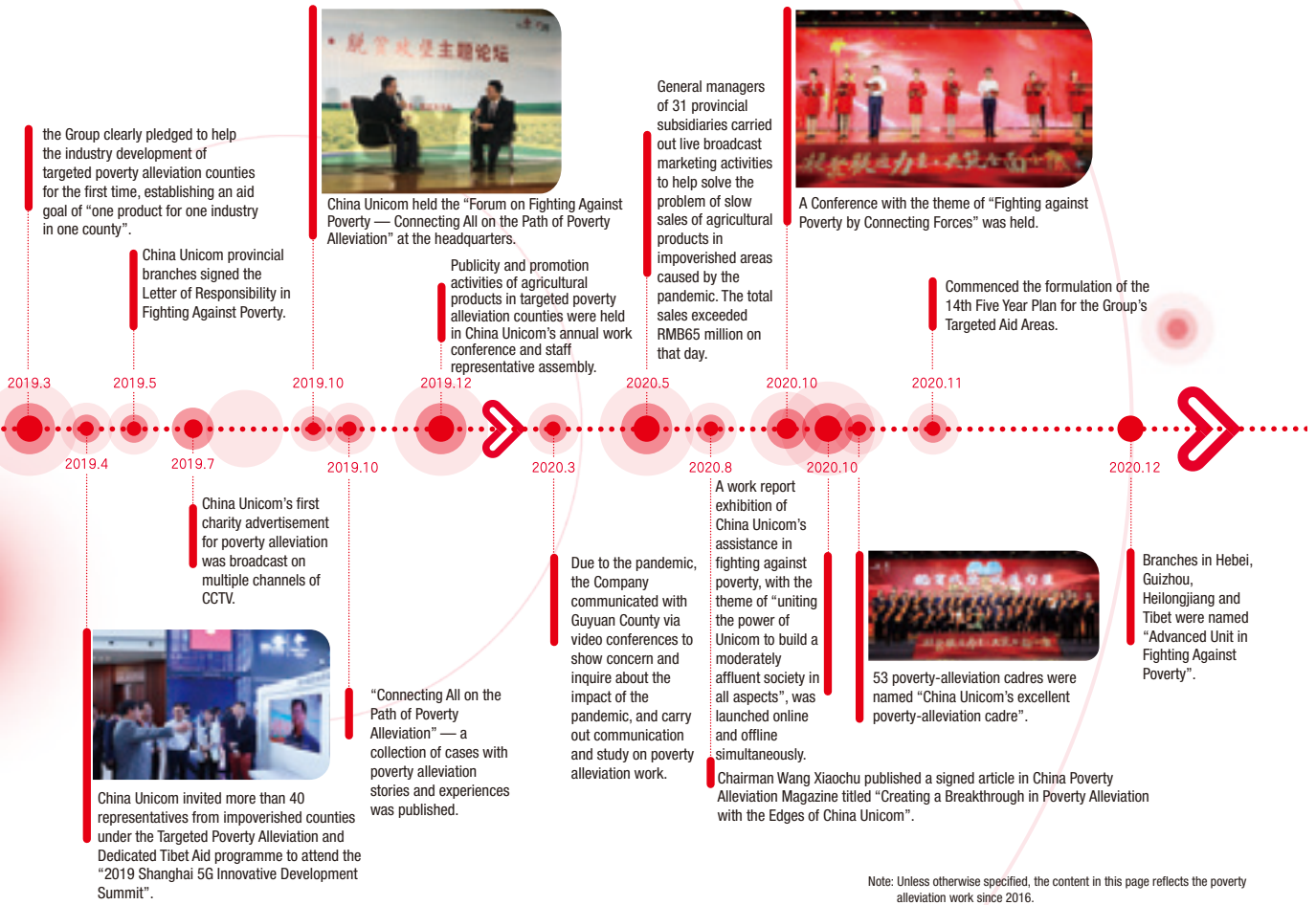


## CONTINUOUSLY DRIVING POVERTY ALLEVIATION

China Unicom focused on acute livelihood problems in impoverished areas, and leveraged the endowed resources of poverty alleviation sites to promote industry development through poverty-alleviation consumption. We determined aid projects based on market demand, promoted poverty-alleviation employment through aid projects, expanded social influence through brand building, and helped create high-quality poverty-alleviation products, forming a sustainable poverty-alleviation model. We developed a “one product for one industry in one county” programme to help poor areas get rid of poverty.

- In the past five years, the Company provided poverty aid to a total of 1,959 villages in 1,255 counties, implemented more than 3,000 poverty-alleviation projects, dispatched more than 3,100 poverty-alleviation officers and lifted more than 316,000 people out of poverty.
- Carried out poverty-alleviation consumption campaigns, helped build brands and create high-quality products. Carried out live broadcast marketing to overcome the adverse impact of the pandemic. Helped poor areas sell more than RMB65 million of poverty-alleviation products during the SOE Open Day on 17 May.
- Aiming at “Two Worry-Free, Three Safeguards” in Geji county, allocated RMB52.71 million in Tibet aid funding to implement a number of projects such as the relocation of Fukang community, the upgrade of residential water supply and heating and the upgrade of education informatisation, etc. These projects safeguarded housing security for the poor, drinking water hygiene and compulsory education for poor students, and were widely praised by the government of Geji county and local people.
- Focusing on fighting poverty and building the culture of willing commitment of large state-owned enterprises, the Company comprehensively leveraged technologies like 5G, online 3D panorama, the Internet of things, etc. to carry out a series of publicity activities under the theme of “fight poverty by connecting forces”. The activities comprised rich content and diverse formats, promoted the spirit of poverty alleviation and created a cultural atmosphere for poverty alleviation.

# 扶贫 迹 忆



- China Unicom Poverty Alleviation Office was named "National Advance Group on Poverty Alleviation".
- The consumption poverty-alleviation case won the "National Consumption Poverty-alleviation Excellent Typical Case Award in 2020" awarded by the National Development and Reform Commission and was selected as the "Top 50 Special Cases of Targeted Poverty Alleviation by Chinese Enterprises".
- The Company's big poverty alleviation system created a new model of poverty alleviation by central state-owned enterprises and was selected as "Top 50 Comprehensive Cases of Targeted Poverty Alleviation by Chinese Enterprises".
- The industry poverty-alleviation case in Guyuan County of Hebei Province won the "Third Chinese Excellent Poverty-alleviation Case Award" jointly awarded by the Poverty Alleviation Office of the State Council and the People's Daily.

China Unicom Tibet branch purchased agricultural machinery and equipment for Deqingzi village to help it carry out fully mechanised agricultural production.



The case of China Unicom Guizhou branch helping lift Ceheng County out of poverty through the banana industry chain was selected as the Excellent Case of East-West Cooperation and Targeted Poverty Alleviation by the Poverty Alleviation Office of the State Council.



China Unicom Shanxi Yangquan branch developed forsythia planting industry in Yangshuzhuang Village.



China Unicom Qinghai branch's targeted aid to the wolfberry bud tea industry in Yangpo Village helped the village be rated as an exemplary village of "one product in one village" by the Ministry of Agriculture and Rural Affairs.



China Unicom Xiong'an Industrial Internet Co., Ltd. made great efforts to promote education informatisation in Kangbao County, encompassing smart campus, education cloud platform, dedicated 5G education network to solve the problems of lack of education management tools and unbalanced distribution of education resources in the county.

## BUILDING INFORMATION HIGHWAY

China Unicom adhered to the sincere belief of "people's telecommunications for the people" to strengthen its initial aspirations. It focused on the impoverished areas and accelerated the construction of broadband network, 4G, 5G and other infrastructures, striving to narrow the digital divide for the impoverished areas. It continuously optimised the existing targeted poverty-alleviation packages and various preferential policies to ensure that the villagers can access affordable and quality communication services.

- Accelerated infrastructure construction and network coverage in impoverished areas and promoted the development of broadband and 4G network infrastructure in aid areas.
- Achieved full coverage of poverty-alleviation packages in impoverished areas. Added new or optimised existing packages according to local circumstances to ensure that the targeted poverty-alleviation packages met the needs of customers, letting them enjoy affordable services. Ensured that mobile packages had 3/4G Internet access and broadband packages had a downlink speed of at least 100Mbps, letting customers enjoy quality services. Approximately 2.567 million subscribers in poverty were benefitted with total savings in communication costs of RMB377 million.
- Launched digital village products. By comprehensively creating "digital township" ecosystem with "communication + platform + hardware + service", China Unicom helped advance Rural Revitalisation Strategy, helped the government solve governance problems and provided villagers with convenient living services. A total of 10,000 administrative villages were covered.

Total savings in communication expenses in the past five years amounted to

**RMB 561 MILLION**

Over **4.3 MILLION** impoverished customers were benefitted

China Unicom Bayannaer branch in Inner Mongolia is committed to addressing the communication needs of farmers and herdsmen in impoverished and underdeveloped areas. It provided convenient services for registered households in poverty and the disabled and offered targeted poverty alleviation products such as Caring Cards. 213 registered households in poverty were benefitted with total tariff concessions of over RMB10,000.

## 🏠 STEPPING INTO THE HIGHLAND OF SMART AGRICULTURE

China Unicom comprehensively used 5G, cloud computing, Big Data, Internet of Things, artificial intelligence and other information technologies to empower industries with local characteristic and create comprehensive solutions for smart agriculture, thereby enhancing governance and informatisation in villages, and promoting comprehensive agricultural upgrade, rural advancement and farmers' development.

- Built a digital village platform which served 200 townships and thousands of villages in China. Developed benchmark projects such as Wenshu Town in Jiayuguan City, Gansu Province, Maochang Town in Bijie City, Guizhou Province, and Dapo Township in Rong'an, Liuzhou City to promote digital governance and solve practical problems like frequent travel for farmers.
- Supported and participated in farmers' mobile phone application skills training activities organised by the Ministry of Agriculture and Rural Affairs for consecutive years. The training activities in 2020 covered 309 districts and counties in 10 provinces with a total of more than 300,000 participants. It helped narrow the information gap between travel and rural areas.
- Implemented over 80 national, provincial, municipal and county-level smart agriculture and modern industrial park projects in Yangxi of Guangdong Province, Zunyi of Guizhou Province, Shouguang of Shandong Province and Dali of Shaanxi Province, and provided 700,000 greenhouses with environmental monitoring to help upgrade the agricultural industry.



Smart agriculture system

China Unicom Fujian Ningde branch kept innovating in digital agriculture. In cooperation with Fu'an Agricultural Reclamation Group, it established a platform of "5G smart tea garden" to achieve automated tea production and management. It was successfully showcased in the third "Digital China" Summit to boost rural revitalisation.



Comprehensive management platform of smart tea garden



Smart tea garden

## DELIVERING THE WARMTH OF CHARITABLE POVERTY ALLEVIATION

China Unicom cooperated with its peers and joined forces to actively explore effective ways of charitable poverty alleviation and build an ecosystem of charitable poverty alleviation among enterprises, users and the public. It carried out charity activities such as financial aid for students through credit points, education for children in snow areas, charitable poverty alleviation campaigns and heartwarming voluntary services, so that all parties' charitable deeds could effectively help the fight against poverty.

- The financial aid programme through credit points raised RMB4.387 million for students in poverty from 442,000 participating employees and customers.
- Carried out “scarfs for winter” campaigns to deliver warmth to children in impoverished areas.

### OVER 30,000

volunteers participated in the charitable poverty alleviation activities in the past five years.

China Unicom Shanghai branch and the Paper News jointly launched a voluntary education campaign for children in snow areas. In 2020, the campaign delivered via “cloud classes”, a variety of “face-to-face” courses to the children of Bilibili primary school in Weishan County, Dali City, Yunnan Province. Voluntary education for children in snow areas benefited a total of nearly 8,000 students with more than RMB1.5 million worth of donated materials.



Beating China red and communication blue — China Unicom Youth League Committee and Youth Foundation donated scarfs to students in Geji County, Tibet.



# OVERSEAS

## Creating a new dynamics of international interconnection and serving the domestic and international dual-cycle

In the face of increasing complexity, challenge and uncertainty of the international situation, China Unicom accurately identified changes, scientifically responded to changes, took the initiative to seek changes, and was able to adapt in grasping the nettle and opening up a new situation in the changing tides. Based on the overall plan domestically and overseas, China Unicom strived to promote the differentiation advantages of global cloud-network integration and cloudification servicing capabilities, relying on “dual-cycle of digital economy” to help building a new pattern of high-quality international business development while fulfilling the responsibilities as a global corporate.



## IMPROVING CROSS-BORDER SERVICE QUALITY

China Unicom firmly captured the new opportunities of global changes, constantly improved its international business operating quality, providing a series of end-to-end global integrated information services for global enterprise customers both domestically and internationally, as well as global voice and data services for individual customers overseas. In 2020, overall service quality continued to improve, providing customers with more innovative and more best-value products and services, which helped customers to adapt to changes in the international situation and eliminating the adverse impact of the pandemic.

- In order to meet the needs of international customers, China Unicom launched domestic- and overseas-integrated cloud networking services, implemented the interconnection among 28 resource pools of 8 overseas cloud enterprises, and achieved the comprehensive leading position of product functionality to provide users with one point/multi-point cloud, multi-cloud connection, hybrid networking, cross-border interconnection services, which delivered advantages such as all scenario, multi-cloud, multi-access, flexibility, manageability, self-service, and etc.

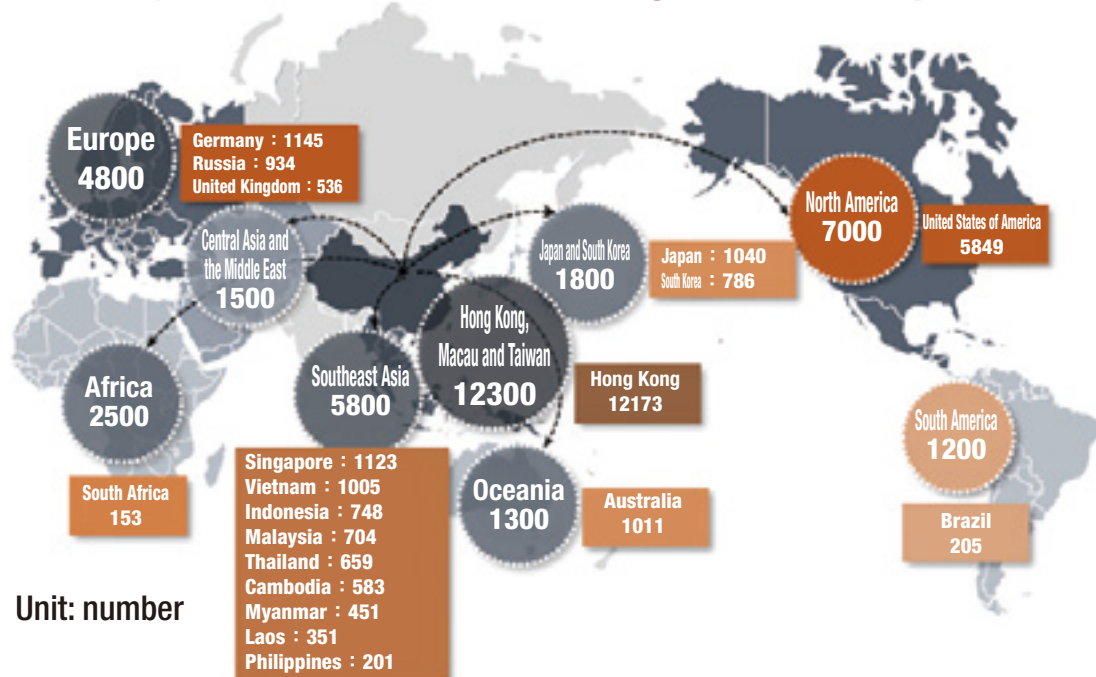
- During the pandemic, China Unicom strengthened customer care, implemented data allowance increase without price increase for 102 popular international roaming locations, and launched low-cost minimal data products for long-term resident users in 23 popular overseas locations, which greatly improved user perception.

- In order to meet with the high-demanding requirement of ultra-low latency of the customers in financial industry, 9 low latency financial dedicated lines in 6 directions were built.

- China Unicom continued deepening speed upgrade and tariff reduction, realising 197 countries and regions of international roaming and visiting products, opening the access to a number of 5G international roaming and visiting countries or regions, and launching international roaming data package products for multiple day use in multiple countries. In 2020, the international roaming and visiting data tariff declined by 4.5% year on year.

- The promotional video of “connecting you and me in the big world” was produced to demonstrate the international image of customer-oriented, open and innovative, and pursuit of excellence.

### Country distribution of 41,000 “Going Abroad” enterprises



Committed to becoming the priority choice for customers “Going Abroad” and “Coming in”

## SERVING THE “BELT AND ROAD” INITIATIVE

China Unicom thoroughly implemented the “Belt and Road” initiative (the “BRI”). Based on the layout of the domestic and overseas markets, China Unicom promoted the dynamic allocation of resources within the global scope to create the setting of “one market, one network, one-stop service, one system, one big ecological cooperation” for domestic and overseas. China Unicom provided high-quality communication channels with low latency for “Going Aboard” enterprises and provided convenience for customers visiting the BRI countries or regions, facilitating the interconnection of the BRI.

- Strengthening market cooperation, focusing on “Going Abroad” key industries such as industrial manufacturing, finance, government media, transportation and logistics, energy, commercial retail, etc., providing scenario solutions such as digital finance, cross-border WiFi operation, thermal imaging and Smart stores, and establishing a domestic and international operation system with highly efficient linkage.
- Continuously building information optical channels, further expanding global interconnectivity by opening 15 express lines of the BRI to provide high-quality communication channels with low latency for “Going Aboard” enterprises. Focusing on the development of central Europe and South Asia Pacific, China Unicom completed the construction of four PoPs (overseas business access points), with over 130 overseas PoPs in 80 countries and regions around the world; the Company completed the three-tier expansion of 1,000 cabinets in its Hong Kong Global Center, upgraded the mobile core network in Hong Kong, and supported the 5G NSA activation; various kinds of international Internet extranet bandwidth totaled 3.9T.
- For the convenience of the customers to visit the BRI countries, international roaming products covered 128 countries of the BRI, with 5G roaming services activated in 7 countries of the BRI.
- Accelerating the digital transformation of international business services, building a Smart living service portal with one-point access, all-regions service and global guarantee, promoting the connection and Smart operation within border and out of boarder customer service, so as to transform and upgrade into one-stop global service.
- Building domestic and international unified digital foundation to provide support for digital production and operation of international business.
- Strengthening the core of circle of trust of the BRI while carrying out dedicated cooperation around network resources, mobile roaming and innovative products, and upgrading the cooperation format to accelerate the integration process of domestic and foreign ecological cooperation.

## BEING A GLOBAL CORPORATE CITIZEN

China Unicom continuously improved the level of compliance management by insisting in integrity operation, implementing localised operation and actively caring for employees, society, community to build a mutually beneficial win-win development community.

### Carrying out Operation and Compliance with Integrity

China Unicom Global Limited operates China Unicom’s overall international business in accordance with the law, improving the corporate governance structure and strictly complying with the local market rules and business regulations. In 2020, according to the Company’s management and business characteristics, combined with optimum international practice experience, China Unicom further improved the compliance management system, paid close attention to major risk, actively responded to the implementation of various countermeasures, and ensured the orderly development of overseas business activities in the legal and compliance manner.

• 16 overseas operation companies, on the basis of the full coverage of “one country, one policy” risk prevention, timely made adjustment and changes to the compliance manual and carried out training and risk assessment according to the local relevant laws and regulations in the location of the operation companies.

• Undersea cable construction actively strived for the support of the local government, met with the requirements of the local ecological environment, and supplemented local residents with prudence compensation.

• China Unicom continuously broadened its international horizon, deeply cultivated its “U” image, won a number of international awards for honest management, and persistently improved its overseas brand value.

• In 2020, there was no case on dishonesty, violation of laws and regulations, disorderly competition, infringement of aboriginal rights and commercial bribery.



## Implementing Local Responsible Operation

Under the principle of “one system”, along with the goal of building an agile and Smart supply chain, “globalization” has integrated the global supply chain and conducted local cooperative management by regions and categories.

- 26 institutions were set up across the globe covering services in 23 countries and regions to assist in the development of the telecommunication industry, as well as facilitating local employment and economic development.
- The Company actively employed local staff. As at the end of 2020, total number of CUG employees amounted to 880, including 750 overseas employees and 282 overseas female employees.
- In strict compliance with the legal requirements of the local sites, China Unicom has safeguarded the legitimate rights and interests of local employees, respected the local customs by formulating a salary and welfare system in line with local customs, formulated differentially monetary subsidy projects, actively organised sports activities and welfare publicity and implementation, and took practical actions to fulfill the social responsibility of caring for local employees.
- China Unicom actively participated in various activities organised by local associations and maintaining good communication with local communities and Chinese enterprises.
- In order to ensure energy conservation, environmental protection, health and safety of the equipment provided by the supplier, China Unicom formulated an audit system of procurement scheme, and implemented the scenic procurement and standardised management.



China Unicom Global Limited was awarded the qualification certification of “Caring Company” issued by The Hong Kong Council of Social Service

## FULFILLING SOCIAL RESPONSIBILITY OVERSEAS

China Unicom actively participated in overseas charity activities to give care for the society, fighting the pandemic and demonstrating its responsible corporate image.

China Unicom Global Limited participated in a series of “Women in Leadership” exchange activities organised by the Thai Chamber of Commerce in Canada and communicated with female representatives who founded or managed the enterprises, promoting the establishment of the women’s economic circle (sheconnects.org).



China Unicom Global Limited participated in the grassroots charity activity of “tablet computers for everyone to learn online” jointly organised by the Hong Kong Federation of Women and Regional Service Office of Federation of Trade Unions to provide the Company’s CUniQ charity version of data card and tablet computer as a support to the charity activities, actively contributing to serve the society.





## Digitally Strengthened the Foundation of Cyber Superpower to Enhance Value

Solidifying the foundation of a digital economy  
Implementing universal service projects  
Cementing the defense of network security

## DIGITALLY STRENGTHENED THE FOUNDATION OF CYBER SUPERPOWER TO ENHANCE VALUE

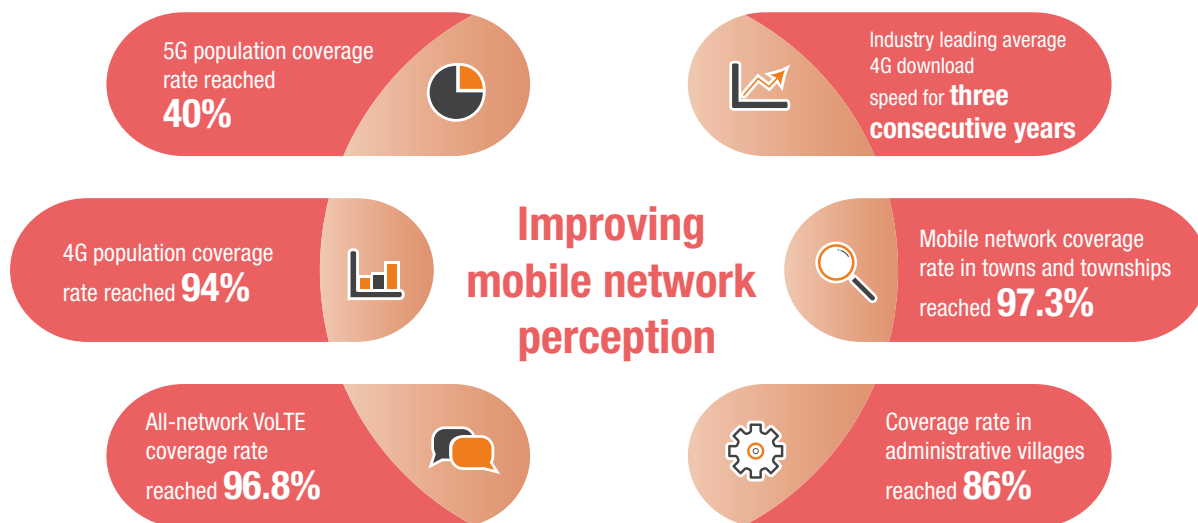
Building new digital infrastructure and strengthening security. Adhering to the people-oriented value and fundamental logic, China Unicom accelerated the construction of high-speed, mobile, safe, and ubiquitous new infrastructure, improved the network quality and operational efficiency using digital operations, speeded up network construction in remote areas, and persisted to maintain network information security, while continuously consolidated the foundation of the digital economy and striving to build the nation into a cyber superpower and digital China.

### Measures adopted in 2020

- The cumulative scale of 5G base stations reached 380,000, with 5G population coverage rate reached 40%, the 4G population coverage rate reached 94%, and the all-network VoLTE coverage rate reached 96.8%.
- The total number of broadband ports reached 225 million, and the average access speed reached 185Mbps.
- The construction of integrated cloud and network capabilities was accelerated, building intelligent network capabilities facing the future.
- Unified digital base and Smart middle platform built to create digital operation capabilities.
- The fifth batch of universal services was completed, comprising of 2,857 administrative villages, 3,073 4G base stations and 176 border base stations were built, and such projects were completed with an investment of RMB624 million. In 2020, RMB330 million was invested in network poverty alleviation.
- A total of 140 million fraudulent and harassing calls were intercepted, and 1.28 billion spam messages were blocked.

### Actions to be taken in 2021

- To push forward network evolution and applications, vigorously promoting the commercialization of slicing, uRLLC, dedicated networks, and MEC, deploying VoNR on a trial basis, and accelerating the deployment of 10G PON.
- To promote precise planning and improve network quality through the integration of planning, construction, maintenance, optimization, and business, further enhancing user perception.
- To accelerate the integration of cloud and network and promoting the construction of intelligent operation support system to improve the efficiency of network industry collaboration.
- To continue to build an agile digital base and to accelerate the construction of core capabilities in middle platforms, to creating a brain for Smart operations.
- To actively participate in delivering universal telecommunications services and speeding up network construction in remote areas.
- To build a network information security system focusing on security operations, security capabilities, security technology innovation, security talents and security systems, maintaining national network information security.



## SOLIDIFYING THE FOUNDATION OF A DIGITAL ECONOMY

China Unicom firmly grasped the trend of information technology changes, accelerated the construction of information infrastructure, consolidated the network foundation of the digital society, and opened up the “main artery” of information for the development of the digital society.

## Accelerating New 5G Infrastructure

China Unicom vigorously promoted the construction of 5G infrastructure, and co-built with China Telecom the world's first and largest scale co-sharing 5G network. The 5G network reached a cumulative scale of 380,000 base stations, achieved 5G outdoor coverage in all prefecture-level cities, key counties and developed towns, and realizing the world's first large-scale commercialization of SA network.

In the process of 5G construction, numbers of models and industry benchmarks have emerged. In Wuhan, the co-sharing 5G base station in the Huoshenshan Hospital was opened up in 36 hours, making a record construction speed. The 5G base stations built at the observation deck of Mount Everest (at an altitude of 5,000 meters above sea level) and Camp No. 1 (at an altitude of 5,200 meters above sea level) broke new record in heights in construction. In Jiangsu, the 4G/5G coverage of the Shanghai–Suzhou–Nantong Yangtze River Bridge, the largest cable-stayed dual road-rail bridge in the world, was jointly completed.



China Unicom rolled out 5G network connection at Mount Everest and conducted a 24-hour online live broadcast

China Unicom accelerated the construction of cloud data center, focusing on the five key areas of Beijing–Tianjin–Hebei, Yangtze River Delta, Pearl River Delta, Sichuan–Shaanxi–Chongqing and Shandong–Henan to create a “5+2+31+X” system. The Company formed and established China Unicom’s “Smart Cloud” data center brand, and promoted the IDC value management through customer segmentation, precise planning and marketing with brand new image and differentiated product services.

The Company constructed and deployed directly affiliated data centers in Langfang, Guian, Hohhot, Harbin, Deqing and other cities, and built 10 data room buildings with a total construction area of 326,000 square meters, delivered 23,336 racks, and opened up a bandwidth of 3.9T, which aimed to provide users in various industries with rental of a series of basic IDC products such as racks, machine space, broadband, IP addresses and additional power, as well as a full set of IDC value-added product services such as security services, application services, and key security services.

## Promoting the Integration of Cloud and Network

China Unicom closely followed the trend of future network evolution, strengthened cloud-network integration, accelerated the construction of cloud-network integration capabilities, continued to explore cloudification and intelligent network structure and evolution strategies, to build a future-oriented intelligent network.

### Speeding up cloud-network layout



China Unicom realized intensive construction in cloud resource pool, completed the delivery of more than 10,000 server resources, and promoted the construction and application of a unified monitoring platform for the cloud resource pool.

- The communication Cloud completed the DC layout of the “6+2” greater regions, meeting the cloud platform deployment requirements of innovative services such as 5GC control plane network elements, VoLTE ringtones, and 5G messaging, as well as the requirements of MEC layout services.
- The IT Cloud followed the “4+2” data center layout, meeting the needs of various IT system construction within the enterprise.

### Promoting network development to SDN



The IP backbone, smart metropolitan area network and OTN (optical transport network) basically realized 100% SDN (software-defined network), which supported the automatic opening up of cloud unified networking, 5G base station access, and premium network for government and enterprises customers.

### Building low-latency networks



The Company continuously optimized the latency of China169 backbone network to provide better user perception. During the year, the latency index was optimized for more than 1.5ms, and the average latency of the overall network was below 31ms, maintaining the leading position in the industry.

China Unicom and Huawei jointly released the “White Paper on All-optical Bases in the Cloud Era” (《雲時代的全光底座白皮書》), proposing for the first time an all-optical base with comprehensive carrying capacity for digital transformation, which fully supported the industry’s digital transformation and the development needs of new cloud services, providing customers with customization and differentiation telecom services.



Press conference of the “White Paper on All-optical Bases in the Cloud Era”

## Optimizing Network Experience

China Unicom has been committed to building a premium network with leading perceptions by continuously improving network coverage, enhancing network quality, precise construction and increasing network resource efficiency, so as to provide high-quality network service support for a variety of business applications.

### Improving mobile network awareness

In 2020, the 5G population coverage reached 40%, the 4G population coverage rate reached 94%, and the all-network VoLTE coverage reached 96.8%. The average 4G download speed maintained a leading position in the industry for three consecutive years. The mobile network coverage reached 97.3% in towns and townships, and 86% in administrative villages.

Based on the technical characteristics of 5G and supplemented by new technologies such as “AI and big data”, Qingdao Unicom provided customized, agile and convenient enterprise-specific mobile networks to ensure a good network experience.

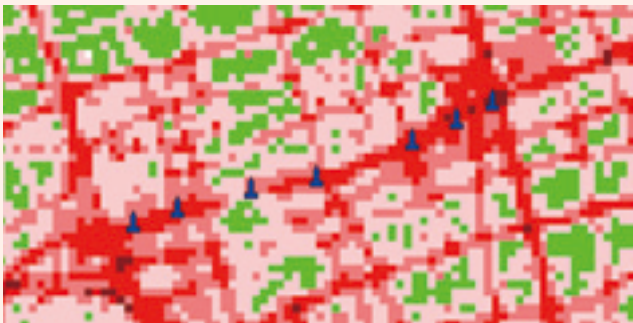
### Expanding broadband network coverage

In 2020, the investment in broadband access amounted to RMB2.05 billion, and 8.47 million broadband ports were built. The total number of ports reached 225 million, covering 380 million broadband residential units and 69,000 commercial buildings. The average network access speed reached 185Mbps, representing an increase of 24% year-on-year.

### Carrying out precise network construction

Based on O+B big data analysis, China Unicom made precise and efficient investment. In key cities and key areas, through multi-dimensional data overlay analysis, the Company accurately identified the areas with problems, and effectively improved network quality and user perception. In 2020, a total of 2,229 complaint-driven construction tasks have kicked off, and a total of 2,137 construction tasks were completed, with a completion rate of 96%. In other cities and other areas, focusing on 5G terminals and business clusters, the Company carried out precise construction to continuously improve the internet access rate of 5G users. By the end of 2020, the internet access rate of 5G users exceeded 50%.

In 2020, Shanghai Unicom carried out the comprehensive transformation of the Nanjing East Road Smart City Information Project. The new 5G transformation project adopted MDT traffic big data and accurately pinpointed. The wireless communication signal coverage along Nanjing East Road was greatly improved, and the 5G coverage reached above 95%.



5G points based on MDT planning



Illustration of the 5G Rubik's Cube Tower on Nanjing East Road

## Carrying out Digital Operations

In 2020, China Unicom further advanced its digital transformation strategy, built a unified digital base and Smart middle platform, formed digital operation capabilities, significantly improved the Company’s operational efficiency, and served customers faster and more conveniently.

### Building a unified digital base

Based on the advantages of proprietary IT research and development, China Unicom completed the integration of B/M/D domains, and initially formed an agile digital base of “shared platforms, shared capabilities, shared technology stacks and shared R&D systems” to achieve one-stop resource acceptance, unified monitoring and unified operations.

- Providing application solutions: The cloud platform provided 183 components in 8 categories, internally serving the headquarters and more than 40 subsidiaries and branch companies, and supporting more than 380 applications.
- Actively carrying out external empowerment: The Company exported PaaS products and privatization deployment plans to “WO Cloud”, providing supports to government and enterprise customers such as Zhongshan Perfect, National University of Defense Technology, HIT Zhengyuan, Shandong Hi-speed and others.

### Building Smart middle platform capabilities

China Unicom built five smart middle platforms to create the Company’s new digital IT core engines, to agilely empower for business, management and network, and accelerated product innovation, optimized customer experience, improve operational efficiency and prosperous ecological cooperation.

- Public middle platform: to empower the front end, connect core processes and data, and improve sharing and reuse capabilities. The middle platform made 970 million recommendations for the all customer value operation strategy and accumulated 9.41 million orders.
- Government-enterprise middle platform: For customers, it was designed to complete the launch of online portals of government and enterprises; for the frontline, it optimized innovation headlines and government-enterprise assistants, collecting 267,000 business opportunities; for the market, it achieved the BO connection of dual-line business in 31 provinces; for ecological construction, it provided partners with one-stop services, bringing in together 1,152 partners.
- Network middle platform: to carry out the decoupling and construction of 10 major competence centers; the resource scheduling system provided more than 300 API services, 51 AI models and 178 network data services to achieving 5-day dual-line business access.
- Management middle platform: the user center and process center completed 1,170 access application certifications, 2,383 process template accesses, 35 open capabilities; to break through the breakpoints of contracts and business opportunities, and empowering all go-online of government and enterprises.
- Data middle platform: to optimize and integrate the basic capabilities of data centers and strengthen Big data empowerment. The data service to API had been in service for more than 29 billion times, empowering 78 scenarios and terminal sales in digital business outlets, and weekly sales volume increased by 259%.

Hainan Unicom expanded and strengthened its Big data platform, enhanced its real-time processing capabilities, supported real-time data viewing and real-time scenario-based marketing, optimized Smart decision-making systems, business decision-making APPs and interactive platforms, and built digital Internet map capabilities. It also realized the data collection and distribution of various resource information in the map customized marketing area through the electronic filtering function of IDS Smart decision-making system.

## IMPLEMENTING UNIVERSAL SERVICE PROJECTS

China Unicom has always adhered to the people-oriented development philosophy, taking the improvement of people’s well-being as the starting point and goal of digital development, while serving nation’s major strategies and the overall layout of local economic and social development, which speeding up the construction of information infrastructure in rural and remote areas, and realizing information to benefit the people.

China Unicom completed the fifth batch of universal services, involving 2,857 administrative villages, completed the build-out of 3,073 4G base stations and 176 border base stations, with an investment of RMB624 million. The Company further promoted the bidding and implementation of the sixth batch of Unicom Telecommunications Universal Service Pilot Projects, involving approximately 1,122 administrative villages. After the first to sixth batches of universal service rural pilot projects and the 4G construction of China Unicom’s special poverty alleviation network projects, our 4G networks have covered remote rural areas in 139 cities of 24 provinces, and the construction and coverage involving 8,275 administrative villages. The planned construction scale of 4G base stations in administrative villages is 14,669, and broadband coverage achieved in 306,000 administrative villages, vigorously promoting and revitalizing the construction of the rural network.

In line with the intention of benefiting the people’s livelihood and doing practical things for the people, Xinjiang Ili Unicom launched the “Rural Broadband Universal Service” project to undertake the task of broadband construction in rural areas and remote villages in the Ili Prefecture. Since 2017, construction has been completed in 70 administrative villages and 3,136 optical network ports have been built, enabling more than 3,000 users to enjoy broadband networks with a bandwidth of 50M or above, realizing the “optical network Ili”.



Hunan Unicom further promoted telecommunication universal services and continuously improved network coverage in rural and remote areas. A total of 626 rural sites were built, and wireless network coverage was added in 592 administrative villages. This has enabled rural users in six cities of Zhuzhou, Xiangtan, Zhangjiajie, Yueyang, Hengyang and Yiyang to enjoy stable and high-quality broadband network services, building a bridge to communicate with the outside world.



## CEMENTING THE DEFENSE OF NETWORK SECURITY

Without network security, there will be no national security, social stability, and the safety of the interests of the people. China Unicom takes the maintenance of national network security as its mission, accelerates the construction of an information infrastructure security system, improves network security governance capabilities, perceives the network security situation in all directions, prevents network ideological risks, and strengthens the “firewall” for economic and social development using digital technology, and to escort high-quality development and people’s happy life, all as assistance to building a higher level of security China.

### Striving to Ensure Network Security

China Unicom regards the maintenance of network information security as an important mission of conscientiousness and responsibility. The Company adheres to top-level design to build a “five-complete” network information security system and also optimizes network security products, integrates security development throughout all fields and the entire process of the Company’s development, striving to improve security protection capabilities.

#### Enhancing active defense capabilities

- The Company pushed forward the improvement of public Internet network security threat management capabilities, and the monitoring and handling capabilities at mobile Internet level reached 39Tbps, achieving full coverage of 3/4/5G mobile core network monitoring. It also has the capability of two-way traffic monitoring, handling with 20T link bandwidth at the broadband Internet level.
- A comprehensive system for monitoring and handling capabilities for malicious network resources, malicious programs, Trojan horses viruses and botnets is formed, effectively reduced the attacks and influence of botnets, Trojan horse viruses, and malicious programs.

#### Building safe product capabilities

- The development, construction and deployment of DDoS protection capabilities were actively promoted, with the protection capability of the all network reaching over 5T, effectively improving the strengths of the large network and internal systems.
- The Company carried out the construction of the expansion of the basic network 4A platforms, realized the unified management of 691 network resource domains and 8,521 operation and maintenance accounts nationwide, effectively supporting basic network security management.
- The development, construction and deployment of the unified security capability management platforms such as DDoS protection, domain name protection, website security monitoring, website firewall (cloud WAF), vulnerability scanning, traffic intelligent filtering, and five security resource pools were completed.

China Unicom held the 2020 Network Security Skills Competition and the National Industrial Internet Security Technology Skills Contest Trial. The Company leveraged competitions to promote training and by training to promote learning. Through the competitions, China Unicom’s network security protection capabilities were further enhanced, and the skill level of network security professional and technical personnel was greatly improved.

### Combating Communication Fraud

China Unicom resolutely implemented the state’s efforts to prevent and combated communication information fraud, to maintain normal communication order, protect personal data privacy, and safeguard the legitimate rights and interests of users.

- Actively implemented the requirements of the Cyberspace Administration of China and the Ministry of Industry and Information Technology on the collection and use of users’ personal information in compliance with laws and regulations, and completed the supplementary revisions to the “China Unicom User Privacy Policy” and “China Unicom Customer Access Service Agreement”, to fully protect user privacy.
- Improved the data security management level, carried out special investigations on personal information protection in joint pandemic prevention and control, completed special rectification of APP infringement of users’ rights and interests, conducted offline processing of 2 APPs, and ordered rectification of 9 APPs within the limited period.
- Carried out in-depth control of fraudulent calls, harassment calls and spam messages, and conducted intensive deployment of fraud and harassment call monitoring and handling systems. According to the user’s willingness to answer, the Company provided customers with spam call prevention services, which was widely recognized by customers. In 2020, a total of 140 million fraud and harassing calls as well as 1.28 billion spam messages were intercepted, 25,000 fraud calls, 157,000 harassment calls and 56,000 spam messages reported were handled accumulatively.
- Increased promotion guidance on customer security awareness, made full use of traditional media, new media, SMS and other promotional channels to promptly market and remind users of various information security, and timely provided customers with overseas call reminder services, with an average of more than 42.37 million reminders per month.

China Unicom’s Big data anti-fraud capabilities have made breakthrough progress. The “Big data anti-fraud system” was awarded the “Network Security Technology Application Pilot and Demonstration Project” by the Ministry of Industry and Information Technology. The Company has established an anti-fraud joint laboratory with CAICT to enhance its influence in the industry.

Sichuan Unicom built its intelligent anti-fraud monitoring and handling platform and tools, strengthened the province’s ability to analyze and early-warn suspected fraudulent calls based on Big data, improved the accuracy of fraudulent phone recognition, and achieved outstanding results in precise fraud prevention. In 2020, more than 5,000 fraudulent and suspected phone numbers were shut down every month, and more than 500 channels were punished and rectified. These measures effectively curbed the proliferation of fraudulent calling cards, and Sichuan Unicom maintained the lowest rate of suspected criminal phone numbers among operators in the province according to the Ministry of Public Security.

## Digitally Improved People's Living Quality to Seek Growth

Sharing the benefits of digital development  
Serving the Winter Olympics with craftsmanship spirit  
Overcoming adversity and moving forward smoothly  
In-depth promotion for community public welfare





## DIGITALLY IMPROVED PEOPLE'S LIVING QUALITY TO SEEK GROWTH

The development of information infrastructure and the iterative innovation of digital technology have given the people a sense of gains, happiness and security. Shouldering the mission of construction of a cyber superpower and relying on high-quality information and communication infrastructure, China Unicom has continuously enriched the connotations of communication products and services, vigorously improved network quality and user experience, and committed to enhancing the country's overall information technology development, providing customers with satisfactory and high-quality communication services, as well as allowing more consumers to share the bonus of technological progress and obtaining a better business perception experience.

### Measures adopted in 2020

- With the orientation of “Innovating and Sharing a Warm Smart Living”, the Company launched the brand revitalization project.
- The promotion of Smart Home products accelerated to advance, launching innovative products such as 5G messages, video ringback tones, and mobile phone butlers, to meet with people's demand for high-quality life.
- Speed upgrade and tariff reduction continued to progress, with the average tariffs of enterprise broadband and Internet dedicated lines further reduced by more than 15%.
- The Company tackled major challenges brought by extreme cold weather and the pandemic, and served the network construction for the Winter Olympics with craftsmanship spirit to ensure that the network will be timely ready.
- Effectively responded to the heaviest flood since 1998, the Company maintained stable overall network operation and with zero casualties.
- Voluntary service activities were actively carried out, conducting external charity donations, and heartily returning to the society.

### Actions to be taken in 2021

- To develop ecologically innovative products, enriching the product matrix, and building an ecosystem of Smart Homes and digital entertainment homes.
- To build the overall goal of “1+N+1” service system and create high-quality services.
- To accelerate the migration of existing users to use 5G packages through the promotion of a series of 5G services, bringing more benefits to users.
- To create a complete communication assurance system for the Winter Olympics, empowering the Smart Winter Olympics with 5G, and contributing to the implementation of the requirements of “simple, safe and exciting” games.
- To optimize the emergency response plan for communication assurance, carry out investigation of possible dangers in advance, and organize emergency drills.
- To actively participate in various charity activities and building a brand of volunteer services.

## SHARING THE BENEFITS OF DIGITAL DEVELOPMENT

Adhering to the concept of innovation and sharing, China Unicom continued to explore innovative models and methods to promote better products, channels, brands, tariffs and service levels, striving to push forward the sharing of digital economy development bonus in the entire society.

### Launching the Brand Revitalization Project

China Unicom attaches great importance to the leading role and value of the brand in the corporate development, and has launched the brand revitalization project in a comprehensive way. Making China Unicom's Chinese Ruyi Knot becoming a “happy knot”, “innovation knot” and “wisdom knot” shared by all people, it symbolizes connection with the world, thousands of households, thousands of industries, and embracing the Smart future with a new attitude.

#### Strengthening brand management standards

China Unicom shaped a unique brand strategy, to optimize brand positioning and to build a brand strategy model, while formulating the related system specifications for its brand building and management, further regulated and improved the brand management system through VI visual system, brand structure, brand platform, brand testing, and etc.

#### Shaping the brand connotations

China Unicom's new brand revitalization has been positioned at “Innovating and Sharing a Warm Smart Living”, shaping a world-class central state-owned enterprise brand that is personal, warm, down-to-earth and humanistic, creating high-value services for consumers and providing industry customers with new development momentum, as well as working with partners to build a mutually reinforcing ecosystem.



China Unicom's brand slogan



5Gn brand

### Preventing false publicity

The Company strictly abided by the Advertising Law and related laws and regulations, carefully sorted out the content of Internet service publicity, regulated the promotional language of package marketing activities, all to ensure that the publicity content is standardized and accurate. The Company continued to optimize the promotional language, truthfully informed users of the gifting conditions in the package, provided consumers with warnings of potential risks, and enhanced users' understanding of the products and services.

- For the package tariffs and promotional activities, no unreasonable conditions are set to restrict customers from choosing packages. For instance, if gifting conditions are involved, reliable methods are adopted to remind customers to understand the relevant agreements.
- In the announcements of integrated package tariffs, individual businesses and products shall have corresponding standalone businesses and products on sale and publicized at the same time.
- The language of the promotion packages and marketing activities shall be standardized and proper, and the content shall be accurate and consistent at the current time, with no one-sided exaggeration of selling points, nor confusion of tariff discounts or deliberate production of promotional content that attracts eyeballs and causes misunderstandings by customers.

In order to create a full-scenario, three-dimensional, high-speed Internet environment for customers, China Unicom pioneered the concept of three gigabits, cooperated with media such as CCTV, satellite TV and Internet content providers, and carried out activities on Weibo and Douyin with the topic of "Life Like This". The Company launched the first mini game sticker project among operators in the industry — "I am the King of Three Gigabits" Douyin Challenge and won the 9th Social Marketing Golden Bee Award.



Gigabit 5G, broadband and Wi-Fi added colors to the new ecology of 5G<sup>n</sup> digital life

In order to promote the popularization and development of table tennis during the pandemic, the "Ping Pong in WO" online challenge was held, and online series such as "Challenging the King" were launched. The cumulative number of participants reached 630,000, and the activity was viewed 210 million times. The Company was awarded the "Popular Online Sports and Cultural Activities" by the Beijing Olympic City Development Promotion Association.



National table tennis players were invited to help develop the first blind box of the national table tennis team

### Innovating Product Intelligent Experience

China Unicom insists that innovation is the driving force for high-quality development. Through product life cycle penetrating management, the Company established a priority promotion mechanism for its own products as well as a classification management mechanism for innovative products in consumer market, focusing on the area of consumption upgrades, to realize product innovation and providing users with a more intelligent life experience. The total number of users served by China Unicom reached 440 million, including 306 million mobile billing subscribers, 270 million 4G subscribers, and 86.1 million fixed-line broadband subscribers. The integrated user penetration rate reached 64%, up by 5 percentage points year on year.

#### Building industry-leading "cross-regional" capabilities

In order to meet the needs of the customers for services in different places due to migration, the Company provided a full range of cross-regional services for the first time in the industry relying on the intensive advantages of IT and launched a cross-regional integration product for real-time sharing of business volume for the first time. As of the end of December, the cumulative number of cross-regional services accepted nationwide reached nearly 10 million.

#### Creating high-traffic apps to enrich life services

Based on communication services, the Company gathered internal and external traffic, created a high traffic portal APP for comprehensive services on daily life, and built three ecosystems of Smart life, Smart communication and Smart entertainment, bringing in more convenience to the public. Through the reconstruction of the points operation model, the conversion from unilateral communication points exchange to a bilateral Internet-based point ecological model enabled the high-traffic APP to attract 92.159 million monthly active users, an increase of 26.9%, which is deeply favoured by customers.

#### Upgrading Smart Home Internet products

The Company continued to improve the "1+4+X" Smart Home product system, promoted the scale development of its core businesses such as "WO Family Video, WO Family Network Deployment, WO Family Fixed Call and WO Family Surveillance", and launched innovative products such as 5G messages, video ringback tones, and mobile phones butlers, so as to continuously meet the users' various home application needs such as "HD video, intelligent networking, security surveillance and AI Smart voice". The Company also coordinated all parties in the value chain to promote the establishment and development of Smart Home product ecology, and providing users with smarter and warmer home services experience.

### WO Family Surveillance

- Used in security engineering platforms and comprehensive management platforms of local public security authorities in Hunan, Henan, Anhui and other regions.
- Used in centralized monitoring of pandemic areas and key populations in Chongqing, Heilongjiang, Beijing, Shandong and other regions.
- Used in kindergarten monitoring in Baoding, Hebei, and in nursing homes for caring for the elderly in Heilongjiang, Jilin and other regions.

## Continuing to Improve Customer Reputation

China Unicom carried out end-to-end customer experience management, established a Smart customer service system, built a service experience brand and strengthened closed-loop operations on all issues, to promote transparent consumption and achieve continuous improvement in service perception and levels.

### More intimate customer experience

The Company deeply integrated customer experience management into all aspects of production and operation, continuously optimized business rules and procedures, and established a product manager accountability system, to constantly improve product and service quality.

- An end-to-end, full-scenario and full-lifecycle real-time experience assessment system was established and to realize the assessment of service quality with the customers' voice, using their voice to push forward the process reform and service transformation.
- An intelligent, intensive, one-stop Smart customer service system was created. Relying on all-Internet based and intelligent means, "full-scenario service map" was built to achieve the production and delivery capabilities of "online and offline synergy integration" of service touchpoints, and the intelligent hotline coverage reached 71%.
- The Company promoted the reservation mechanism for broadband installation and relocation and repair services, and the reservation rate for installation and maintenance services reached over 75%.
- During the pandemic, the employees of customer service lines across the country assumed strong responsibilities and assured non-stop service on 7\*24-hour basis for hotline services.
- The Company Won the 2020 (the 13<sup>th</sup> Annual) "Golden Tone Award" and the Big Data Application Award of China's Best Customer Contact Center issued by the Best Customer Contact Center of China and the Excellent Customer Experience Selection Committee.

### More convenient customer services

The Company conducts questionnaires periodically for users and frontline marketing staff to establish a product assessment system and a feedback assessment system for frontline staff, and to continuously improve service levels.

- Simple acceptance function of cBSS2.0 integrated services was optimized to shorten the waiting time of users; the "non-outlet auto-filling electronic form" was promoted, while it enhanced the handling on compliance of online channel business, and improving handling efficiency.
- The innovatively piloted "electronic identity authentication" in 6 provinces has built the national one-point issuance, with capabilities enabling wide usage in online and offline channels and providing users with convenient services.
- Mobile/online outlet were opened up for users at abnormal status to use the mobile network and fixed-line network, as well as convenient payment for "green channel" without having to log-in, allowing "payment" to be more convenient.
- The Company optimized the "loss reporting/unlinking" business management of the mobile network, strengthened the certification security of unlinking business, making loss reporting services more convenient, reducing the risk of customer property loss, and better protecting the rights and interests of customers.

### More beneficial mobile number portability

China Unicom has always adhered to the original intention of mobile number portability to benefit the public. The Company comprehensively regulated mobile number portability and network transfer services, strictly abided by the "nine must not" and "five portability prohibitions", continuously improved the customer experience of portability, striving to achieve stable service operations of mobile number portability, steadily declining customer complaints, increasing customer recognition, and improving service quality.

- The Company participated in standardization work such as the revision of the interaction specification for mobile number portability, and the research and formulation of technical standards for regulatory platforms.
- The training of front-line window service personnel continued to strengthen to ensure that the service delivers good attitude and professional answers, so as to provide customers with satisfactory mobile number portability services.
- Launching the remote mobile number portability service to allow customers to handle porting anytime and anywhere, customers can enjoy more than 20 types of remote services and remote integration products that share real-time business volume after porting, same as the existing customers.

Jiangsu Unicom interpreted Smart services with "professionalism, vitality, earnest, and caring", realizing unified operation of all work orders in the province and comprehensively improvement in both hotline satisfaction and complaint satisfaction.



### More reliable customer reputation

The Company has maintained close communication with customers, to comprehensively enhance customer service brand awareness, and deliver positive energy to customers.

- Through mini video dissemination and live streaming interaction, customer service touchpoints were enriched. A total of 3,376 videos were produced and launched throughout the year. China Unicom's customer services ranked No. 1 in scale among central state-owned enterprises in Douyin and Bilibili, and No. 1 in the industry in Kuaishou.
- In 2020, the overall trend of NPS customer satisfaction with word-of-mouth improved. The annual self-improvement of mobile network increased by 5.5 points, and broadband increased by 7.6 points. Among which, the mobile network increased significantly year-on-year, with a self-improvement increase of 9.5 points; the self-improvement of business NPS increased by 1.2 points, maintaining leading in the industry; the self-improvement of service NPS was on the rise, and increased by 15.3 points. The overall MIIT satisfaction increased to 81.32 points, an increase of 0.21 points year-on-year, reflecting the Company being the only operator among three that was improving.

### Better service quality

China Unicom has adhered to problem solving, and deepened the unified and standardized management of the entire process, omni-channel and all scenarios of customer complaints. The Company strengthened closed-loop operation of all problems, strengthened pre-authorization resolution and smooth complaint channels, while initiated complaint customers' satisfaction follow-ups, realizing the normalized operation on problems on the employee side. The Company followed up and operated 83 clustering key problems throughout the year, and verified and solved 49 problems.

- In 2020, complaints with the MIIT dropped by 35.2%, reflecting the largest decline in the industry.
- Maintained smooth 10010 and other complaint channels, the channel resolution rate in the Company's headquarters increased by 21.7pp, with satisfaction rate increased by 13.1pp.

### More transparent standardized consumption

China Unicom has conscientiously implemented the "Law of the People's Republic of China on the Protection of Consumer Rights and Interests" and other laws and regulations related to the protection of customer rights, strictly regulated billing and charging behaviors, to protect customers' right-to-know on consumer services and strengthening the popularization of consumers' knowledge of products and services.

- Organizing various provincial branch companies to sort out packages on sale and standardized the tariff list publicity, as well as set up display areas in service outlets, and mobile and online outlets.
- Form free template continued to optimize to ensure that the service content and time limit are clearly informed to customers and customers understood their consumption.
- Online and offline business outlets, traditional media, and new Internet media were combined to promote information about various products and services to consumers in a timely, true, accurate and easy-to-understand manner.
- Violating marketing actions such as bundling sales and unauthorized modification of customer packages are strictly prohibited, and acts of confirming the opening, trial, modification and customization of services without the consent of customers are severely punished.

## Integrating Online and Offline Channels

China Unicom continued to promote the transformation of its channel model and improved its online and offline integrated operation capabilities through measures such as focusing on middle platform touchpoints, integrating online and offline services and cross-industry ecological cooperation, to create a smart, open and integrated channel ecosystem.

### Accelerating the upgrade of online and offline integrated experience

With the intelligent means such as Big data, taking the agile supply chain as the assurance and relying on the Smart middle platforms, China Unicom strengthened the collaborative operation capabilities of its own channels and cooperation channels, online and offline channels, and continued to create digital OMO (online and offline integration) channel system.

- Taking the high-traffic portal APP as the starting point, China Unicom integrated internal and external resources, converged internal and external traffic, and realized online and offline resource sharing through cloud stores, live broadcast and scanning code calls, and promoted the digital operation of service outlets.
- China Unicom built online and offline integration capabilities of cloud stores, provided the capability to support red packet collection, online installment (for new users), one-click generation, terminal sales, in-store traffic attraction, mobile phone store and enterprise WeChat embedding, etc., and started the touchpoint cooperation with leading apps such as Alipay, Meituan and others, and a total of 13,000 cloud stores had been opened in 31 provinces across the country.
- China Unicom enhanced digital capabilities, optimized and adjusted the layout of physical channels, and integrated marketing tools. The first batch of pilot provinces have completed the collective replacement of marketing tools, and the proportion of digital customer acquisition increased from 38.2% to 52.1%.

### Promoting the upgrade of online Internet services

Following users' demands, China Unicom accelerated the development of online channels, and provided users with a more convenient online service experience.

- China Unicom consolidated cooperation with leading Internet companies to expand cost-effective light touchpoints.
- China Unicom created a traffic attraction platform, and quickly expanded cooperation resources through measures such as product innovation, major touchpoint cooperation, channel coordination, etc., to open up a new pattern of local traffic attraction. The Company also created differentiated privilege package products, combined live streaming of multi-platform major Internet KOLs, and strengthened the online collaboration among government, enterprises and entities, and the active touchpoints reached 1,800.
- China Unicom promoted the full digital operation of service outlets, and improved channel efficiency through live marketing activities. At the beginning of 2020, the first phase of China Unicom's live experience camp started, and the first batch of "Star Anchors" were spread across provinces to help pandemic prevention and control, precise poverty alleviation, industrial cooperation, etc., and to help promote new 5G terminals, new technologies, new applications and new rights. The total number of live streaming events reached 22,000.

In order to meet the individual needs of customers for privilege products, China Unicom's provincial branch companies teamed up with partners to deeply create regionally differentiated privilege package products, and launched Shanghai Overwatch, Guangdong Three Kingdoms, Money Saving, Beijing Tuanyou card and other 2B2C cross-industry cooperation projects.



“Star Anchors” matches held by Gansu Unicom

### Upgrading the efficiency of self-operated service outlets

From the perspective of customers, China Unicom promoted the digital transformation of service outlets and comprehensively improved the operational efficiency of service outlets, to provide customers with a more intimate service experience.

- In order to fully protect consumers’ right to know, a white paper for products on sale was produced, and an online publicity column was used to display relevant information such as package tariffs, service contents, time periods, promotions of products on sale, and etc.
- Small class activities on topics such as 5G knowledge and smartphone science popularization have been regularly organized, for customers to experience products on site and popularizing industry knowledge.
- Focusing on the four major scenarios of rural areas, campuses, communities and business circles, the cross-industry light touchpoints have been iteratively expanded and a micro-ecological circle has been created, and more than 20,000 micro-ecological circles have been built.

Tianjin Unicom utilized high traffic APP intelligent methods to realize applications such as intelligent early warning and appointment calling in service outlets, bringing along digital service experience for customers.

## Deepening the Promotion of Speed Upgrade and Tariff Reduction

China Unicom conscientiously implemented the national speed upgrade and tariff reduction work deployment, and established a special leading team to further reduce the unit price of mobile data traffic by increasing package resources, reducing off-package unit prices and launching preferential packages. Mainly focusing on small and medium-sized enterprises and manufacturing companies that were greatly affected by the pandemic, the Company promoted the reduction of production and operation costs of enterprises by taking speed upgrade and benefiting business, as well as combined discounts, as the main measures, and thus the average tariffs of broadband and Internet dedicated lines for corporate customers were reduced by more than 15%. The Company further met consumer demands, accelerated the pace of high-quality development, and promoted the development of the digital economy and the upgrading of information consumption.

### Speed upgrade:

**Smoother** gigabit 5G for consumers’ convenient

The average download speed of fixed-line broadband increased by about **8** times

Over **380,000** 5G base stations were built

“Three Gigabit Era” **at your fingertip**

### Tariff reduction:

**More substantial benefits** for consumers’ affordable use

The average tariffs of mobile data traffic dropped by more than **95%** in five years

Tariff of broadband for corporate customers dropped by over **15%** in 2020

**1.947** million registered households in poverty were benefited

### Services:

**More intimate** innovative services for consumers’ enjoyment

Overall satisfaction rate **improved throughout the year**

Warmly launched **cross-region services** and cross-region products

Leverage informatization to build **a platform for benefiting business**

## Action to Caring for the Disabled and Helping the Elderly

China Unicom sincerely cares about the underprivileged groups such as the disabled and the elderly. Through technological innovation, barrier-free environment construction, and tariff concessions, the Company meets with the needs of personalized services and providing undifferentiated services.

- The Company improved the construction of barrier-free environment, opened up green channels, created exclusive seats, providing priority services for the disabled groups in sight, hearing and speech as well as convenience for customers who bring guide dogs into service outlets.

- For different underprivileged groups, the Company provided services such as preferential tariffs, expert services and exclusive service facilities.
- In order to promote the barrier-free communication of information for the hearing impaired, and actively advance the innovation of information communication and AI technology, the Company launched the Hearing King Card for 20 million hearing impaired people across the country, and it was awarded the “Top Ten Excellent Cases of Information Accessibility in 2020” by the China Disabled Persons’ Federation.
- The Company provided caring cards for the elderly, increased the functions of timed voice calls, fraudulent call interception, parental activity range inquiry, and etc., to improve the life safety of the elderly. The Company also organized regular small classes to help the elderly using Smart phones.



China Unicom participated in the 15th China Information Accessibility Forum as the only representative in the telecommunications industry

Jiangsu Taizhou Unicom held an audition with the theme of “Technology allows love to speak and to listen to the voice of the world” to share with the hearing impaired the first domestic barrier-free communication product, including the AI technology innovation results that lasted more than 500 days, and with 100 upgrade iterations, 30,000 internal tests and 60,000 training sessions. A total of more than 330 hearing impaired individuals was invited to participate in the events and experienced the surprises brought to them by technological innovations.

## Serving the Winter Olympics with craftsmanship spirit

As the sole official telecommunication service partner for the Beijing 2022 Winter Olympics and the Paralympic Winter Games, China Unicom has adhered to the concept of “hosting a green, shared, open and clean Olympics” as its fundamental principles, and conscientiously implemented the “simple, safe and exciting” requirements for hosting the games, and provided the wisdom of interconnection for the innovation of the Olympic games with its craftsmanship spirit as a central state-owned enterprise centering on the strategy of “Smart Winter Olympics”.

## Strengthening responsibilities and demonstrating responsibilities

China Unicom thoroughly implemented the relevant requirements of the Beijing Winter Olympics Organizing Committee, and strengthened its responsibilities, to ensure that everything is in place. It is actively preparing for the Winter Olympics and making positive contributions to the success of a wonderful, extraordinary and outstanding Olympic Games.

- Actively promoting the collaboration between Beijing and Hebei and building a premium network for the Winter Olympics. The Company fully implemented the communication service requirements of the Beijing Winter Olympics Organizing Committee, and planned in accordance with the core concept of one network in Beijing and Zhangjiakou for the 2 cities and 3 regions of matches, to ensure that the communication service standards in the Winter Olympics are consistent, playing a leading role in the comprehensive implementation of the coordinated development strategy of Beijing-Tianjin-Hebei.
- Building the network with craftsmanship spirit to ensure that the network is ready in time. The Company overcame major challenges caused by extreme cold and the pandemic, achieved uninterrupted work, undiminished intensity and unreduced standards and advanced quality as planned in the construction process through strict implementation of prevention and control measures, innovating working methods and overcoming various challenges.
- Carefully designing the assurance system to ensure that that it is foolproof in the events. The Company standardized the communication assurance process, unified the assurance standards and formed a preliminary assurance capability. It also arranged the match-time operation and assurance team on duty in a focused, planned and batched manner to ensure the safe, reliable, stable and orderly operation of the network during match-time.





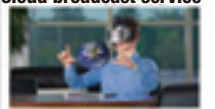
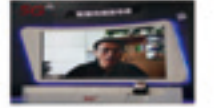
## Empowering the Smart Winter Olympics with 5G

As an “innovative leader in the 5G era,” China Unicom has empowered the Smart Winter Olympics with innovative applications in the fields of 5G technology, cloud broadcasting and data sharing, assisting a technological Winter Olympics to demonstrate the strong technological strength of China.

- The Company firstly released the core objectives of the “Smart Winter Olympics” with 5G technology as the center, and becoming the strategic leader of the “Smart Winter Olympics”.
- An innovation system for ten major application services in three scenarios of “watching, participating and hosting” has been created to fully empower the Beijing Winter Olympics.
- As one of the key projects of the Technological Winter Olympics in Beijing, China Unicom took the lead to establish an international cloud broadcasting company, which would provide coordinated, convenient and flexible event broadcasting technical services covering multiple locations around the world, and effectively enhances the edges of Beijing as a technology innovation center, as well as the development of digital industry, thus contributing to the nation’s empowerment of digital economy development.



Empowering the Smart Winter Olympics with China Unicom 5G

Event Watching	Event Hosting	Event Participating
<ul style="list-style-type: none"> <li>Viewer-oriented watching service</li> <li>Advanced and ultra-definition multimedia service</li> <li>Good on-site and family watching experience</li> </ul>	<ul style="list-style-type: none"> <li>Hosting services for venues and the organizing committees</li> <li>Fast and convenient venue service capabilities</li> <li>Events and normalized Smart operation capabilities</li> </ul>	<ul style="list-style-type: none"> <li>Services for participating athletes and broadcasters</li> <li>Smart information facility service</li> <li>Multifunctional information service</li> </ul>
 <b>Ultra HD live broadcast</b>  <b>Smart event watching</b>	 <b>Smart customer services</b>  <b>Smart venues</b>	 <b>Smart dedicated lines</b>  <b>Full-featured command system</b>
		 <b>Smart Link</b>  <b>Cloud broadcast service</b>  <b>5G VR entertainment</b>
		 <b>Smart media</b>  <b>Smart medical</b>

On 8 August 2020, China Unicom and Sinopec jointly became the rotating chairman unit of the 3rd Partner Club of Winter Olympic Games. The two parties will work closely together to actively promote in-depth cooperation in 5G+clean energy, Smart gas stations, joint marketing of the Winter Olympics and promotion of ice and snow sports.



## Spreading the Olympic cultural spirit

In order to promote the Olympic spirit, spread the Olympic culture and help with the promotion of the Winter Olympics, the Company has organized various publicity activities to introduce the progress of the Winter Olympics to all sectors of the society, popularized the knowledge of the Winter Olympics, and mobilized the public to pay attention, support, and participate in the Winter Olympics.

- The launch of the Smart IP “Little Dream” marks that China Unicom’s “Smart Winter Olympics” strategy has entered into a new stage. It will lead the public to experience ice and snow sports and feel the charm of the Smart Winter Olympics.
- “One in 300 million” communication project of the Winter Olympics won the 9th ADMEN International Award.
- Together with UN-Habitat and the Beijing Winter Olympics Organizing Committee, the Company organized a series of “Winter Dream Ambassador” activities, with the theme of “Creating Wisdom to Build Green Winter Olympics” in 2020. Through the concept of collecting sustainable development in these activities, the Company leveraged 5G technology to provide solutions and creative designs for barrier-free living facilities, Smart waste sorting, Smart green travel, and etc. 29 outstanding works were selected to be included in the United Nations “2020 Smart Winter Olympics and Sustainability Development Report”.
- China Unicom took advantages of its nationwide offline service outlets and convenient mobile phone service outlets to participate in the Winter Olympics franchise plan. The Company also leveraged its technical advantages of 5G, Internet of Things, Big data, AI and others, as well as combining the characteristics of young generation’s consumption, to innovatively develop the Winter Olympics Smart gashapon machine and to sell licensed products, aiming to help organize the Winter Olympics and spreading the Olympic culture.



Smart IP “Little Dream”

## OVERCOMING ADVERSITY AND MOVING FORWARD SMOOTHLY

China Unicom always puts the safety of people’s lives in the first place, devotes itself to emergency rescue and disaster relief, and provides communications assurance for major events, demonstrating China Unicom’s strength.

### Dedicating to Flood Prevention and Disaster Relief

#### Establishing a sound flood control assurance system

In response to flooding disasters, China Unicom has conducted early deployment, unified dispatch and detailed implementation of flood control requirements, and various flood control work was carried out in an orderly manner. The Company carries out potential danger investigation in advance to identify and eliminate potential safety hazards, arranges a 24-hour standby professional repair team, and formulates mobile communication emergency plans to ensure the normal operation of emergency support.

### Making every effort to participate in communication assurance for flood prevention and protection

In 2020, the southern region, while at its flood season, experienced the heaviest flood situation since 1998, with some areas experienced floods, geological disasters, hailstorms, typhoons and other hazards. China Unicom put the safety of people's lives in the first place and responded effectively without fear of hardships and dangers. During the flood period, the Company made every effort to ensure the communication safety of important departments such as the Flood Control and Drought Relief Headquarters, the overall network was operated smoothly, and there was zero casualties. China Unicom committed an aggregate of RMB108 million to disaster relief, and 191,000 times of emergency personnel were dispatched, 178,000 times of emergency equipment were used, and 790 million emergency SMSs were sent. The Company actively carried out post-disaster reconstruction work committing a total of RMB195 million.

**RMB 108 million**

committed to disaster relief in 2020

**191,000 times**

emergency personnel were dispatched

#### Anti-freeze communication assurance

In 2020, the whole province of Guizhou suffered from extensive freezing, accompanied by icing of electric wires and roads, and some base stations and optical cables were damaged due to low temperature and power outages. Guizhou Unicom responded quickly, with the repair team members braved the ice and snow and carried the optical cables on their shoulders, not only to use both hands to de-ice, but also repaired lines with fusion splicers, actively carrying out network inspections and maintenance, and making every effort to allow users to enjoy a warm network despite cold wind. A total of 1,612 emergency repair personnel were dispatched, 421 emergency vehicles and 478 generators were used.



Frozen face and condensed ice beads on eyebrows cannot stop China Unicom's anti-freeze communication assurance

### Well-assurance during major events

Adhering to the key promises of "careful, focused, trustworthy, superior and intelligent", China Unicom coordinated communication assurance and pandemic prevention and control to ensure smooth communication at major meetings and events, contributing to "telling China's story and spreading China's voice" in complex situations. For these outstanding contributions, the Company was commended by the National People's Congress (NPC), the National Committee of the Chinese People's Political Consultative Conference (CPPCC), the General Office of the State Council, the Ministry of Industry and Information Technology (MIIT) and the State-owned Assets Supervision and Administration Commission (SASAC).

#### "Cloud Diplomacy" communication assurance

Under the background of the normalization of pandemic prevention and control, "cloud diplomacy" has become the main channel for central leaders to communicate with major leaders around the world and international organizations. In 2020, China Unicom provided communication assurance for 40 top-level "cloud diplomacy" activities, including the G20 summit, with an assurance period of around 350 hours. China Unicom's communication assurance has been praised in multiple times by General Secretary Xi and the leaders of the SASAC.

#### Communication assurance for "Two Sessions"

In order to ensure smooth running for the "Two Sessions" during the pandemic prevention and control period, China Unicom innovated the service model of reinsurance, providing remote interviews for the Premier's media conference, press conferences, CPPCC online video live room, NPC group video conference, and remote interviews in minister channel, etc., providing reliable new video services, large-scale on-site Internet speed-up services, network security protection and other measures to successfully complete the assurance task.

#### Communication assurance for "China International Fair for Trade in Services"

The Company provided reliable and safe global network support for China International Fair for Trade in Services, involving multiple assurances such as the video conference of the Service Trade Fair summit, the information service of the media center, the security of private network, the video transmission of CCTV, the mobile network service, and etc. A total of 1,812 personnel and 15 vehicles were dispatched in the event.



### In-Depth Promotion for Community Public Welfare

China Unicom is a loyal practitioner of the core values of socialism. The Company has gathered various social and public welfare forces and has made positive contributions in the fields of culture and sports, education, medical care, environmental protection and public welfare, conveying warmth and care.



## Carrying out external charity donations

The Company has established a sound charity donation management system, along with the principles of voluntariness, acting within its capacity, clear rights and obligations, and having integrity. The Company has actively assumed social responsibilities, and strives to give back to the society and promoting the sustainable development of public welfare.

External donations  
in 2020

**RMB 6.374 million**

Donation projects	Amount donated RMB'000
Donate to designated poverty alleviation areas (poverty alleviation)	133
Aid to border areas (aid to Tibet and Xinjiang)	52
Other donations (cultural and sports, education, medical and health, public welfare, environmental protection, etc.)	6,189
<b>Total</b>	<b>6,374</b>

## Actively Engaging in Charity and Voluntary Activities

Combining the voluntary spirit of “contribution, friendship, mutual assistance and progress” with corporate production and operation, as well as staff team building, China Unicom actively carried out voluntary service activities with rich content and diversified forms. The Company has made positive contributions in helping students and the needy, the civilized and environmental protection activities, and caring for the old and young, highlighting the image of the responsibility as a central state-owned enterprise and practicing the core values of socialism with actual actions.

**55,006**

registered volunteers

**58,095**

participation in volunteer service activities

China Unicom has built a “Unicom Charity” platform based on blockchain technology. Each donation has a “Unique Code of Unicom Charity Chain”, which reflects the funds are donated via the blockchain, it cannot be tampered with, and can be traced, to ensure openness, transparency and credibility. The “Unicom Public Welfare-Action to Realize Dreams by Points for Students” project won the Bronze Award in the Fifth China Youth Volunteer Service Project Competition.

Zhejiang Unicom conducted various heart-warming charity activities, in which, through the “warming hearts with clothes” fundraising activities, the Company donated winter clothes to children in Walong Village, Tibet, donated books to Tarji Primary School in Sandaoh Township, Huocheng County, Xinjiang, to realize the transfer of love and knowledge sharing, donated money to primary schools in economically weak areas, helping the development of education, and sent quilts to the elderly to convey caring.



Book donation public welfare activities

Jointly with Cihang Charity, Guangdong Huizhou Unicom has arranged more than 1,600 employees/times to participate in various public welfare activities, including the Cihang Family Visiting Day events for eight consecutive years.

Hunan Unicom paid attention to the education of children in poverty. The Company has established small libraries for many poor villages in Loudi, Chenzhou and Xiangxi to transform the learning environment. The Company donated books, school supplies, and sporting goods to Dongjiu Village for many years. In 2020, the Company cooperated with Changsha Polaris & Dawn Education to organize the “Light Up Dreams — Journey to Changsha from Dongjiu Village”, and also organized the “Walk with WO Love” charity activity to care for resident children.”



Hunan Unicom’s “Walk with WO Love” charity activity to care for resident children

Sichuan Mianyang Unicom jointly organized the “Unicom & Shantu Charity Live Broadcasting” event together with Mianyang Deaf Association and Sichuan Shantu Weike Technology Co., Ltd., to provide employment opportunities for disabled individuals.



## Digitally Improved Governance Efficiency with Focus on Fundamentals

Persistence in compliant and lawful operations

Deepening corporate reform

Promoting green low-carbon development

## DIGITALLY IMPROVED GOVERNANCE EFFICIENCY WITH FOCUS ON FUNDAMENTALS

As a “pioneer” in the mixed-ownership reform of central state-owned enterprises, China Unicom undertook comprehensive digital transformation. Guided by the market-oriented allocation factors of production, the Company deeply reformed systems and mechanisms and accelerated the establishment of new mechanism that stimulates the vitality of micro entities to better adapt production relations to productivity changes. At the same time, the Company practiced green development philosophies by building green networks and promoting the green transformation of production and operation, leading to significant improvement in operational efficiency.

### Measures adopted in 2020

- Carried out comprehensive digital transformation to further reform the operational systems in five areas, namely big marketing, government & enterprise business, networks, IT and technological innovation.
- RMB120 million of special funds were invested in the energy-conservation upgrade of existing facilities.

### Actions to be taken in 2021

- To deepen operational system reform and widely promote director-based accountability system.
- To deepen the rule of law in corporate governance and enhance legal risk management and control with deep integration between legal compliance and operational management as well as strengthened horizontal and vertical coordination.
- To conduct in-depth research on energy-conservation technologies, and apply mature energy-conservation technologies to appropriate machine rooms across the whole network.

## Persistence in compliant and lawful operations

China Unicom adheres to the philosophy of operating with integrity. It comprehensively strengthens compliance with laws and regulations, risk management and control, and anti-corruption and integrity governance, so as to strengthen the rule of law in corporate governance and ensure sustainable and healthy corporate development.

## Persevered in compliant operations

Compliant operations are an inherent requirement for the robust operation of companies. China Unicom further regulated policy management, enhanced the rule of law in governance, bolstered risk prevention and control, and continuously consolidated the foundation for high-quality corporate development.

### Lawful operations

- China Unicom deepened the rule of law in corporate governance in pursuit of digital transformation and high-quality development. It enhanced legal risk management and control with deep integration between legal compliance and operational management as well as strengthened horizontal and vertical coordination.
- The Company carried out special inspection and remediation on company policies. 5,033 policies were optimised and levels were adjusted for 1,825 items to solve problems in existing policies and regulations such as untimely “formulation, revision and abolishment”, “conflict and blind spots”, and low effectiveness and operability, etc.
- The Company organised a large-scale campaign called “Compliant Actions Proposal”. A total of 155 *Compliant Actions Proposals* were collected, which set out clear standards on employees’ compliance behaviour, resulting in favourable collaboration among number of departments.
- The Company actively explored the digital transformation for contract management. By connecting data and workflows and consolidating responsibilities, the Company built an end-to-end closed-loop contract management system. Legal review rate of the Company’s economic contracts was 100%.
- The Company strengthened promotion of legal awareness. The Company published 147 articles about legal knowledge and cases on the Smart Portal and the Law Popularization Zone of Follow Wo, organised special legal awareness promotion campaigns such as “4/15” and “4/26” and bolstered the promotion and education of the *Civil Code*. The Company established a *Learning Zone for Legal Compliance* on the Online College to share legal achievements, launched integrated “Five Micros” compliance activities in the WeChat public account “Grow Wo with Legal Compliance” and published an electronic magazine called *Compliance Wo and You*.

### Risk prevention and control

China Unicom insists on the objectives of “strengthen internal control, prevent risk and promote compliance”. It improved the management system and the environment of internal control, enhanced supervision and assessment, and strengthened closed-loop internal control management. By doing so, it continuously improved its capability of risk prevention and control, and effectively prevented and mitigated major risks.

- China Unicom insisted on “reviewing every matter that should be reviewed and strictly handling every matter under review”, innovated in the audit mechanism, improved the accuracy of risk positioning, and conducted audit supervision, problem remediation and accountability actions.
- The Company strictly investigated the responsibilities for non-compliant operations and investments. In 2020, a total of 116 problem clues were identified. RMB24.88 million of losses were recovered in the year, and RMB6.87 million of loss risks were reduced.
- A supervision team was established. Inspection and appraisal were integrated to centralise scattered supervision forces, diversify supervision content, and shift from post-event inspection to pre-emptive supervision and guidance.

- China Unicom strengthened overseas risk management, established 108 risk catalogues, and arranged prevention and control of key risks such as the US operations, the COVID-19, network efficiency and credit risk control. 90% of the 115 historical risks were downgraded or delisted.

Training in legal compliance

**4,580** times

Number of people trained in legal compliance

**243,000**

### Focused on combating corruption and promoting integrity

China Unicom solidified the overwhelming victory in the combat against corruption, advocated a culture of integrity governance, and created a clean and upright atmosphere. Following two consecutive years of decline in 2018 and 2019, the number of whistle-blowing cases across the whole company continued to drop by 16.3% year-on-year in 2020. The overwhelming victory in the combat against corruption was solidified and expanded. The Company saw significant improvement in its clean and upright political ecology.

- Anti-corruption responsibilities at different levels were further refined into 104 specific tasks in 17 aspects to guide employees at different levels to understand and fulfil their responsibilities.

- The Company published the second volume of the *Guidelines for the Prevention and Control of Integrity Risks*, which added the prevention and control measures for 24 risks in information security and sub-division units, etc., resulting in a risk prevention and control system covering 65 integrity risks in eight key areas.

- The Company carried out in-depth warning education. It created a warning education video titled *Always Developing the Working Style* to put employees at all levels on alert, facilitating the improvement of working style. Aiming at themes such as pandemic prevention and control, formalism and bureaucracy, etc., the Company educated its staff with cases around them, and actively promoted discipline inspection institutions at different levels to conduct in-depth education on integrity among junior staff through innovative methods such as sending disciplines to the front-line and original mini-CEO videos.

- The Company strengthened the penalties for non-compliant suppliers, established a disciplinary mechanism to address “option-style” corruption within three years of resignation or retirement, and blacklisted the third batch of 52 non-compliant suppliers. Since 2017, a total of 232 suppliers have been banned.

- The Company vigorously remedied formalism and bureaucracy. It addressed 32 cases of non-compliant entertainment with corporate funds and punished 58 people. Nine typical cases were selected and publicised across the whole Company.

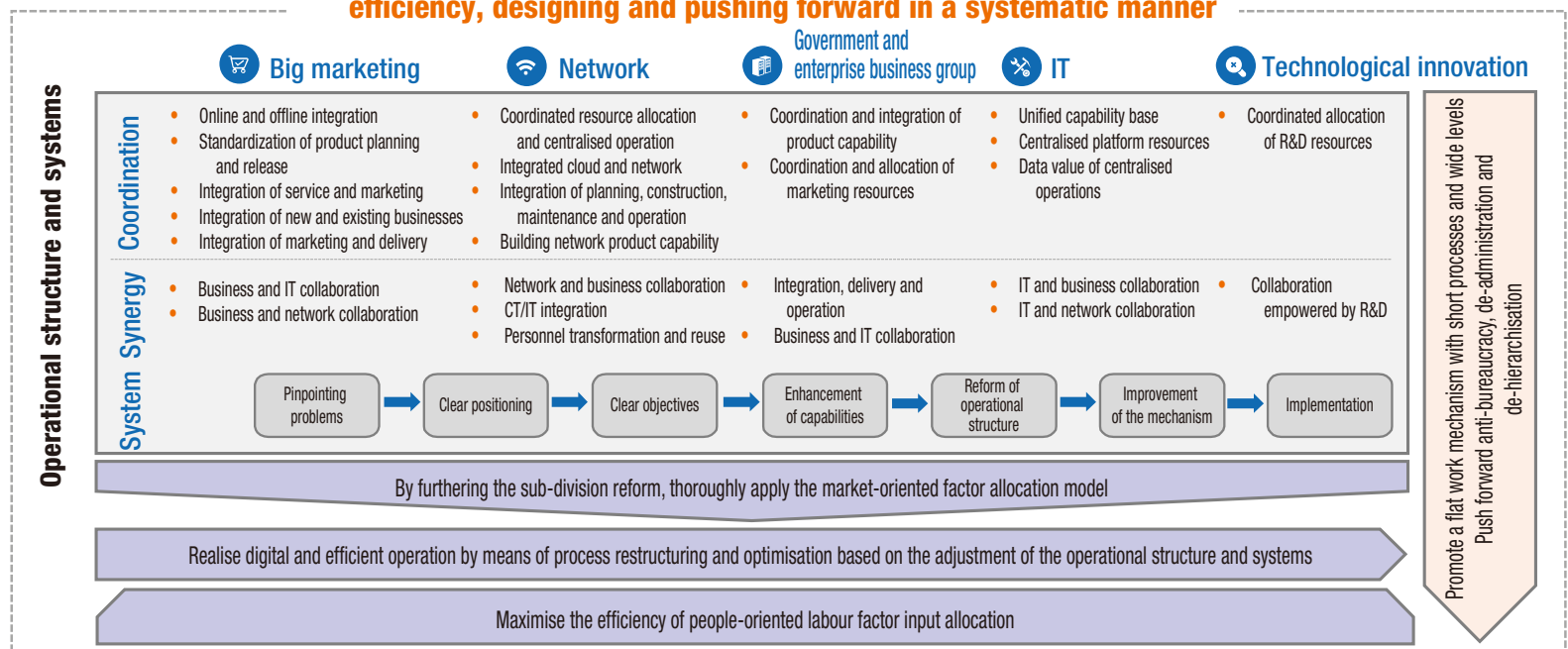
- The Company investigated into the misappropriation of general expenses of base station ancillary facilities as well as the leasing fees, electricity fees and agency maintenance fees in network maintenance since November 2015. It identified a total of 98 cases of suspected violations of disciplines and regulations, dereliction of duty, etc. involving an amount of RMB40,856,100.

- Whistle-blowers can report corruption cases through letters, telephone calls, SMS and visits. The Company protects the rights and interests of whistle-blowers in accordance with the law, and keeps confidential the reported matters, handling status and information related to the whistle-blowers.

### Deepening corporate reform

As a central state-owned enterprise undertaking the major mission to build new digital infrastructure, China Unicom took the initiative to embark on comprehensive digital transformation, made systematic and coordinated efforts to reform operational systems on all fronts, deepened the implementation of market-oriented mechanism, and enhanced the coordination and integration of resources factors to develop itself into a modern enterprise full of vigour and vitality, and steadily achieve long-term and high-quality development.

#### Focusing on system integration, collaboration and efficiency, designing and pushing forward in a systematic manner



Reform blueprint of China Unicom's comprehensive digital transformation

## Promoted reform of operational systems

Taking into account the new requirements on resources and factors allocation brought by comprehensive digital transformation, in order to address deep-rooted problems that restricted development, such as insufficient coordination, inadequate synergy, scattered resources, weak product competitiveness and capability of technological innovation, inflexible market-oriented mechanism and elongated procedures, etc., China Unicom tackled the problems scientifically, sought changes on its own initiative and deepened the reform of five operational systems namely big marketing, governments & enterprises business, networks, IT and technological innovation, further developing its advantages and core capabilities. The Company optimised, created and reconstructed value creation systems for business, products, services, operations and management, adjusted the factor allocation methods and operating models, stimulating organisational vitality and improving operational efficiency. The coordination, synergy and empowerment of each professional function were significantly enhanced.

## Strengthened process reconstruction and optimisation

Focusing on value creation and adhering to the principle of “giving priority to customer experience, business operations and frontline needs”, the Company transformed the traditional procedures that centred on management control and were inefficient and costly to customer-centric digital procedures with high efficiency and low costs in an effort to build a procedure-based organisation. It developed a six-level procedure framework, specified process catalogues and lists, and achieved visible, manageable and controllable procedures based on a procedure management platform. At the same time, it drove each professional functions to concurrently improve policies, adjust organisational responsibilities and restructure procedures with bold innovation to promote the Company’s transformation into a digital, intelligent and ecological platform-based enterprise.

## Focused on three-system reform

The Company continuously deepened the three-system reform. With solid efforts made to the promotion and demotion of officers, engagement and dismissal of employees, and raise and reduction of income, it established an effective core driving mechanism for personnel appointment, training, appraisal, performance, promotion and withdrawal. The Company selected outstanding members to form a strong leadership, and adopted a human resource mechanism which promotes capable persons, demotes incapable ones and dismisses failing ones. It bolstered the linkage between the total compensation of professional functions and the key financial indicators, unlocked two batches of restricted shares, implemented a mechanism for sharing of incremental revenue, and promoted employee stock ownership for its mixed-ownership reform subsidiaries. It acquired high-end talents in the market on a regular basis, and built a four-level talent team of 18,000 persons.

## Developed a mechanism of “flat management, short processes and wide levels”

In order to solidly deepen the comprehensive digital transformation, the Company focused on key issues such as “excessive management levels, long work flows, inefficient coordination and unstable operations” and established a mechanism featuring “flat management, short processes and wide levels” to accelerate the reform of internal operational management and support mechanism. The Company pushed forward anti-bureaucracy, de-administration and de-hierarchisation, further flattened management level, established a short-process working mechanism and a system for authorization and responsibility allocation, and promoted an accountability system for directors under the supervision of respective department heads.

By doing so, the Company saw significant improvement in the market awareness, efficiency awareness and service awareness of units and staff at different levels. Internal transaction cost was reduced significantly, and operational management became more efficient.

In 2020, **109** directors were appointed in the marketing and network functions at the Headquarters

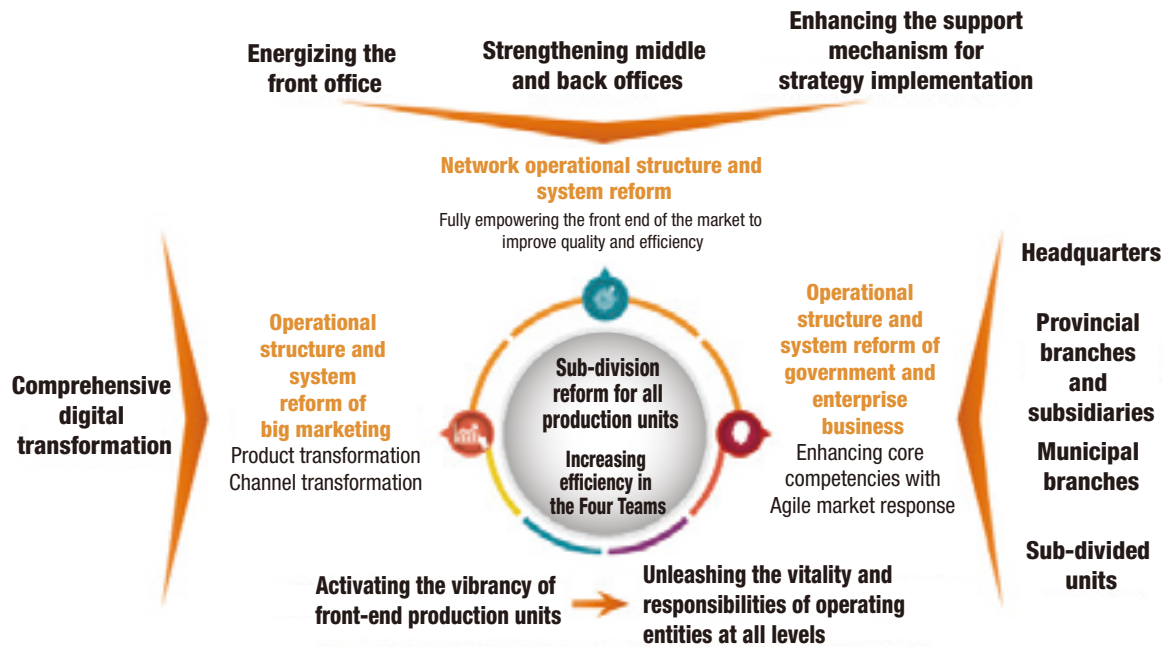
The Company promoted a director-based accountability system focused on management affairs. Directors changed from “judges” into “leaders”. Directors do not have corresponding internal institutions so as to break the barrier between departments. Direct reporting and coordination breaks the traditional habit of relaying messages tier by tier. The post grades and ranks were separated, and dynamic adjustment and withdrawal were carried out. With the director-based accountability system, the Company reduced its management levels, shortened work flows, and achieved flexible team allocation, rapid and agile response, clear responsibilities and powers, smooth procedures, data and information sharing, and optimal coordination efficiency.



China Unicom Directors Appointment Ceremony

## Activated the vibrancy of sub-divided units

The sub-division reform for all production units is an important step to deeply advance the mixed-ownership reform and achieve comprehensive digital transformation. It bears the important mission of implementing the reform. Focusing on activating vibrancy, improving capabilities and promoting development, and responding to the needs of internal and external customers, China Unicom firmly grasped the “systematic, malleable and synergistic” nature of reforms in the new era, and promoted the re-understanding, re-positioning and re-launching of the sub-division reform. The three professional functions, i.e., the marketing, government and enterprise business and network strongly built a comprehensive, collaborative and agile operation system for internal and external customers, and, with strong support from human resources, finance, and IT, provided a broad platform for those who “are willing to work hard and capable of making achievements”. As of December 2020, the number of sub-divided units in the whole Group reached 27,500, and a team of approximately 26,700 “mini CEOs” was cultivated. 210,000 employees have joined sub-divided units. Their salary growth was higher than their counterparts at the headquarters at all levels. Front-line employees were the first to obtain more sense of fulfilment.



**Creating a comprehensive, collaborative and agile operational system for internal and external customers**

### Deepened the reform of special projects

Aiming to create truly independent market entities, the Company continued to promote the reform of its subsidiaries, deepened the mixed-ownership reform by introducing more private capital and continuously amplified the function of state-owned capital, so as to build stronger, better and more vibrant enterprises and better serve the national strategy.

- Further deepened the market-oriented reform of subsidiaries. In order to create truly independent market entities, China Unicom formulated plans to further deepen the market-oriented reform of subsidiaries, and transformed the Company's management model for its subsidiaries. On the basis of reasonable targets and commitments and better corporate governance, the Company loosened its grip over and delegated more power to its subsidiaries, and encouraged them to focus on enhancing competitiveness in the market instead of relying on internal support.

- Substantial progress was made in the cooperation with private capital. Following a pilot run of social cooperation on municipal and prefectural level, China Unicom's Yunnan branch, as the only provincial branch of a state-owned enterprise in the "Double Hundred Action", introduced private capital and established Yunnan Unicom New Communications Co., Ltd. Over 90% of the branch's staff joined the private operating company. It achieved a cumulative revenue growth of nearly RMB500 million since the reform took place, and a cumulative loss reduction of nearly RMB350 million. The model was rolled out in seven municipal and prefectural branches in Guangxi. As of December 2020, the growth rate of fundamental business revenue of Guangxi branches in the social cooperation reform region was 2.52% higher than the overall level of Guangxi, with year-on-year loss reduction of RMB131 million and year-on-year EBITDA improvement of RMB126 million.

- Substantial progress was made in the mixed-ownership reform of subsidiaries. After the introduction of strategic investors, China Unicom Smart Connection Technology established a scientific and standardised corporate governance structure, implemented a tenure system and contractual system for management, and implemented long-term incentive plans for employees, effectively maintaining and increasing the value of state-owned assets. It also cooperated with strategic investors and made rapid deployment in areas such as smart terminals related to the Internet of Vehicles. By doing so, China Unicom Smart Connection Technology rapidly improved its product capability, with its pre-installed market share exceeding 70%, business revenue growing robustly and operating profits increasing steadily.

### Promoting Green Low-carbon Development

With the belief that waters and mountains are invaluable assets, China Unicom strictly abides by the *Environmental Protection Law of the People's Republic of China*, the *Energy Conservation Law of the People's Republic of China* and other relevant laws and regulations and deeply implemented the sustainable development strategy. In adherence to the environmental protection philosophy of "harmonious co-existence of network and the environment", the Company persistently promoted energy conservation and power consumption reduction, eliminated inefficient capacity, reduced network energy costs, and alleviated the impact of greenhouse gas emissions on the environment, thereby contributing to the prevention and control of pollution and bringing ecological benefits to the people.

### Enhanced green management

China Unicom established the Energy Conservation and Emission Reduction Management Committee. In accordance with the principles of energy conservation and emission reduction, cost reduction and efficiency enhancement, focus on key areas and comprehensive promotion, and source control and exploitation of existing resources, the Company continued to implement the *Special Plan for Energy Conservation and Emission Reduction for 2017–2020*. Taking into account its actual circumstances, the Company orderly organised special planning for energy conservation and emission reduction, application and promotion of key technologies, pilot research and development of new technologies, promotion and implementation of energy conservation laws and regulations, and optimisation of energy conservation management measures. In 2020, China Unicom appropriated RMB120 million in special funding for equipment energy-conservation upgrade.

The Company proactively responded to the challenges posed by global climate change, and identified and prevented pollution risk factors of air, water, and soil pollution during its production and operation. The main source of water for the Company's daily administration and production and operation was the central municipal water supply. There was no risk of water pollution. The Company strictly complied with the relevant requirements of the *Water Law of the People's Republic of China* and the *Law on the Prevention and Control of Water Pollution of the People's Republic of China*. The Company was committed to increasing the efficiency of water consumption. It promoted awareness in water conservation and conducted regular maintenance checks in each part of the water supply system. During the Reporting Period, there was no issue in sourcing water. At the same time, the Company effectively implemented energy-conservation and emission-reduction measures, and practised green network operation, striving to reduce carbon footprint.

### Deployed green network

Fully leveraging on technology innovations, China Unicom practised the philosophy of green development. In order to optimise total cost of ownership (TCO), the Company promoted green, low-carbon and energy-saving technologies.

- Improved data centre performance. The Company issued *IDC Construction Guidelines* and *Data Centre Power Utilization Efficiency PUE Guidelines*, clarified PUE targets, provided guidance on the application of energy-saving technologies related to air-conditioning and power supplies, and strived to improve IDC energy efficiency. Nine of the Company's data centres were included in the *Published List of National Green Data Centres*.

- Continuously streamlined networks. 22 sets of MGW were retired from 16 local networks of the core network, 502,000 lines were retired from the integrated access network PSTN, and 2.52 million lines were retired from the NGN; approximately 50,000 terminals of outdated MSTP/SDH equipment and 2,000 terminals of outdated WDM equipment were retired from the transmission network; 122 outdated equipment of the data network IP backbone network was retired. The Company continued retiring ageing infrastructure equipment, saving approximately RMB34.63 million in electricity cost for the year.

- Strengthened the management of electromagnetic radiation. During the construction of mobile communication base stations, China Unicom strengthened the management of electromagnetic radiation of the base stations to ensure that the electromagnetic radiation met the requirements of national standards. After construction was completed, base stations were tested for electromagnetic radiation, and the test results were publicly disclosed on the web for public scrutiny.

- Strengthened research on and utilisation of new energy. For base stations and equipment rooms, the Company conducted research on solar power supply for the communication network and conversion controller equipment, and carried out trials in six locations across the country. A 3.3kWp solar power generation system in a single base station could save approximately 4,253 kWh of electricity in a year, cutting down electricity bills by RMB0.25/kWh.

Energy-saving technology coverage rate of base stations

**59%**

Energy-saving technology coverage rate of core equipment rooms

**87%**

The self-developed intelligent dual-cycle multi-unit modular equipment room air-conditioning system made full use of natural cold sources, and combined mechanical refrigeration and “fluorine pumps”, improving energy efficiency ratio and reducing carbon emissions by means of modularization, centralization and miniaturization of outdoor units. The self-developed 5G BBU vertical installation frame allowed the air to flow in from the front of the equipment and out from the back, instead of the original arrangement of the air flowing from one side to the other, thus enabling the centralised placement of 5G BBU and the insulation of hot and cold aisles. According to third-party verification, the PUE could be reduced to satisfy the edge DC construction needs.

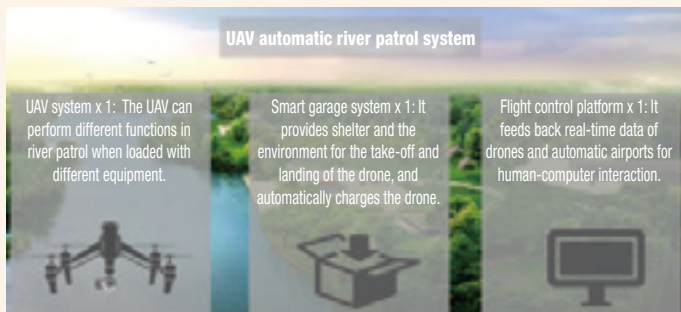
Employing Internet of Things and AI technology, the jointly developed 5G DC load intelligent shutdown equipment and self-developed software platform with proprietary intellectual property rights could intelligently shut down redundant equipment and reduce the energy consumption of main equipment. If a set of 5G system is shut down for eight hours a day, the energy consumption can be reduced by approximately 33%.

The above research and development results have obtained national new utility patents.

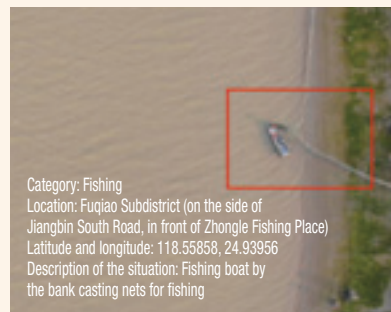
## Promoted green applications

Taking full advantage of 5G, Internet of Things, cloud computing, big data and other technologies, China Unicom created a comprehensive solution for a smart environmental protection system, and developed smart products such as ecological environmental protection and intelligent river chiefs and lake chiefs, thereby contributing to pollution prevention and control, energy conservation and emission reduction.

China Unicom’s Quanzhou branch proactively explored the development of 4G and 5G applications. It built a UAV automatic cruise system, and effectively solved “four types of unlawful acts” in river governance, namely river pollution, illegal closure, illegal occupation and illegal sand mining. The branch was deeply involved in the implementation of environmental protection applications, contributing to the effective implementation of the “River Chief System”.



The composition of the UAV intelligent river patrol system



Service desk video surveillance

## Deepened green operation

Adhering to the notion of green development, and in accordance with the requirements of the state’s *Opinions on Accelerating the Establishment of the System of Green Production and Consumption Regulations and Policies*, China Unicom continuously unleashed the value of factors, optimised resource allocation, built green business outlets, established a green supply chain system, deepened recycling and promoted green consumption and the green transformation of production and operation.

- Building a green distribution network. China Unicom promoted the construction of a digital operational system for business outlets so as to improve operational efficiency. It carried out trials of electronic form-free service outside business outlets, enhanced the compliance of service sign-ups in online channels, and implemented digitalised operation and paperless processing.

- Creating a green supply chain. China Unicom created a Group-wide supply chain system with “one system and one platform”, and implemented Internet-based operation throughout the supply chain. The newly added function of audio and video conferencing enabled the electronic bidding platform to carry out “no meeting” bid evaluation during the epidemic. The Company encouraged bidders to choose energy-saving products with low energy consumption and high energy efficiency so as to minimize environmental pollution.

- Strengthening recycling. China Unicom established an internal bidding mechanism to auction idle materials based on market fair value. Through the clean-up and auction of idle materials, the Company revitalized and re-allocated a total of 45 batches of materials with a total worth of RMB12.33 million. It disposed of RMB733 million of waste materials by auction.

- Revitalizing assets. By broadening asset revitalization channels, upgrading revitalization platform functions, and strengthening post-event evaluation, China Unicom completed 521 instances of inter-provincial revitalization of network assets and resources, revitalizing 19,200 items of assets worth RMB937 million in total and saving RMB134 million in depreciation costs. Its asset utilisation efficiency was further enhanced.

- Promoting green consumption. In order to revitalize the inventory of finished cards and reduce wastage, China Unicom developed the function of “converting finished cards to blank cards” to rewrite finished cards in the inventory, recycling IMSI resources and turning them to ordinary blank cards for reuse. In 2020, 800,000 finished cards were recycled, saving RMB600,000 in card production fees.

Disposed of waste materials worth

**RMB733 million**

## Digitally Ignited the Engine of Technological Innovation to Strengthen Growth Momentum

Optimising Mechanism of Technological Innovation  
Promoting Application of Innovative Technology  
Empowering Digital Transformation of Industries





## DIGITALLY IGNITED THE ENGINE OF TECHNOLOGICAL INNOVATION TO STRENGTHEN GROWTH MOMENTUM

Technology, a powerful tool for a nation, enables a country to become stronger, an enterprise to outperform peers and people to live a better life. As the main force in building a technology superpower, China Unicom takes the responsibility to ensure technology independence and self-improvement. It seized the new opportunities for technological innovation brought by the digital economy, enhanced its own innovation capabilities, and nurtured a flourishing and synergetic innovation ecosystem. It accelerated the transformation of technological innovation achievements into actual productivity, and enriched and expanded new innovative technology products, assisting the government in efficient social governance and serving the digital transformation of numerous industries.

### Measures adopted in 2020

- Optimised technological innovation system, increased research and development investment, strengthened incentives for technological innovation, and expanded cooperation among industries, universities and research institutions.
- Focused on research and innovative applications of core technologies such as 5G, cloud computing, Big Data, Internet of things, blockchain and AI.
- Enhanced proprietary product research and development capability to offer total solutions. Developed industry cooperation ecology to empower digitalisation of industries.

### Actions to be taken in 2021

- To actively strengthen ecological cooperation in technological innovation externally and comprehensively promote the integration of technological innovation into production internally.
- To focus on research on foundation technologies such as cloud computing, Big Data, Internet of things, AI, blockchain and forward-looking application scenarios. To strengthen early-stage research on next-generation network technologies such as computing power network, 6G and quantum communication, and application products such as industrial Internet.
- Focusing on key fields and industries, to build a “platform +application” product system with cloud-network collaboration, digital integration and open capability to provide richer integrated application products for the whole society

## OPTIMISING MECHANISM OF TECHNOLOGICAL INNOVATION

Robust system and mechanism of technological innovation is an important foundation for accelerating the development of technological innovation. China Unicom kept strengthening its innovation awareness, overcame the obstacles of systems and mechanisms, enhanced policy edges and stimulated the energy of innovative development to propel technological innovation and accelerate the digital transformation.

### Improved Technology Management

China Unicom continuously optimised its technological innovation system, strengthened research and development management, stepped up research and development investment, and adopted full-lifecycle management of technological achievements.

- Thoroughly implemented the requirements of the State-owned Assets Supervision and Administration Commission (SASAC) on central state-owned enterprises to increase investment in technological innovation and enhanced the intensity of research and development investment. As at the end of 2020, technological innovation investment amounted to RMB12.28 billion, representing 4.5% of the total revenue.
- Optimised and restructured the technology committee of the head office and promoted the establishment of technology committees at subsidiary companies.
- Clarified the management standard, process and collection requirements of various research and development projects to realise 100% platform management.
- Actively developed technology R&D talent team and explored the acquisition of outstanding external technology R&D talents.
- Systematically carried out the registration, review and management of technological achievements nationwide and established a database of evaluation experts.

### Increased Innovation Incentives

The Company continuously improved the incentive system for technological innovation and increased the incentives for technological innovation. With the maximisation of interests as the goal, it formulated and published incentive policies for technological innovation, which were publicised as broadly as possible through meetings, production of H5 publicity materials, remote consultation, DingTalk and other multi-channel communication forms, so that the technological personnel of the Group can understand the policies and gain confidence. In 2020, the Group awarded technology innovation incentives of RMB45.09 million, double that of the prior year, greatly stimulating the vitality of the technology R&D personnel.

### Expanding R&D Cooperation

The Company actively expanded cooperation among industries, universities and research institutions. It established joint laboratories with colleges and universities, carried out research projects in the fields of Internet of vehicles, optical transmission and new network evolution with renowned universities such as Tsinghua University, Peking University and the Chinese University of Hong Kong as well as research projects in the fields of base station equipment and network system with high-tech companies such as Huawei and ZTE. In 2020, a total of 61 projects were under research and 49 projects were newly declared.

On 30 November 2020, China Unicom held the 2020 Technological Innovation Conference in Beijing, gathering experts and industrial innovation forces from multiple fields to learn from each other and promote the optimal allocation of technology R&D forces and resource sharing. At the meeting, China Unicom entered into cooperation agreements with Renmin University of China, Beijing University of Posts and Telecommunications, Beijing University of Science and Technology and the National Time Service Center of the Chinese Academy of Sciences, setting up joint laboratories in artificial intelligence and Big Data, intelligent open optical network, 5G metallurgical intelligent manufacturing, high-precision ground-based timing system, etc. It held the founding ceremony of “China Unicom Computing Power Network Industry Technology Alliance” with the representatives of the Chinese Academy of Information Technology, the Network Information Center of the Chinese Academy of Sciences, Tsinghua University and industry partners to jointly promote industry development.



## PROMOTING APPLICATION OF INNOVATIVE TECHNOLOGY

China Unicom played its role as an engine of technological innovation among central state-owned enterprises. It bravely acted as the “source” of original technologies and entered untapped technological fields. It accelerated to tap the potential of digital technology and promoted the security and stability of the supply chain.

### Developed New Communication Technology

#### Propelled 5G technology innovation

China Unicom adhered to Standalone (SA) as the ultimate 5G architecture and resolutely built a technologically leading 5G network. It actively propelled the evolution of 5G technology and deployed the first Standalone (SA) networks in the world. It cooperated with chip, terminal and equipment manufacturers to overcome challenges to drive the development of 5G value chain.

- Took the lead in completing three 3GPP standards including 2.1G 50MHz/40MHz large bandwidth. Secured the approval for the refarming of 2.1G frequency band as 5G spectrum, supporting world-leading 5G deployment in 2.1G frequency band.
- Spearheaded technical trials of millimetre wave network in the Winter Olympics use cases.
- Spearheaded and completed tests to decouple 13 5G social cloud micro-sites from existing network 5GC NG interface.
- Created a proprietary 5G intelligent energy-saving platform and 5G base station energy-consumption intelligent control system “integrating wireless technology and AI”.
- Carried out new technology trials, centralised procurement testing and research on key issues of commercial deployment, and completed the first large-scale commercial deployment and operation of 5GC.



China Unicom announced a 5G drone-carried terminal called “Rainbow 1” which was put into use in multiple drone projects, turning Anyang into China Unicom’s 5G ubiquitous low-altitude test base and the Civil Aviation Administration’s drone test base.

#### Propelled the application of quantum communication technology

- Actively carried out research on the application of new technologies such as quantum secure communication architecture, optical fibre transmission and application effect analysis, and implemented a number of applications such as quantum encrypted video conferencing systems on the Jingxiong International pre-commercial quantum encryption trunk line.
- Combined quantum encryption key services and blockchain technology to carry out in-depth research in the fields of digital identity and trusted terminals, and jointly promoted real-world applications in typical industry use cases.

#### Conducted 6G wireless technology pre-research

Completed the first domestic air-space-ground integrated business demonstration and verification, published several white papers on topics such as terahertz, blockchain, and air-space-ground integration, and successfully applied for multiple topics of the 6G national major project.

## Built a Cloud-driven Business Model

Focusing on the new base, new cloud management and new PaaS capabilities and targeting at product capabilities and business scale enhancements, China Unicom vigorously enhanced the carrying capacity and research and development capabilities of the WO Cloud platform, constructed an integrated cloud product system, and achieved solid growth in innovative business.

### Built a WO Cloud support system

The cloud support system adopted the microservice cloud-based architecture of “large middle platform + small front-end” to realise the decoupling between services and products. It had rich and flexible business arrangement capabilities, supporting rapid resource provisioning and full life cycle management. The four platforms of Yunjing, Yunce, Yunjing, and Yunchang support unified management of heterogeneous cloud pools and unified monitoring of resources across the entire network. 38 products have been launched so far.

### Improved WO Cloud product system

The new WO Cloud focused on building a new base, new PaaS, and new cloud management product system to enhance the core capabilities of WO Cloud products and achieve scale development.

In 2020, China Unicom held a WO Cloud new product launch ceremony titled “New WO Cloud, New Base, New Intelligence”, reaching out to more than 5 million people nationwide. It created a PR matrix with 9 self-owned social media accounts centred on Weibo and Weixin, and published a total of 2,173 posts, with a total of more than 480,000 views and more than 1.2 million fans. It published 267 articles with more than 300,000 views. It conducted online campaigns. For example, it held an online “Clouds Gathering and Unbounded Symbiosis” cloud market merchant acquisition conference, and created a “Cloud Market Festival”, which attracted more than 300 application providers and was watched 11,776 times. The influence of WO Cloud brand continued to expand.



## Strengthened Big Data Capabilities

China Unicom accelerated its digital transformation, consolidated its industry-leading data base, significantly improved its Big Data capabilities and formed an “accurate”, “fast”, “comprehensive”, “unified” and “connected” intelligent Big Data system to enable high-quality business development, striving to be a key player in digital China development. In 2020, the Company’s market share in Big Data business remained the highest in the industry.

- Enhanced data asset integration capability. China Unicom has established a hyperscale Big Data cluster governance and data governance system and developed PB-level technical data processing, real-time analysis and model service capabilities to achieve end-to-end full life cycle data security management capabilities. It processed over 200TB of incremental data and undertook over 100,000 processing tasks every day.

- Leveraging the advantages of centralised Big Data, China Unicom launched a user roaming location query API within 3 days to support “pandemic prevention and control travel history assistant” and “communication Big Data travel history card”. It processed a total of more than 755 million queries, serving 8.35 billion user trails across the network.

- Enriched product capabilities. Building on big data, artificial intelligence and blockchain technology and with the goal of serving the digital transformation of government and enterprise customers, China Unicom formed a product matrix covering data application services, data technology services, artificial intelligence and blockchain and focusing on key industries including government affairs, finance, cultural and tourism, transportation and others. There were 8 ten-million-class products.

- Consolidated proprietary research and development capabilities. China Unicom increased the proportion of proprietary research and development from nearly 0 to 70%, and achieved full autonomy in computing power allocation, data assets, data models, application development, automatic operation and maintenance and data security.

**No. 1**  
in the telecommunications industry  
in the 2020 China Big Data Enterprise Ranking

China Unicom Yunnan branch fully leveraged the advantages of its Big Data capabilities, used demographics Big Data obtained from mobile phone signalling to support the natural resources and land planning of Yunnan Province, facilitating the comprehensive digitisation of land and space and the full coverage of human-land factors. It provided powerful support for the Yunnan provincial government’s policy-making in the “14th Five-Year Plan” of Digital Yunnan planning and development.



Population Big Data System for Land and Space Planning of Yunnan Provincial Department of Natural Resources

China Unicom signed cooperation agreements with four Big Data ecosystem partners including Duxiaoman Technology (Beijing) Co., Ltd. and Hangzhou DT Dream Technology Co., Ltd. to jointly explore product development and application services in financial risk control modeling, etc.

## Enhanced the Value of IoT

In the era of intelligent connection of everything, China Unicom is committed to becoming a leader in “AIoT” empowering thousands of industries. It enhanced its core capabilities in platforms, networks, ecology, applications, etc., and offered integrated solutions and services including connectivity, applications, and terminals. It joined forces with upstream and downstream partners in the industry chain to jointly develop a new 5G industry ecology and comprehensively empower the digital transformation and upgrade of the industry.

Ranked **7th**  
among the world's top 500  
IoT enterprises in 2020

### Strengthened network construction

- Built a 5G IoT core private network classified by people and things, with the ability to support 5G IoT business.
- Diverted and balanced traffic according to IoT zones to improve network resource utilisation and enhance user perception.
- Fully supported new functions such as VoLTE, directional voice, and directional text messages.

### Built platform capabilities

- The Company's self-developed connection management platform supported innovative services such as 5G, eSIM, public Internet of Things, and MVNO and carried more than 80 million connections.
- The Company's self-developing device management platform supported 32 standard object models and 88 API interfaces such as smart street light, hydrological monitoring, industrial inverters and edge gateways in the field of smart city and industrial Internet, underpinning the rapid development of SaaS applications in the upper stack.

### Improved product system

Released more than 20 standardised non-access IoT products around smart city, industrial Internet, 5G industry terminals, smart energy and other fields. Among them, we developed 7 proprietary products including Yanfei Cat.1 module and Yanfei smoke sensor. The Industrial Internet AIoT platform was rated as the only dual cross-level industrial Internet platform in Jiangsu Province in 2020.

China Unicom Shandong branch made use of NB-IoT and cloud platform technologies to develop and deploy a smart energy Big Data service system and intelligent high-precision pipe network monitoring product. It enabled comprehensive online monitoring of heating pipe networks and provided data support for smart heating to achieve low-carbon energy conservation objectives. Among the 7 power supply stations and 1,500 units in the initial pilot programme, more than RMB1.9 million was saved in the heating season of 2019–2020 compared with the previous heating season, and the overall user complaint rate was reduced by 25%.



### Built industry ecosystem

The Company developed its IoT industry alliance with an open sharing philosophy. It added 91 new partners in the year from key industries such as consumer electronics, smart healthcare, and smart city, thereby broadly aggregating industry ecological resources to accelerate the development of an intelligent IoT ecosystem.

In June 2020, China Unicom held the “Enabling New Infrastructure for the New Future of IoT — 5G + AIoT Summit for Boosting Industry Digital Transformation, Innovation and Development”. In cooperation with more than a dozen industry partners such as Unisoc (Shanghai) and MeiG Smart, it published the first Cat.1 white paper in the IoT industry to promote the development of the IoT industry.



## Innovated on Blockchain Application

China Unicom regards blockchain as an important field for the breakthrough of proprietary innovation of core technology. It accelerated the integration between blockchain technology and innovative development of industry, and provided credible infrastructure for the development of the digital economy in the 5G era.

### Built platform capabilities

The Company announced the “China Unicom Chain”, a unified carrying platform for blockchain products and capabilities. It developed a blockchain capability base with “1” BaaS platform and “8” generic service modules and created “N” innovative applications powered by blockchains to provide integrated infrastructure services of cloud, network and chain for the digital transformation of government and enterprise customers.

### Continued to empower the nation

- Developed the country’s first blockchain-based enterprise work resumption reporting platform, which was tested in 15 provinces and cities across the country and served more than 300 companies.
- Blockchain-based test instruments and data management system were deployed and used in scale at China Unicom’s Hebei branch, with more than 100 instruments and 200 users registered in the chain.
- The Company was the first in the industry to develop a spectrum blockchain test system and launch a pilot run on the live network. It won the “ICT China 2020 Best Excellent Solution Award”.

China Unicom Guangzhou branch and Guangzhou Judicial Bureau jointly created smart judicial applications such as a blockchain judicial evidence platform and social security management to make judicial procedures such as collection and retrieval of evidence immutable and irrefutable, which reduced the difficulty of electronic evidence fixation and authentication and improved judicial efficiency and judicial service quality effectively. Currently, the Guangzhou “Public Law Chain” has been operating stably for nearly one year, with a block height of 69,074 and a total of 120,198 records.



Press conference for the launch of “Guangzhou Public Law Chain”

## Accelerated AI Innovation and Empowerment

China Unicom is committed to building intelligent infrastructure and product services and driving the comprehensive upgrade and restructuring of networks and products through artificial intelligence technology.

### Promoted intelligent network transformation

- Developed network AI test beds and MR intelligent construction and maintenance assistant systems, etc., and defined measurable classification of autonomous driving network.
- Constructed a prototype of the digital twin model of the broadband access network to achieve an integrated and Internet-oriented operating model of access network planning, construction, maintenance and operation.
- Designed and developed a proprietary IP network routing simulation system and designed an architecture prototype of the network digital twin system.
- Built a digital twin system in the National New District (Xiong’an).
- Held 2020AIIA Cup Artificial Intelligence and 5G Network Application Competition and ITU AI/ML in 5G Challenge and Network AI Forum.

### Offered AI capabilities and applications

- Opened up the Company’s capabilities in intelligent network, perception analysis, AI algorithm model, application services, etc. to reshape the smart city operating model.
- Created applications such as new effective urban governance, new convenient public services, new industry upgrade, and new livable and green ecology to reshape the experience of citizens.

## Actively Developed Standards and Regulations

China Unicom actively participates in international and domestic industry standard organisations and standard formulation, covering 5G, cloud computing, Big Data, IoT, artificial intelligence, edge computing, blockchain, information security, etc. The Company successfully promoted the standardisation of its cutting-edge research and development results, enhancing its influence in the industry and bargaining power in the international cyberspace.

• China Unicom had severed for more than 100 positions in ITU-T, 3GPP, GSMA, Linux Foundation, OpenStack and other major international standards organisations and open sources communities, including more than 20 key management positions. It participated in the China Communications Standards Association, a domestic communications industry standardisation organisation, and became a major member unit.

• Currently, China Unicom leads and participates in nearly 1,000 ongoing research projects in CCSA. It led the establishment of 37 new international standards and the release of 23 international standards. The YIG project incubated by WO Cloud’s production system was accepted as a core project by the Linux SODA Foundation, achieving breakthrough in projects led by the Company in the international open source communities.

• China Unicom-led project “5G Co-build and Co-share Key Technology Research and Industrial Application” won the first prize of China Institute of Communications.

Responsibility performance indicators	2020
International standard documents (article)	467
Industry standards (item)	295
Number of patents applied (item)	1,734
Number of patents granted (item)	518

## EMPOWERING DIGITAL TRANSFORMATION OF INDUSTRIES

China Unicom actively integrated modern digital technology into various industries and empowered the digital upgrade of industries with technological innovation. It continued to promote advanced industry foundation and modernisation of the value chain, and pivoted on innovation to promote high-quality development.

### Deployment in Smart City

With an objective to improve the quality and efficiency of cities, China Unicom empowered three major areas, namely urban governance, social governance and economic governance, by building a smart data brain engine. Aiming to address people’s livelihood issues and echo the national strategy to expand domestic demand, the Company empowered the modernisation of urban governance to enhance the level of intelligent and refined governance.



Screenshot of China Unicom’s Smart Data Brain Engine

China Unicom Fujian branch self-developed the “Diversified Solution Platform for Conflicts and Disputes-Huihejie”, which rationally allocated various social dispute resolution resources and effectively improved the social governance system of the grassroots and modernised governance capabilities with the new model of “Internet + diversified governance”. In 2020, the Diversified Solution Platform for Conflicts and Disputes was put into use successively in Changle District Political and Legal Committee, Dongjiekou Police Station, Putian Municipal Bureau of Justice and other places. The number of users exceeded 10,000, and more than 1,000 conflicts and disputes were resolved, effectively ensuring social harmony and stability.



The first “Diversified Solution Platform for Conflicts and Disputes-Huihejie” in Fujian Province was officially unveiled

### Developed Digital Government

China Unicom leveraged new technologies such as 5G and AI to build a digital government affairs platform so as to improve the government’s operating efficiency and decision-making capabilities, enhance the perception of citizens and enterprises and help the development of digital government.

China Unicom Chizhou branch fully implemented the strategy of “Embracing the Government”. It signed strategic cooperation agreements with all county and district governments within the city, put itself in the government’s shoes and catered to its needs. Focusing on “platform + application + operation” projects, the branch solved the government’s pain points through information technology and helped to modernise the governance capabilities of governments at all levels. It became the vanguard of the development of Chizhou’s digital government.



Launching Ceremony of Chizhou Smart CPPCC Platform

Focusing on the core function of “comprehensive application of government information services and information and data”, China Unicom Liaoning branch led the development and maintenance of the “Liaoning Province E-government Cloud” project. Currently, the project is operating 768 non-confidential government information systems for 78 commissions, offices, departments and bureaux, and utilises 46,000 VCPU cores, 153T memory and 6PB storage to provide intellectual support and operational assurance for “Building a Digital Liaoning and Developing a Digital Government”.

### Pushed forward Smart Ecology

With the goal of “green and low-carbon development fostering environmental quality improvement”, China Unicom leverages its own informatised, digital, and intelligent means to provide three major categories of product solutions, namely smart ecology, smart housing and construction, and smart water conservancy. It helps “China’s ecological environment fundamentally improve” in 2035 and achieve the prospect of “green water and green mountains”.

China Unicom Henan branch built a smart water comprehensive management service platform, a smart sand mining comprehensive supervision service platform and a smoke monitoring platform to help prevent and control pollution holistically.



Smart water comprehensive management service platform of Jia County



Smart sand mining comprehensive supervision service platform

## Built Smart Factories

Based on 5G+ Industrial Edge Cloud + AI, China Unicom launched the “5G+ Industrial Internet Action Plan” and the “5G+ Industrial Internet Application Scenario Joint Innovation Plan” to create “fully 5G-connected factories” for large enterprises. For small and medium-sized manufacturing enterprises, with the mission of enabling the digital transformation of industrial clusters and enterprises, the Company built the “Yundee Industrial Internet Platform” to promote the upgrade of China’s “intelligent manufacturing”.

China Unicom Xuzhou branch and Xugong Group built the domestic construction machinery industry’s first smart park private 5G SA network combining end-to-end network slicing and edge computing. It had full-chain connectivity from signal transmission, control, design to production and circulation, and integrated the application needs of enterprises along the full value chain from 5G+ smart research and development, 5G+ smart manufacturing to 5G+ marketing services, 5G+ smart parks and 5G+ product construction. All factors including people, vehicles, machinery and equipment, production materials and upstream and downstream resources in the industrial chain were connected, facilitating Xugong Group’s smart transformation.

## Innovated on Smart Medical Care

China Unicom actively explored the application of 5G in various scenarios such as smart hospitals, telemedicine, smart elderly care and consumer healthcare, etc. to improve medical service quality comprehensively and offer support to first aid, clinical diagnosis and treatment, medical education, graded diagnosis and treatment and hospital management, etc. facilitating the development of healthy China.



“Internet + Health Poverty Alleviation” remote consultation by China Unicom Henan branch



Remote visit at ICU ward by China Unicom Fuzhou branch

China Unicom Jiangxi branch built a 5G operating room + VR remote teaching system for the Affiliated Hospital of Jiangxi University of Traditional Chinese Medicine to enable various services such as surgical demonstration, surgical guidance, surgical observation and medical education, etc., and improve the hospital’s surgical demonstration and its management of medical education and training through real-time, two-way, medical-quality video.

## Supported Smart Culture and Tourism

Echoing tourism informatisation policies and industry needs, China Unicom created a series of smart culture and tourism products covering cultural and tourism management departments, tourist attractions, museums, etc. It served 17 provincial cultural and tourism departments, 116 municipal and county cultural and tourism bureaux and more than 100 scenic spots and museums, and developed smart tourism platforms for 34 total tourism demonstration areas. It has become a smart technology service provider with great reputation and brand influence in the culture and tourism field.

Aiming to develop “intelligent tours of Hailing Island” and achieve “tourists experience freedom and government management services everywhere”, China Unicom Guangdong Yangjiang branch strived to build Hailing Island’s culture and tourism informatisation base, Big Data centre, comprehensive management platform, comprehensive marketing platform, comprehensive service platform, demonstration and guiding standards and comprehensive support system to promote the transformation and upgrade of Yangjiang’s tourism industry.



## Digitally Promoted Talent Transformation and Development to Reinforce Passion

Optimising Talent Pipelines and Dynamics  
Strengthening and Safeguarding Employees'  
Rights and Interests  
Caring for the Continuous Growth of Employees



# DIGITALLY PROMOTED TALENT TRANSFORMATION AND DEVELOPMENT TO REINFORCE PASSION

The Company perceives talents as the primary resources and innovation as the primary motivation. China Unicom has always attached great importance to the cultivation of talents and deeply implementing talent development. With the goals serving the development of both the corporate and staff, the Company restructured its staff team amidst digital transformation and focused on cultivating a group of professionals with true technological innovation expertise and leading abilities to cope with industry competition. Meanwhile, the Company effectively safeguarded the legitimate rights and interests of employees, and encouraged them to actively participate in corporate management, letting them share the results of reform development and growing with the Company.

## Measures adopted in 2020

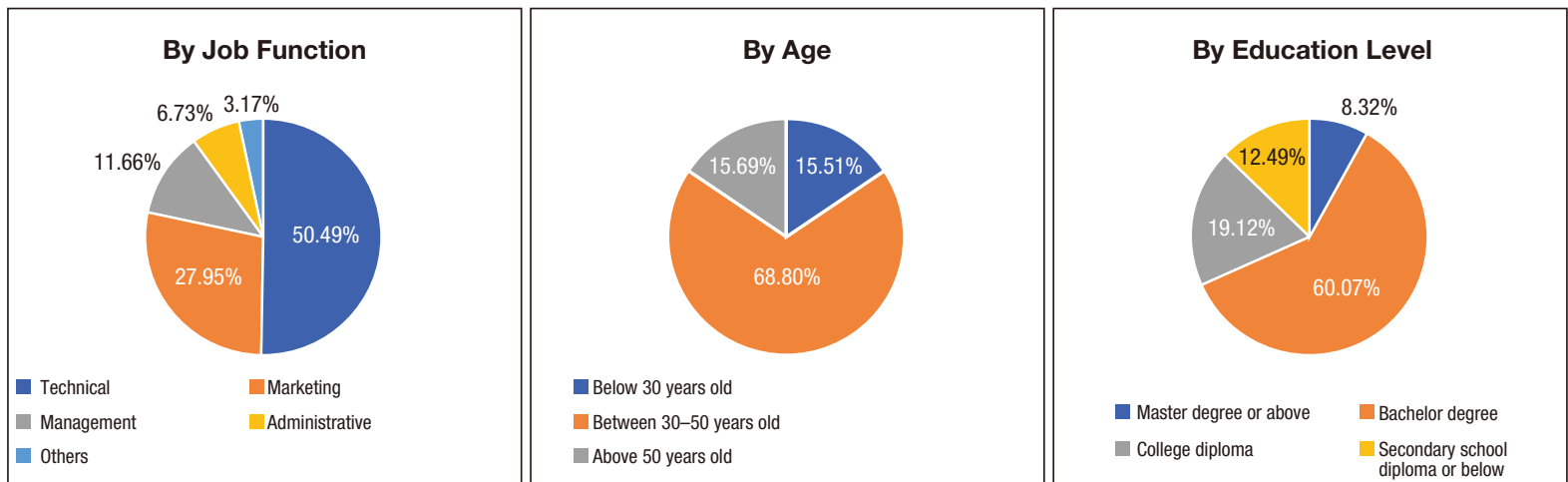
- Building a four-level talent echelon of 18,000 staff and over 7,000 professionals in innovation businesses.
- Constructing a digital transformation training platform and carrying out 8 first- and second-class labor and skill competitions, as well as 23 third-class skill competitions at Group level.
- Building a warm and harmonious labor relationship, practically safeguarding the rights and interests of the employees, and caring for the physical and mental health of employees with a view to enhancing their sense of fulfilment.

## Actions to be taken in 2021

- To further improve the mechanism safeguarding the rights and interests of the employees, maintaining a medium for employees' complaint, and properly handling disputes involving employees' rights.
- To continue implementing the promotion and incentive system, further optimising the four-level talent management system and to create broader room for employees development.
- To continue to promote the implementation of the employee care policy, strengthening standardised management, and promoting the systemisation of employee care while earnestly caring for employees and solving their difficulties.

## OPTIMISING TALENT PIPELINES AND DYNAMICS

China Unicom has adhered to the people-oriented principle, treasures the value of each employee and attaches importance to ability building and career development of the employees. The Company is committed to improving the professional talent management system, smoothing the staff internal and external cycle and intensifying talent introduction, in order to create a high-level talent training system and to achieve each employee's career development, promoting the growth of employees through mutual exchange.



Total number of employees	Employees in Mainland China	Employees in Hong Kong, Macau and Taiwan	Employees overseas	
242,121	241,245	603	273	
New recruits	Gender Distribution (Male/ Female)	Proportion of ethnic minority employees (%)	Number of resigned employees	Temporary market-oriented employees in Mainland China
10,652	1.54:1	6.72	5,228	12,581

## Optimising the Talent Team

**Improving the professional talent management system.** The Company has steadily promoted the construction of various core talent echelon, and building a four-level echelon of leaders, experts, backbones and cutting-edge talents in 14 major professions including IT, network, R&D, government and enterprise, marketing and etc. Among which, the number of technical professionals in IT, network and R&D accounted for more than 50%, implementing the dual channels for professional talent development.

**Enhancing talents in the innovative field.** The Company has regularly carried out market-oriented introduction of high-end talents, and continuously and strongly introduce high-end talents in cloud computing, Big Data, IoT, AI, security and other fields based on the principle of “three open” with open posts, open salaries and open sources.

Four-level talent echelon including  
**18,000**  
professionals

Turnover rate of  
**14.7%**

Accumulated total of  
**3**  
high-end talents introduced at the headquarters

Accumulated nearly  
**30**  
high-end talents introduced at branches subsidiaries

More than  
**7,000**  
professionals in the innovative fields

## Reconstructing Training System

**Strengthening the construction of training system.** The Company clearly stated the key contents and training hours of education and training for cadres and employees at all levels, formulated targeted training programmes and key training projects through various ways such as online and offline, internal and external certification, and effectively promoted the implementation of the Group's education and training system in all units and professional fields.

**Building a professional competence standard system.** The Company actively implemented the requirements for the reform of the Group's line operation organisation system, established staff professional competence standards, position certification standards and knowledge and skills requirements, and orderly promoted professional talent certification and frontline position skills certification. Throughout the year, nearly 30 professional competence certification standards were completed, and nearly 110,000 employees obtained the certification.

**Encouraging participation in continuing on-the-job education.** The Company issued the "Notice on Encouraging Employees to Participate in Continuing On-the-job Education" to state on the relevant definitions and scopes for management norms and incentive methods of employees' continuing on-the-job education. A total of more than 11,000 employees from various units obtained on-the-job education (degrees) and qualification certificates.

**Promoting the apprenticeship system in professional fields.** The Company issued the "Notice on Establishing China Unicom's Apprenticeship System". By tapping the value of internal talents from various units, combining the needs of professional requirements, and selecting and matching with professional instructors, all units have made the apprenticeship system an important way for employees to cultivate their digital transformation capabilities. A total of more than 12,000 "apprenticeship" instructors were recognised in the year.

**Expanding the online platform training channels.** The Company made full use of various online education platform resources to ensure uninterrupted education and training during the pandemic, built a live broadcast room at the headquarters, organised 172 live training sessions, and received cumulative views of more than 200,000. The Company also carried out the "WO Sharing" live class and launched 110 courses throughout the year, receiving a count of 2 million.

**Accelerating the transformation of the talent structure.** The Company continued to develop IT/DT talent training and conduct in-depth training for no less than one month. The Company optimised and formed 25 professional competence standards including IT, government and enterprise innovation, organised innovation ability certification exam and around 24,000 employees across the country have passed the exams. Focusing on building a team of Smart network engineers, the Company has formed a team of 15,000 full-time and part-time Smart network engineers through dynamic empowerment such as clear team planning and implementation of training certification.

Target participants	Training topics
All cadres of the Group	More than 11,000 sessions targeting all cadres of the Group were arranged, with more than 1.25 million participants joined the related training.
Management	Professional competence training for different grades and categories was carried out, and a total of 5 sessions of rotation training courses for managers were organised and implemented, with a total of more than 1,300 employees participated in the training; Two phases of outstanding management talent training projects for digital transformation were implemented with the focus on comprehensive digital transformation; 33 managers were selected to participate in training and professional competence training.
Outstanding young cadres	The Autumn advanced training programme for young and middle-aged cadres was held, with 40 outstanding young cadres participated in the theoretical study and competence training.
Innovative and professional talents	38 training sessions of the "Engine" and "Accelerator" programmes focusing on IT and government-enterprise innovative talents were carried out to continuously develop government-enterprise innovation capabilities and IT ability certification, and a total of 24,000 employees passed the exams; The Company accelerated the training of professional talents' transformation ability and job ability, coordinated and carried out more than 90,000 training sessions for various professional personnel and talents, which trained 10.6 million employees in total.
Front-line employees	Approximately 68,000 training sessions were provided for front-line employees, with a total of 3.06 million participants; Targeting to focus on key front-line positions, the number of employees certified throughout the year reached 69,000.

Training rate of senior management  
**100%**

Average training time  
**167** hours

Training rate of middle management  
**99.4%**

Average training time  
**98** hours

Training rate of average employees  
**98.5%**

Average training time  
**88** hours



Training courses for new employees

**RMB364.86 million**  
was invested in employee training

**10.638 million**  
employees/times  
participated in the training

## Building a Training Platform

China Unicom strives to build a talent team and a training platform for its digital transformation. The Company actively carried out various skill competitions such as 5G innovative applications, Big Data innovation, solutions, and Smart Winter Olympics to continuously improve the technical ability level of the employees.

**Carrying out skill competitions with precise positioning.** Focusing on the new demands, new tasks and new requirements for employees' skills in comprehensive digital transformation, carefully-planned skill competitions were arranged to achieve "vibrant resonance" with the core work, effectively promoting the transformation of knowledge and capabilities in the workforce. A total of 30 skill competitions at the Group were held throughout the year, with a total of more than 400,000 accumulated participants, achieving the highest ever record for both the number of participants and participation rate.

**Carrying out labor competition based on positions.** Taking labor competition as the mean, the Company guided the employees to make contributions based on their positions, and to promote sound and rapid development of the Company through competitions of "comparing benefits, contributions, effects, innovations, and services". Closely focusing on business objectives, the Company organised a labor competition with the theme of promoting revenue, reducing costs and increasing efficiency with the theme to promote comprehensive digital transformation, a total of 216,000 employees participated in the competition, and directly or indirectly created benefits of RMB2.33 billion.

8

first- and second-class labor and skill competitions at the Group level were held

23

third-class skill competitions at the Group level were held



China Unicom held cloud-led migration skill competition



China Unicom held network AI skill competition



China Unicom held industry solution marketing skill competition



Heilongjiang Unicom held optical cable maintenance skill competition



Hunan Unicom held customer service experience skill competition

## STRENGTHENING AND SAFEGUARDING EMPLOYEES' RIGHTS AND INTERESTS

China Unicom regards its employees as an important asset for the Company's development, always respects its employees, safeguards their legitimate rights and interests, and serves wholeheartedly of the employees, so as to promote a "win-win" situation in which employees and the Company grow together through market-oriented reform of human resources, and continuously enhances the employees' sense of fulfilment and satisfaction.

### Adhering to fair employment

- The Company acts in strict compliance with the "Labor Law of the PRC", "Labor Contract Law of the PRC", "Provisions on the Prohibition of Using Child Labor" and other relevant regulations, enters into an employment contract with 100% of its employees, and implements the dismissal policy in accordance with the relevant national requirements. The entire Group has achieved full coverage of collective contracts, and some branches and subsidiaries have signed special contracts such as "Collective Contract for Protection of Female Employees' Rights and Interests" and "Collective Contract for Wage Negotiation" to effectively safeguard the legitimate rights and interests of the employees.

- According to the "Interim Provisions on Labor Dispatch", the Company has continuously promoted employment optimisation and standardised management, implemented regular performance and career development appraisal for 100% of its employees, adopted the policies such as equal pay for equal work in accordance with national requirements, resulting in growing employee satisfaction.

- According to the "Employee Recruitment Management Measures" and "Employee Promotion Incentive Guiding Opinions" and other regulations, in the process of recruitment and promotion, the Company strictly prohibits any discrimination against employees in terms of age, gender, etc., and strictly prohibits the use of child labor and forced labor. Measures taken include adopting strict inspection and control procedures during the selection and recruitment process and training the main contractors who provide manpower or services. There was no discrimination case in 2020.

- The Company has implemented the "employment stabilisation" work deployment and placed the employment of college graduates as the top priority. The Group's 2021 graduate recruitment plan will increase by 13% year-on-year; enhancing targeted employment assistance and providing special positions for Tibet and Xinjiang, and also relaxing the employment requirements for Hubei graduates.

### Defending democratic rights

- The Company maintains channels for employees' complaints. The Group has established labor dispute mediation organisations at all levels, and mediated and handled more than 90 labor disputes, building a harmonious labor relationship.

- Relevant national regulations on working hours management have been implemented, strictly enforcing the special working hour declaration system to protect employees' rights to take rest and vacation. A paid leave system has also been implemented to protect the legal rights of female employees, and reserving job opportunities for all female employees after maternity leave.

- The Company has carried out independent audits on human resources policies and procedures, proactively identifying risks of violations, conducting immediate investigation and follow-up on violations and non-compliance issues, and taking timely remedial measures.

### Strengthening positive incentives

- National policies and regulations on social insurance, housing provident fund, enterprise annuity, and etc. were strictly implemented, carrying out health examination, wellness lectures, critical disease insurance and other work for employees, so as to continuously improving the employee health protection system.

- The management mechanism of total compensation within the Group had been optimized, benefitting from the bonus of the mixed-ownership reform. The labor cost allocation standard was improved for the subsidiaries and branches and persistent with the incremental incentive sharing mechanism, consistently promoting evaluation adjustment on existing performance while adhering to achieving a coordinated increase in labor costs, returns and efficiency. Labor costs increased over 10% year-on-year. Perfecting the long-term incentive scheme mechanism and optimising a flexible welfare system, employees' sense of fulfilment was further enhanced.

- Breaking the "egalitarianism" salary distribution, a comprehensive incentive reporting system was launched and customised annual salary reports for employees. The Company also established a system of reporting on the workforce deployment to the staff representatives, disclosing the development and implementation of human resources policies, as well as maintaining open channels for information communication.

## CARING FOR THE CONTINUOUS GROWTH OF EMPLOYEES

China Unicom encourages employees to carry forward the spirit of "ownership" and to provide advices and suggestions to the Group. Adhering to the thought of serving the employees, the Company thoroughly walked the miles to get in-depth understanding on what the grassroots employees think and want, and continuously innovated various measures to serving them and assisting them to have a work-life balance. Through creating an efficient, relaxed and caring working atmosphere for the employees, it has enhanced employees' sense of belonging, security and ownership to the Company.

## Employee Participation in Management

Taking the implementation of 20 measures for the staff development as the starting point, China Unicom has coordinated and promoted the three-in-one enterprise democratic management of “staff representative assembly, open corporate affairs, and employees’ advices and suggestions”, to effectively protect the vital interests of employees and their proactivity to participate in corporate management, which encourage employees to contribute wisdom to the development of the Company.

- More than 560 staff representative assemblies were held within the Group throughout the year, more than 1,770 items were reviewed at the provincial company level, more than 14,000 items were reviewed by subsidiaries and branch companies, and more than 3,230 various proposals were submitted.
- The leadership team of all units continuously strengthened the awareness of open corporate affairs, established and improved the corporate affairs disclosure system and mechanism, and continued to promote the disclosure of corporate affairs to the front line. More than 3,300 items were made public throughout the year, achieving transparency for employees.
- The channels and methods for employees to make suggestions and advices further broadened to strengthen the collection and adoption of public opinions through various effective activities such as “Online Meeting with General Manager”. More than 150 sessions of “Online Meeting with General Manager” were held throughout the year.
- Leveraging on the advantages of the “all endeavors for three purposes” discussion platform, employee representatives proposed to build a “Green Channel”, which accumulatively put forward more than 4,860 effective suggestions, with an overall acceptance rate of 32.6%.

**3,725**

issues generally reported and concerned by the employees were solved in 2020

**295,000**

employees benefited



The 8th meeting of the second session of employee representative assembly at China Unicom



Chairman Wang Xiaochu discussed with grassroots representatives at the employee representative assembly

## Improving Services for Employee

### Caring for employees’ children

- To alleviate the concern for the employees who are the parents of “candidates for examinations” and for them to balance family and work, the system of paid companion leave for employees whose children are enrolled in the high school and college entrance examination has been implemented. 11,085 people in the Group have benefited, and the companion leave rate reached 91%.
- Building a “U-choice” platform for employees’ children who will have the college entrance examination, providing guidance to fill in the applications. Through accurate analysis of Big Data, the platform guides candidates to fill in their priority choices according to their scores, ratings and interests. A total of 3,700 employees who are parents of candidates have been assisted to open accounts and provided services nationwide.



Zhejiang Unicom launched an activity to greet employees whose children were admitted to college in 2020, sending a deep blessing from the Company

Special caring custody classes were been set up under the pandemic. Sichuan and Shandong branch companies carried out online cloud hosting classes while Guizhou branch company held summer camp, and Jiangsu branch company organised parent-child interaction activities of “vegetable picking” and “emergency communication knowledge popularization”, and meanwhile Zhejiang branch company arranged “small class summer nursery” in the form of 3–5 people on each county basis. In 2020, 146 classes were conducted nationwide, serving more than 5,000 employees’ children. Of which, six provinces had held more than 10 classes.



Guizhou Unicom conducted military summer camp for hosting its employees’ children during the summer



Henan Hebi Unicom organised summer nursery class

### Driving the construction of the “Five Small”

China Unicom has set up a special fund for the construction of “Five Small” to improve the working environment for its employees. In 2020, China Unicom provided subsidy of RMB4 million for 37 projects at 17 branch companies, completed the improvement work of 3,500 sub-divided fundamental units, and invested more than RMB70 million.

Henan Unicom gradually formed a unified intensive, refined and specialised management method comprising provinces, cities, counties and branches by building a “Five Small” asset management platform, minimizing asset loss, reducing input costs, increasing investment returns, and improving management quality and efficiency.

Fujian Unicom set up an exclusive “health cabin” in cities, counties and grid units to provide free health checking and consultation for employees, carry out health guidance to lead employees to “manage their own health”, and providing convenient, timely and warm experience for employees.

### Preventing heatstroke and offering cooling

To further strengthen the care for employees who work under high temperature, branch companies at all levels have formulated heatstroke prevention and cooling policies according to local conditions and carried out various cooling activities in the summer.

The management of Henan, Inner Mongolia, Sichuan, Jilin, Zhejiang and other branch companies visited the front-line to show care for working under high temperature, as well as sending heatstroke prevention and cooling supplies to the front-line employees, while praising the employees’ working spirit for their duties during the high temperature, which greatly encouraged the front-line employees.



Zhuzhou Unicom held watermelon-eating competition for front-line employees during the hot summer

### Paying attention to the mental health of employees

The trade union of the Group has been relying on the platform of Employee’s Home to carry out various online psychological care activities, such as live video class, on-site consultation, parent-child column, and etc. More than 120,000 people visited the mental health month webpage of Employee’s Home platform, and 21,281 people viewed the psychological care courses.

The trade union of the headquarters, Shanghai branch and Chongqing Branch carried out a variety of offline activities, including polaroid, oh card, massage, sand art, psychological games, and etc. to help employees improve their psychological status and pay attention to mental health.

Chongqing Branch carried out a number of lectures on “Employee Assistance Programme (EAP) Famous Teacher Seminar”, “EAP Famous Doctor Seminar” and “EAP Famous Psychologist Seminar”, establishing an EAP service brand project.

### Caring for female employees

To establish and publicise the model of advanced female employees who are responsible for pioneering work, playing as a leading role, the Company carried out the Group-level selection and commendation activities of “heroines’ civilised position” and “heroines’ meritorious model”, which greatly stimulated the passion of most female employees to embrace their jobs, striving for being top-notch, hardworking, and be bold in innovation.

All levels of the branch offices have provided caring service to all female employees. Through Internet + trade union, the Company actively carried out activities such as female healthcare lectures, training courses, talent shows to push forward the implementation of policies including “Mothers’ Station” and “Expectant Mother-only Parking Spaces”, while also widely holding lectures on the protection of female rights and interests and marriage law forum. These initiatives demonstrated the Company’s care to every female employee, also with supports such as female-oriented health insurance, special health check-ups for female employees and setting up breastfeeding lounges.

### Ensuring Production Safety

The Company attaches great importance to production safety. In rigorous implementation of the “Production Safety Law of the People’s Republic of China”, the Company has developed a long-term mechanism for production safety, and strengthened the system concerning the primary responsibility of branches and subsidiaries at all levels for their own production safety, and the responsibility of management members at all levels and the responsibility of all employees for production safety. Five Group-level safety management rules and regulations were enhanced, incorporated work safety into the rolling planning of each enterprise and specialty, improved the safety supervision mechanism and personnel guarantee, and comprehensively implemented work safety. It is required to strengthen the safety training for new employees, making them to understand the production characteristics and main hazard factors of the position, be familiar with the use of health facilities and protective equipment, and strictly implemented the requirements for special position with certificates. During the year, there was no safety incident involving casualties.

**93**

training sessions held on production safety

**100%**

coverage on production safety training



Yanshi Unicom organised fire safety training

### Diversifying Cultural and Sports Activities

China Unicom actively organised various forms of cultural and sports activities and enriched the cultural and sports life of the employees, while enhancing the team’s coherency and competitiveness, and showing the spirit of teamwork and the striving attitude.

### Helping Employees in Need

In accordance with the requirements of “covering the bottom line, weaving a dense network, and building a mechanism”, China Unicom has established a mutual complementary assistance mechanism of archives of employees in needs, insurance assistance for major diseases, and mutual aid funds for employees. In 2020, the Company established an online file management platform for employees in needs, realising the electronic dynamic management of the whole process of filing, helping and poverty alleviation. The Company has continuously expanded the types and categories of critical illness insurance for employees, and constantly increased the coverage. In 2020, a total of 5,498 people were being assisted and RMB64.45 million of compensation was paid out. 25 provinces have set up caring aid fund, and the scope of protection has been further extended to form a “Trinity” assistance system of critical illness insurance, mutual aid fund and supplementary medical care.

**RMB78.80 million**

invested in aiding employees in need

**RMB42.59 million**

invested in consolation activities

## Digitally Built a Mutually Beneficial and Win-win Ecosystem to Expand Cooperation

Cooperating with peers for win-win development

Pushing forward in-depth industry cooperation

Building a digital innovation ecosystem





# DIGITALLY BUILT A MUTUALLY BENEFICIAL AND WIN-WIN ECOSYSTEM TO EXPAND COOPERATION

Seeking mutual benefit and win-win results through partnership and cooperation seems natural to the pattern of economic laws and social development. Under the new circumstance where global digital transformation accelerated, China Unicom continuously enhanced the cooperation with industry peers, strategic investors, Internet companies and value chain partners, pushed forward the industry collaborative development and network “co-build co-share”, driving the optimization and upgrade of the value chain and supply chain, as well as the new innovative ecosystem under the booming digital age, all together promoted the living quality of the people and elevated the development and quality of a Smart society.

## Measure adopted in 2020

- More efforts invested in constructing an industry ecology. By deepening the network “co-build, co-share & co-maintain”, an accumulated 380,000 5G co-share base station were in use, saving more than RMB76 billion in capital expenditure.
- China Unicom brought along collaborative development of upstream and downstream partners in the value chain including equipment suppliers, terminal suppliers, channel partners, and virtual operators.
- Innovative cooperation was reinforced in digital consumption, industrial digitization and capital with strategic investors and leading enterprises in the industry.

## Actions to be taken in 2021

- To steadily push forward the 5G network “co-build co share” and to explore sharing one single 4G network in rural and indoor area respectively.
- To drive upstream and downstream partners in the value chain to fulfill social responsibilities.
- To thoroughly explore 5G business cooperation models, expanding the new ecosystem of platform aggregation, and building a digital consumption ecosystem.
- To further deepen capital operation and accelerate to improve the shortcomings of core capabilities in the innovation field.

## Cooperating with peers for win-win development

China Unicom upheld the philosophy of win-win cooperation for development, continuously expanded the depth and breadth of cooperation with operator peers, and took important steps to advance the construction of industry ecosystem and the network “co-build co-share”, thus vigorously boosted the sustainable and healthy development of the industry, cyber superpower and development of digital China.

## Investing more efforts in constructing an industry ecosystem

China Unicom unremittingly pushed forward the construction of the industry ecosystem, firmly managed the vicious competition costing customer interests and industry value, driving a sound benign competition environment in the industry, and consistently released development bonus, all to fuel the healthy and sustainable development of the telecommunications industry.

## Deepening network “co-build and co-share”

China Unicom deeply implemented the new development philosophy with the principle “win-win cooperation and collaborative development” to pinpoint enhancing on network supply capabilities and quality efficiency, and actively pushed forward the synergizing edges and in-depth cooperation in the fields of resources and innovation among industry peers, forming a collaborative synergy in development, and the commitment to becoming the premium operator with quality customer perception.

### Comprehensively pushing forward 5G network “co-build co share”

China Unicom vigorously conducted the cooperation with China Telecom to co-build and co-share one single 5G access network in the full lifecycle of 5G development across the entire network.

- China Unicom enhanced cooperation management. The two parties simultaneously formed a 5G “co-build co-share” working group in the three levels of the headquarters, provinces and cities, prepared the “2020 Guiding Opinions on Fundamental Network Co-build, Co-share and Co-maintenance”, formulated unified technical specifications for “co-build co-share” network, as well as 4/5G network quality assessment standards, and perfected organizational and policy support.
- China Unicom built the world’s first large-scale 5G “co-build co-share” network in the shortest time and with the least investment, achieving network scale, coverage, bandwidth and speed doubled and providing the mass users with better quality mobile network services.
- China Unicom further pushed forward the 5G network “co-build co-share, co-maintenance and co-optimize”, along with the goal of “unification in user perception, business experience, network quality, and service support”, enhancing network quality through collaboration and realizing leading network quality and user perception.
- Being the world’s first scale commercialization of SA network, China Unicom vigorously pushed forward the development of the 5G value chain and 5G consumption upgrade.
- China Unicom’s work in 5G “co-build co-share” was fully recognized numerous times by the Central government leadership and received high praise from the ministries and commissions such as the State-owned Assets Supervision and Administration Commission and Ministry of Industry and Information Technology. Such work was also included by the People’s Daily in a series of reports *Intensifying New Infrastructure and Cultivating New Drives* on March 27.

Scale doubled:

**380,000**

on cumulative basis 5G base stations co-shared

Coverage doubled:

**348**

cities covered nationwide

Speed doubled:

Achieved the global highest speed

**2.7** Gbps

in the 5G medium frequency band

Economic efficiency:

About

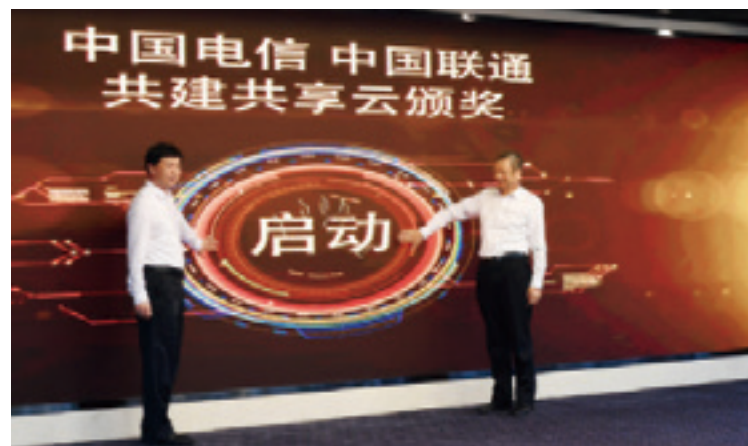
**RMB76**

billion, saving in investment

Operation cost saving

**RMB9**

billion/year



On September 9, 2020, China Unicom and China Telecom held a conference in Beijing to review the first year of work in the 5G network “co-build co share” and comprehensively deepened the “co-build co share” cooperation. Both Chairmen activated the “co-build co share” cloud ceremony.

#### 4G “Co-build Co-share” reaching a new level

- China Unicom deeply advanced the 4G “co-build co-share” with China Telecom, focusing on scenarios such as complementary coverage, new scenarios, and station site integration, together exploring sharing one single network in rural and indoor area, which effectively expanded network coverage and improved network quality.

- 390,000 4G co-share communities were newly added throughout the year, with a total of RMB9 billion of investment saved and RMB1 billion of operation cost saved per year for both parties.

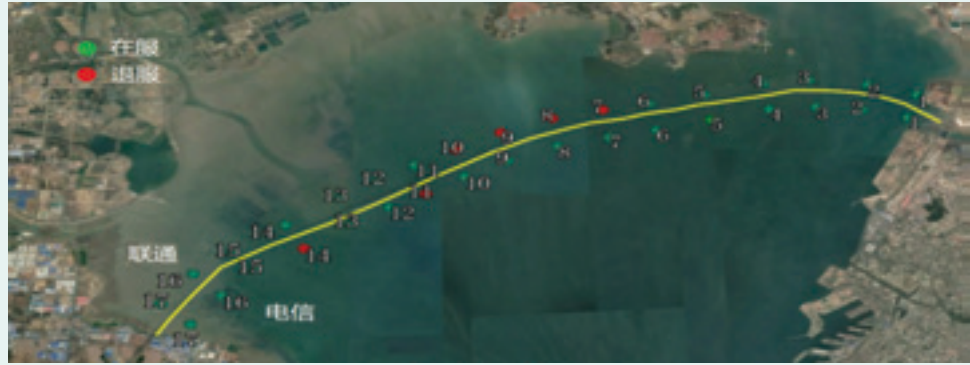
#### Full “Co-build Co-share” achieving substantial progress

- China Unicom expanded in-depth fundamental resources “co-build co-share co-maintenance”, fully co-building on incremental resources, co-sharing on existing resources, while continuing to expand cooperation area and enhancing cooperation efficiency, which would improve the operating effectiveness and efficiency of the fundamental resources and lowering network expenses.

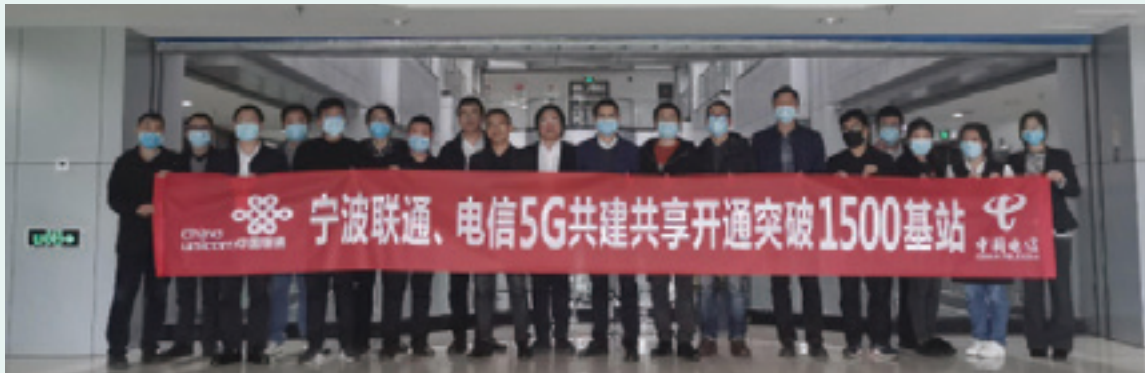
- The scope of cooperation with peer operators had expanded to areas including co-building optical cables, co-sharing fiber cores and cloud infrastructure.

Responsibility performance indicator	2018	2019	2020
4G co-building rate for indoor distribution systems (%)	79	79	65
Pole line co-building rate (%)	91	91	95
Pole line co-sharing rate (%)	95	97	92
Pipeline co-building rate (%)	94	92	94
Pipeline co-sharing rate (%)	96	93	97

China Unicom Shandong Qingdao focused on the pain points and difficulties of network maintenance and optimization, and carried out in-depth cooperation with China Telecom Qingdao to propose an innovative solution for the dynamic complementation of 4G equipment obstacles of the Qingdao Cross-sea Bridge. After the solution was deployed, both parties' network coverage ratio of the cross-sea bridge grew from an average of 72.69% to 98.15%. It was estimated that about RMB30,000 of expenses would be saved annually. By sharing resources, both parties optimized the coverage quality of the mobile network of maritime transportation facilities and surrounding areas, thus remarkably improving the livelihood of the local people.



The fault points and the road sections covered by China Unicom and China Telecom are well complementary



Left: On April 22, the number of 5G “co-build co-share” base stations by China Unicom Zhejiang Ningbo and China Telecom Ningbo exceeded 1,500



Right: China Unicom Shanghai and China Telecom Shanghai conducted a joint exercise for communication assurance at the International Import Expo



China Unicom Jiangsu comprehensively pushed forward “co-build co-share”



China Unicom Henan delivered sound “co-build co-share” results

## Pushing forward in-depth industry cooperation

In a new era characterized by intelligent connection of all things, while facing the value chain, China Unicom embraced an open attitude, worked with all parties to co-build innovative alliances, co-develop business models, co-share high-quality resources, and together expanding new potential for 5G integrated development, as well as broadened cooperation in various fields such as technologies, businesses, resources and capital, creating a benign industrial ecosystem.

## Deepening cooperation with equipment suppliers

China Unicom enhanced the regulation and management of equipment suppliers, embedded policies in the supply chain platform, and implemented whole-procedure digital operation of the supply chain.

### Enhancing regulated management

- China Unicom observed the laws to call for tenders, and make selection by means of open tendering in strict accordance with the requirements of national laws and regulations. For projects that are not necessarily subject to tendering, it adopted innovative transaction tools like open competition and open direct procurement in line with the philosophy of the SASAC for open procurement to select qualified suppliers on the supply chain platform. The amount of centralized procurement stood at approximately RMB81.63 billion.

- By lowering the access threshold for suppliers, China Unicom widely adopted the product and technology qualification system, thus allowing small suppliers to fairly take part in procurement activities.

- China Unicom conducted credit reviews for enterprises in the tendering and procurement activities, and prohibited rule-violating and untrustworthy enterprises from taking part in the tendering and bidding activities.

### Creating a digital supply chain

- China Unicom continuously upgraded the functions of the electronic tendering and bidding platform, offered the audio and video conference function, realized the “non-face-to-face” bid evaluation during the fight against the pandemic, and improved user perception.
- China Unicom continuously strengthened the capabilities of the e-commerce platform, providing diversified and convenient procurement supporting services for sub-divided units in the market front-line, product manager work stations and several procurement tools, and increased procurement efficiency comprehensively.
- China Unicom made a comprehensive plan to create a supplier management database, realized online closed-loop, whole-procedure and full-lifecycle management of suppliers, and provided support in fundamental information for supplier review.
- Based on the online operations during all processes of the supply chain such as sourcing, procurement, logistics, warehousing and disposal, China Unicom established a risk prevention and control management organization system with “centralized IT”, developed a digital risk prevention and control model driven by Big Data through such procedures as risk identification, risk assessment, risk response and risk control, implemented digital and intelligent real-time early warning and control of risks throughout the procurement process, and identified and eliminated potential risks.

Total number of e-commerce platform vendors  
**57,000**

**16,000**  
new vendors in the year

Vendors exited and downgraded  
**7,659**

KPI	2018	2019	2020
Centralized procurement ratio (%)	88.6	90.6	91.4
Proportion of local vendors (%)	>99	>99	>99
Number of times of vendors information verification	8135	19072	25653
Proportion of electronic procurement (%)	58	68	88

### Broadening cooperation with terminal suppliers

China Unicom established a trading platform of Woego and a service portal with terminal partners, enhanced the guidance and management of terminal suppliers, and improved the work efficiency and use perception of partners.

#### Building a cooperation and sharing platform

- As a nationwide comprehensive B2B trading platform, the Woego platform provides upstream and downstream partners in the industrial chain with services such as intelligent transactions, service empowerment, financial loans, channel marketing and other service solutions, also specialized solutions for intelligent ecology cooperation such as centralized operation, special area sales, exclusive consultants and special marketing. In 2020, the platform served over 30,000 small- and medium-sized channel trading customers.
- China Unicom built a service portal for terminal partners. With service experience as core philosophy, it realized online visualization and transparent management during the whole process from cooperation to terminal roll-out, constantly improving working efficiency and user perception of the partners.
- China Unicom proactively developed market-oriented multi-supplier cooperation. In 2020, the headquarters brought in 102 mobile terminal models and 314 pan-intelligence models and introduced over 240 provincial suppliers.

#### Driving terminal suppliers to fulfill their responsibilities

China Unicom organized a series of activities, namely “Resonance Operation 2020” and China Unicom “5G Anniversary Takeoff”, to empower over one hundred partners and one thousand of industries to fight the pandemic and resume production.

- China Unicom established an intelligent healthcare and elderly care supply chain system, created a communication platform for intelligent elderly care suppliers, and improved the suppliers’ capabilities to fulfill social responsibilities for healthcare and elderly care, thus the elderly could fully access the digital healthcare services.
- China Unicom required partners to conscientiously perform China’s 3C (China Compulsory Certification) and SRRC (State Radio Regulatory Commission) certifications for terminal products, and adopted environmentally friendly materials in transportation terminal products. Also, it promoted old-for-new services and made possible scientific recycling of old phones, and lowered environmental protection pressure.
- China Unicom reinforced efforts in governing the malicious software of phones, with all terminal suppliers promising not to install malicious software on terminal products. The Company timely and dynamically learned the prevention mechanisms adopted by terminal suppliers, and firmly safeguarded the legitimate rights and interests of the consumers.
- China Unicom actively communicated with terminal suppliers with negative news, and established a special group to rapidly implement such tasks as customer complaints, information verification, and customer appeasing, reducing negative social impacts, and maintained the corporate image and reputation.

China Unicom actively constructed an ecosystem for terminal cooperation, established a joint laboratory of 5G terminal innovation, a joint R&D center of 5G terminal innovation, and an innovation center of 5G terminal application cooperation together with 32 partners from fields including chips, module terminals, application content and chain channels, forming a sound landscape where the upstream and downstream of the value chain joined hands to make progress and achieved win-win cooperation.

On February 24, 2020, China Unicom united over 1,000 companies in the ecological chain to launch the “Resonance Action 2020”, a series of online activities for new ecological cooperation of the 5G terminal industry chain that lasted 37 days.

How to realize “similar frequency”?

By cross-border cooperation, China Unicom drove the new ecology of the value chain to realize cross-border and integrated evolution from a single chain of the communications industry and intelligent terminal industry to multiple chains. The Company shared the platform in which industry chain partners participated and resumed normal production and operation as soon as possible.

How to realize “vibration”?

China Unicom shored up the industry via the following five functions including cooperative alliance, empowerment roll-out, forum and salon, cooperative recruitment, and 5G+VR meeting participation, and revitalized the market by creating with partners the cultural and creative day, e-sports day, brand day, promotion day, and new product day.

On March 11, China Unicom worked with 21 partners such as chip suppliers, engine suppliers, XR terminal suppliers and XR application content suppliers to jointly build a 5G XR terminal ecological alliance and rolled out its project. China Unicom launched three empowerment platforms, namely, the XR terminal commercialization platform, incubation platform, and technology platform, as well as eight implementation plans in the 5GXR series scheme to jointly move forward the in-depth development of the 5G terminal industry into the professional fields.



## Vigorously broadening the cooperation with channels

China Unicom reinforced efforts in digital innovation, empowered the transformational development of cooperation channels, realized a win-win situation for operators, cooperative channels and users through financial cooperation, privileges cooperation, and resource sharing, as well as the ecological and platform-based cooperation and operation, which achieved a new cooperative channel operation system featuring win-win among operators, cooperation channels, and users that were built for sustainability, high quality and ecology.

### Reinforcing fair cooperation

- **China Unicom helped channel partners to fight against the pandemic and resume production.** China Unicom actively responded to the nation’s call to rapidly implement the working requirements for providing guarantee for both corporate pandemic prevention and control, as well as production and operation, and developed a mutual help plan “Six Sections and 18 Articles of Work and Production Resumption of Cooperative Channels”. The plan surmounted the difficulties, helped cooperative channels to fight against the pandemic, resumed production and rapidly restored production and operation.

- **China Unicom drove channel partners for transformative development.** China Unicom developed iterative and innovative digital capabilities, empowered channel partners via financial installment, agile supply chain and online marketing, improved the capability to operate cooperative channels, and brought along the transformative development of the channel partners. In 2020, the number of financial installment orders from channel partners grew by over 50% from the previous year, and the cloud shelf was made available to 28,000 channel partners in 30 provinces.

- **China Unicom improved the digitalization of IT systems.** China Unicom continuously promoted light platform tools, introduced partners in a fast manner, rapidly accepted business, quickly recorded the income, and drove partners to improve efficiency and increase benefits.

### Driving channel partners to fulfill their responsibilities

- China Unicom comprehensively applied the portrait comparison technology and ID verification equipment to implement the “real-name registration system” and helped channel partners to conduct production and operation activities in line with laws and regulations.

- China Unicom strengthened training and publicizing all policies to ensure that channel partners well comprehended the related policies, relying on IT Big data capabilities to analyze and screen abnormal data, thus reducing the risk of rule-violating operation.

Number of channel partners

About **200,000**

Online channel partners of cloud stores

Over **4,000**

## Reinforcing cooperation with virtual operators

China Unicom upheld the philosophies of “take initiative, cooperation, openness, and win-win results” and mainly adopted four measures, namely, “health promotion, fight against the pandemic, stronger innovation, and ecosystem building”, pushing forward the high-quality transformational development of the resale business.

**Health promotion.** China Unicom set up a full-cycle management and control mechanism to govern the problem of junk information of virtual network operator, lowered the crank call complaint ratio of virtual network operator by 76%, guided the healthy and compliant development of the virtual network operator, and created an industry atmosphere of integrity.

**Fight against the pandemic.** During the period when the pandemic stroke the hardest, China Unicom took nine major measures, including postponing payment time, guaranteeing resource supply and providing stronger operation support, to help cooperative enterprises weather through the hard time and assist them successfully to resume work and production.

**Stronger innovation.** China Unicom expanded the scale of value-added services such as Communications Assistant, Coloring Ring Back Tone, and Privileges, opened up the capabilities of 5G high-speed network, VoLTE high-definition voice and message billing, took the lead in launching the resale of the Internet of Things, and improve the innovative capabilities of virtual business services.

**Ecosystem building.** China Unicom carried out extensive two-way empowerment, realized all-rounded ecological cooperation through the cooperation platform for the virtual network operator, brought in high-quality products and capabilities of cooperative enterprises, enhanced the collaboration among internal subsidiaries, and made a joint effort to satisfy the needs of consumers for a good and intelligent life. In 2020, China Unicom cooperated with 28 enterprises in the resales business, and expanded the pilot scope to about 300 cities, covering the majority of provincial capitals and economically developed regions and the number of resales business users reached 61.73 million.

Number of resales users

**61.73** million

## Building a digital innovation ecosystem

The digital economy is closely tied with the digital ecosystem. Facing the development trend of consumer digitalization and industrial digitalization, China Unicom continuously deepened cooperation with strategic investors and leading enterprises in the industry in fields such as public innovation, government and enterprise innovation, and capital, to jointly provide customers with high-quality products and services and fueling economic and social transformation and upgrading.

## Deepening cooperation in digital consumption

China Unicom actively broadened cooperation in the fields of digital product innovation to jointly provide customers with high-quality products and services.

- China Unicom formed a joint project group with Baidu, focusing on deepened and broadened cooperation such as Smart home, intelligent customer services, brand building and live-streaming interaction, constructing a system for tens of millions of ecological products, and providing customers with diversified products and services with optimal experience.

- China Unicom and Alibaba both gathered high-quality resources and conducted platform-connected and ecological cooperation of “scenarios, goods and people”, jointly expanded and strengthened product operation, channel operation and customer operation, and realized mutual benefit and win-win results. In 2020, China Unicom promoted digital village cooperation across China, with a total of over 6,000 digital villages established and 140,000 users covered.

- Cooperating with high-quality partners such as Tencent, iQiyi, Youku, Mango TV and Bilibili, China Unicom had over 20 million users of cooperative products based on “content + traffic + privileges”, and achieved an accumulative of over 30 million business subscriptions.

In April 2020, China Unicom signed a strategic cooperation agreement with People’s Daily Online to jointly construct an “intelligent media platform”. By doing so, the mainstream and authoritative voices and core socialist values could be passed on to the mass in a fast, accurate, and efficient manner. In the future, the two parties will further carry out cooperation in the value-added business such as fixed communications services, brand and public opinion services, joint construction of education platforms and 5G innovative services.



China Unicom signed a strategic cooperation agreement with People’s Daily Online

In December 2020, China Unicom signed a strategic cooperation framework agreement with Meituan. Based on the advantages of resource endowments, the two parties conducted in-depth cooperation centering around 5G, Internet of Things and Big data, pushed forward digital transformation and upgrading through off-line empowerment, and jointly explored more business models and development directions.



China Unicom signed a strategic cooperation framework agreement with Meituan

## Expanding industrial digital cooperation

China Unicom valued to enhance the cooperation on government-enterprise products and key projects with upstream and downstream partners in the value chain, fueling economic and social transformation and upgrading.

- China Unicom consistently pushed forward the development and iteration of products by joint ventures such as Yunlizhihui, Yunjingwenlv, Yundee, Yundun, Smart Steps, and others, and improved the product and service capabilities in areas including Smart cities, tourism, industrial Internet, cybersecurity, and demographic Big Data. In 2020, there were a total of over 200 bid projects, with the amount of bid exceeding RMB730 million.
- China Unicom continuously deepened cooperation with partners in public cloud and adopted the principles of joint input of resources, effective connection of technologies, and reasonable distribution of revenue to create a new model of joint construction and operation of the public cloud.

In May 2020, Yunjingwenlv worked with the Guizhou Province to develop “Travel across Guizhou with One Code”, an all-area Smart travel platform. With just one QR code, the tourists traveling in Guizhou can access services concerning “food, accommodation, transportation, traveling, shopping and entertainment”. Currently, the platform has gathered over 20,000 basic data of 415 A-grade scenic spots, hotels, cultural facilities, restaurants, homestays, drawing maps of scenic spots, elaborate routes, and guides across the province, which has comprehensively improved the experience of tourist traveling in Guizhou.



## Building a capital cooperation ecosystem

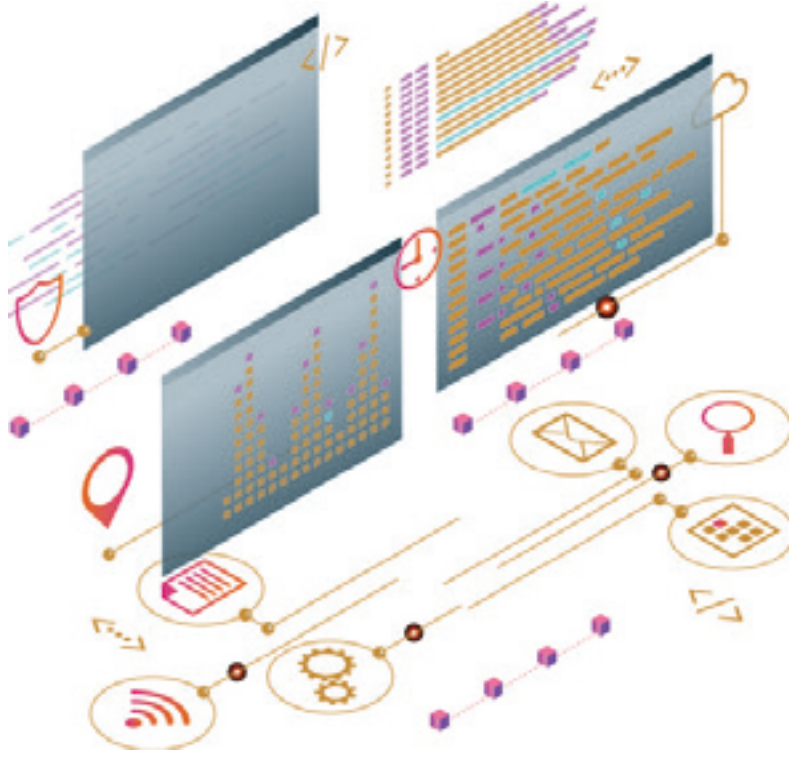
China Unicom conducted in-depth capital cooperation with BATJ and other strategic investors of mixed ownership reform and leading companies in the industry, boosted the two parties’ business cooperation via capital cooperation, and met the customers’ demands with differentiated services.

- In May 2020, China Unicom established iCloud Wisdom Technology Co., Ltd. with NetDragon Websoft Holdings Limited, National Engineering Research Center For E-Learning, and National Engineering Laboratory of Educational Big Data to provide customers with products and services with whole-procedure penetration and comprehensive solutions for education informatization.



- In November 2020, China Unicom established Beijing International Cloud Broadcasting Technology Co., Ltd. with CDV, Academy of Broadcasting Science, NRTA, and Beijing Gehua CATV Network Co., Ltd. to provide “service access with full cloud + full IP + full mobile + immediate access services” for video communication, driving video production and communication to develop in a full-media, intelligent and light manner.





# RESPONSIBILITY MANAGEMENT

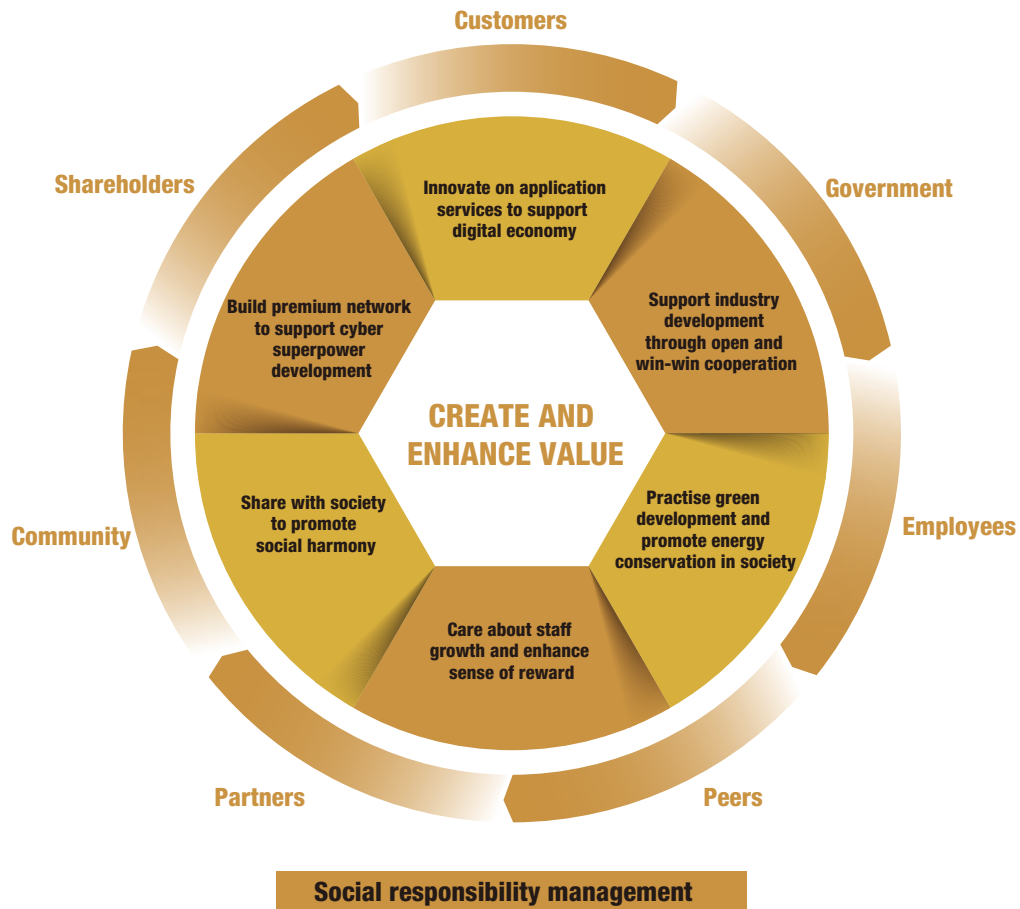
- Strategy of Responsibility
- Organisation of Responsibility
- System for Responsibility
- Capabilities on Responsibility
- Communication on Responsibility



# RESPONSIBILITY MANAGEMENT

## STRATEGY OF RESPONSIBILITY

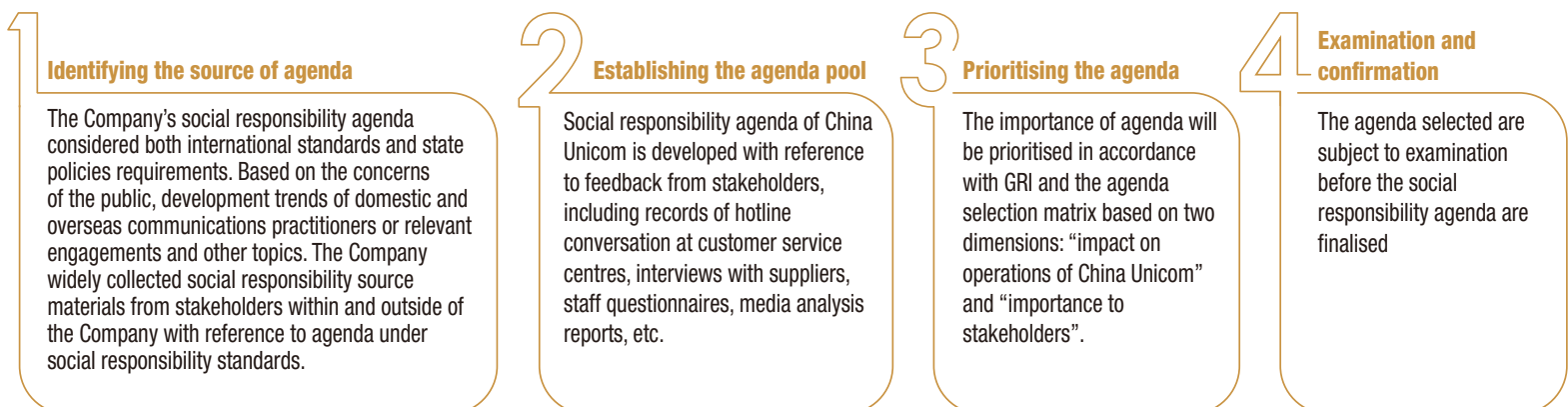
China Unicom is always committed to integrating its own development with broader social responsibility to achieve the harmony and alignment of corporate interests and social goals. In 2020, under the guidance of the new development philosophies of innovation, coordination, green, openness and sharing, the Company continued to practically implement national strategic plans such as Cyber Superpower, Digital China and the “Belt and Road Initiative”, etc. and strived to promote comprehensive digital transformation, fully supporting the transformation and upgrade of the economy and society.



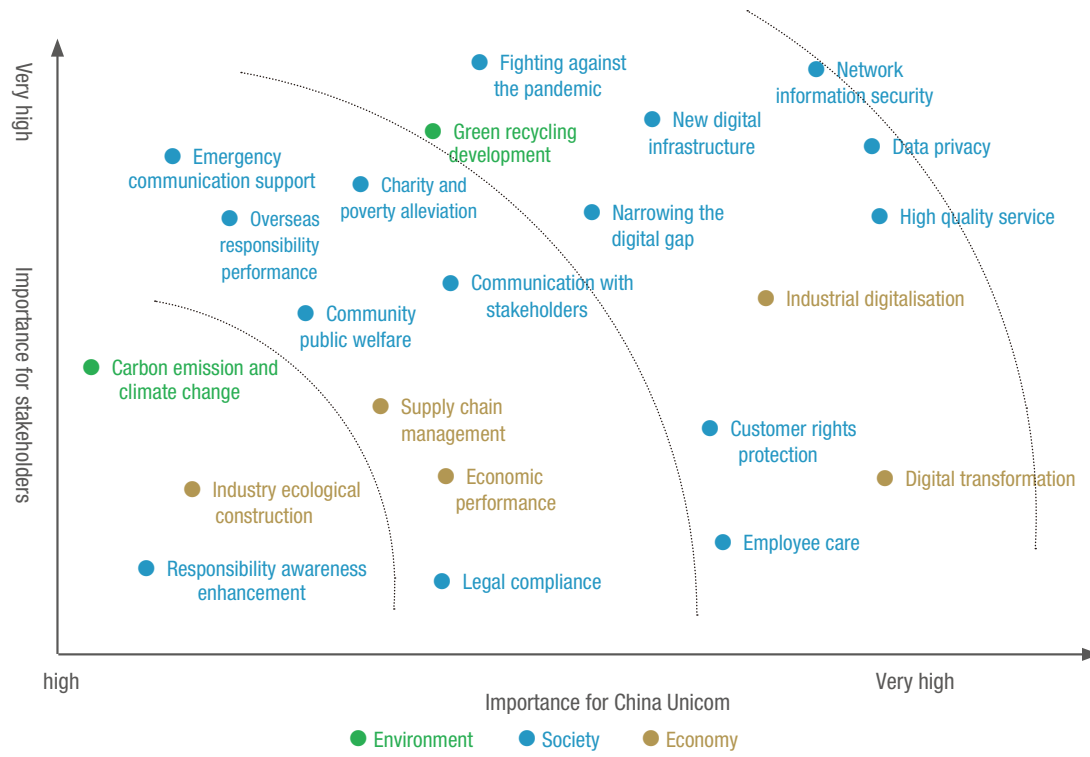
Implementing social responsibility strategies   Improving social responsibility organisations  
Establishing social responsibility systems   Assessing social responsibility capabilities   Selecting social responsibility participation

China Unicom’s Social Responsibility Strategy System

China Unicom has established a social responsibility agenda selection procedure based on the principle of “closely following standards, regularly updating and sustainably improving”. Our social responsibility agenda will be updated on a continuous basis in close tandem with the domestic and international situation and social hot spots as well as the standards of advanced enterprises. In 2020, social responsibility implementation was guided by six substantial agenda to ensure that the fulfillment of responsibilities meets the needs of the people’s livelihood and responds to the concerns of stakeholders.



China Unicom’s procedure for the selection of social responsibility agenda



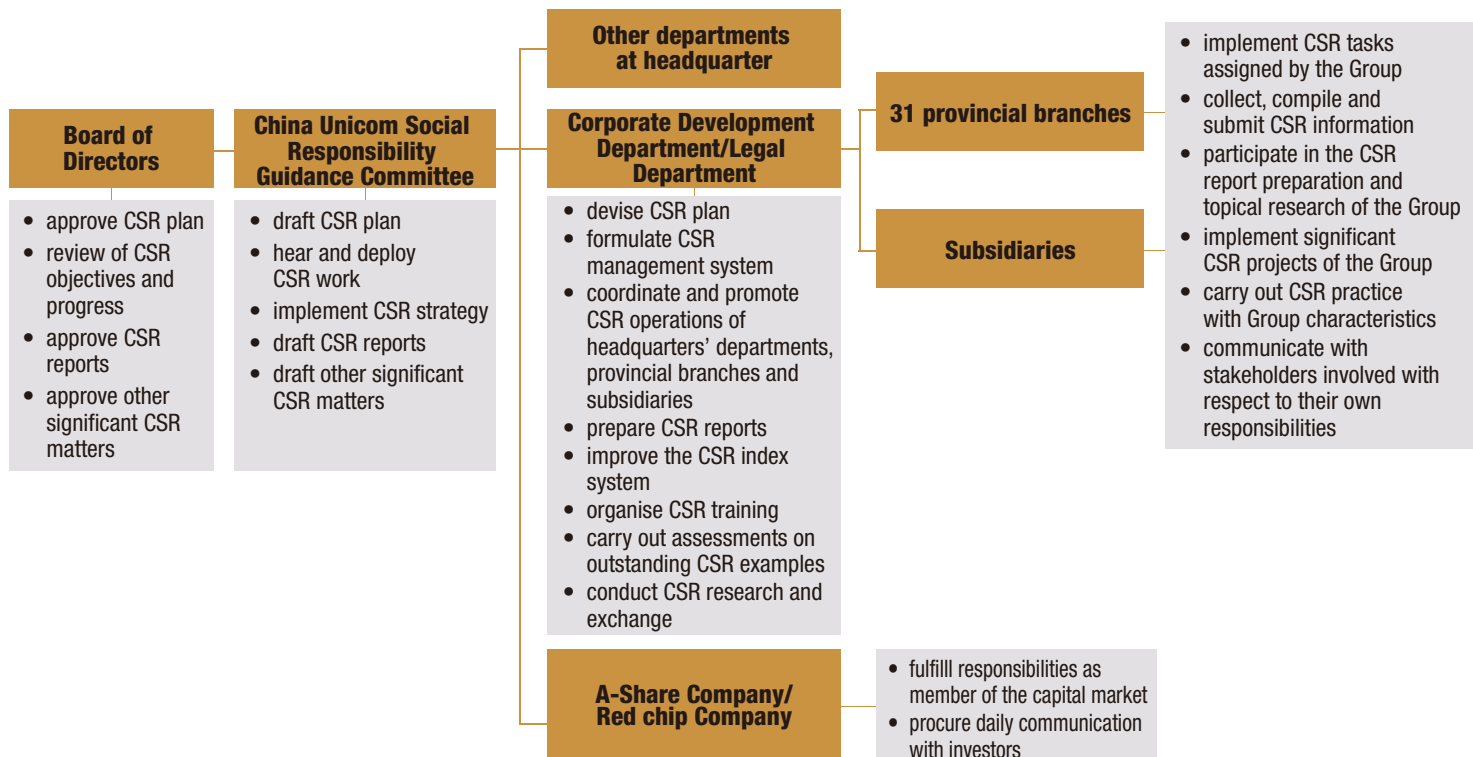
China Unicom social responsibility agenda selection matrix

The six-major core agenda of China Unicom in 2020 were determined through the analysis and selection of the agenda collected according to the social responsibility agenda selection procedures and the agenda selection matrix.



## ORGANISATION OF RESPONSIBILITY

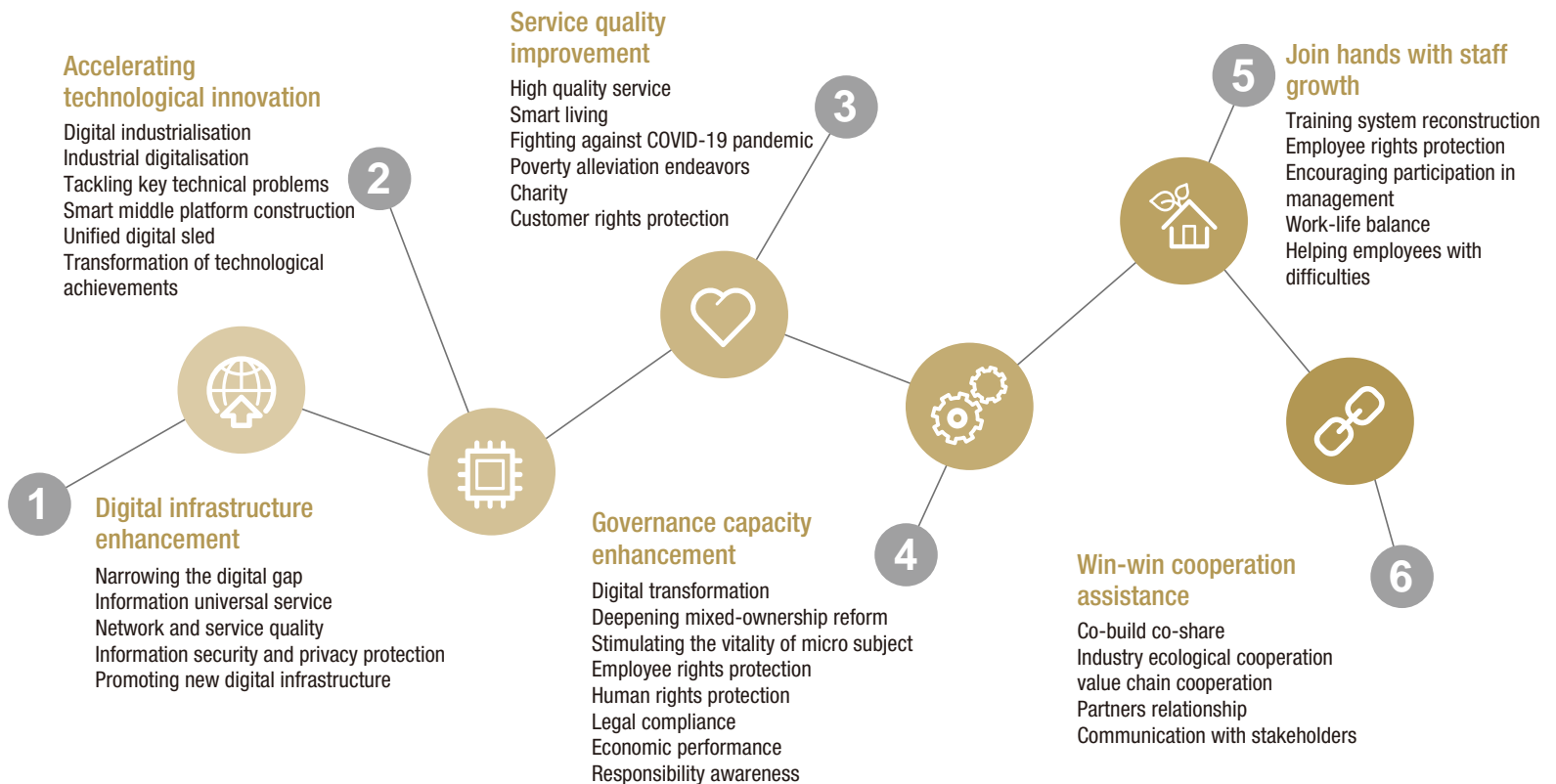
The Board of Directors of China Unicom is fully responsible for the environmental, social and governance strategy and reporting, including the approval of social responsibility planning, the review of social responsibility objectives and progress, the approval of social responsibility reports and other major issues. The Board of Directors authorises the Company's Social Responsibility Guidance Committee to be responsible for the implementation of corporate social responsibility strategy and related operational matters. The Social Responsibility Guidance Committee regularly reports and puts forward suggestions on social responsibility matters to the Board of Directors. Other relevant departments of the Group, the provincial branches and subsidiaries are responsible for social responsibility implementation and carry out responsibility practice in their respective business specialisations.



China Unicom's social responsibility working organisation and major duties

## SYSTEM FOR RESPONSIBILITY

The Company's social responsibility management system comprises of organisation management, implementation management, communication management and performance management etc. In operation, we adhere to the principles of management first, incorporation into operations and joint actions by higher and lower levels. We clarify the responsibility plan, promote the responsibility practice and respond to the concerns of all parties. In strict compliance with international and domestic social responsibility standards, the Company focused on six substantial agenda of the Company and further optimised the "China Unicom CSR Indicator System" and drove social responsibility to be effectively integrated into enterprise production and operation on that basis.



China Unicom CSR Indicator System

## CAPABILITIES ON RESPONSIBILITY

In 2020, China Unicom has continuously strengthened the construction of responsibility capacity, incorporated the fulfillment of social responsibility into the Company's "14th Five-Year Plan", continuously promoted the concept of responsibility and rooted in the awareness of all employees. We have established a two-level social responsibility team at the headquarters, branches and subsidiaries, extensively and deeply promoted the implementation of responsibility practice, and encouraged the improvement of the Group's ability to fulfill its responsibilities through case sharing. Many responsibility practices have won awards from all walks of life. We have done a good job in information tracking and disclosure, effectively responded to the concerns of stakeholders, and the social responsibility report has been positively evaluated. We have actively participated in various exchange seminars and trainings organised by the social responsibility industry, paying attention to the development trend of social responsibility, learning excellent enterprise experience, contributing ideas and opinions, and helping the sustainable and in-depth development of social responsibility.

- The Company's social responsibility report was rated as "2020 Golden Bee Excellent CSR Report — Leading Enterprise", and was selected as "100 Excellent CSR Reports" in the International Forum on Corporate Social Responsibility of Industry and Information Technology of the 2020 Sustainable Development Report of China's Industry and Information Technology.

- Three responsibility practice cases, such as 5G co-build co-share, Digital Intelligence to Fight Against Pandemic and Overseas Responsibility Performance, were selected into the blue book series of central state-owned enterprise corporate social responsibility, Overseas responsibility performance case "Connect the World, Let Love Grow" was selected as "Best Practice of Enterprises to Achieve Sustainable Development Goals 2020" issued by the UN Global Compact Network China.

- Participated in the questionnaire survey of Research Report on Corporate Social Responsibility of Central state-owned Enterprises issued by State-owned Assets Supervision and Administration Commission of the State Council, and the questionnaire survey on the demand of sustainable development goals of the investment in the "Belt and Road Initiative" project of the UN Global Compact.

- Participated in the UN Global Compact 2020 China Business Summit on achieving sustainable development goals, the International Forum on Corporate Social Responsibility of Industry and Information Technology, and the 13th International Conference on CSR Reporting in China of China Sustainability Tribune in order to contribute China Unicom's wisdom.

## COMMUNICATION ON RESPONSIBILITY

China Unicom has established a social responsibility communication mechanism focused on ongoing specific communication based on stakeholders' expectations and its substantial social responsibility agenda.

Practical issue	Stakeholder	Form of communication	Expectations for China Unicom
Digital infrastructure enhancement	Customers	<ul style="list-style-type: none"> <li>Meetings</li> <li>Visits</li> </ul>	<ul style="list-style-type: none"> <li>High-speed and smooth networks</li> <li>Innovative smart network services</li> <li>High-quality networks in remote areas</li> <li>Network information security assurance</li> </ul>
Accelerating technological innovation	All stakeholders	<ul style="list-style-type: none"> <li>Meetings</li> <li>Visits</li> <li>Weibo/WeChat</li> </ul>	<ul style="list-style-type: none"> <li>Innovative and futuristic communication technologies</li> <li>Empowering digital transformation of industry</li> </ul>
Service quality improvement	Community	<ul style="list-style-type: none"> <li>Meetings</li> <li>Forums</li> <li>NPS (Net Promoter Score) survey</li> <li>Weibo/WeChat</li> <li>Service hotline</li> <li>Villages support station</li> </ul>	<ul style="list-style-type: none"> <li>Smart products that enhance the quality of life</li> <li>Favourable and transparent tariff policy</li> <li>Convenient and efficient service assurance</li> <li>Sustainable and effective donations</li> <li>Greater effort in poverty aid and relief</li> <li>Charitable volunteering programmes</li> </ul>
Governance capacity enhancement	Shareholders	<ul style="list-style-type: none"> <li>General meeting of shareholders</li> <li>Investor meeting</li> </ul>	<ul style="list-style-type: none"> <li>Timely and transparent information access</li> <li>Long-term stable investment gains</li> <li>Corporate governance and risk control</li> <li>Legal compliance and corruption-resistance operations</li> </ul>
	Government	<ul style="list-style-type: none"> <li>Face to face communication</li> <li>Meetings</li> </ul>	<ul style="list-style-type: none"> <li>Fair competitive market order</li> <li>Efficiency enhancement and cost reduction</li> <li>Modernisation of governance capacity and system</li> </ul>
	Public and media	<ul style="list-style-type: none"> <li>Phone communication and forums</li> <li>Internet-based communication</li> </ul>	<ul style="list-style-type: none"> <li>Timely acquire the Company's information</li> <li>Interactive communication with the Company</li> </ul>
	Ecological environment	—	<ul style="list-style-type: none"> <li>Green and eco-friendly operations</li> <li>Reduction of pollution through recycling</li> </ul>
Join hands with staff growth	Employees	<ul style="list-style-type: none"> <li>Staff forums</li> <li>Staff representative assemblies</li> <li>Democratic informal meetings</li> <li>Online communication with the General Manager</li> </ul>	<ul style="list-style-type: none"> <li>Protection of lawful rights and interests</li> <li>Training and career development opportunities</li> <li>Opportunities for participation in democratic management</li> <li>Support in adversity</li> <li>Safe and comfortable work environment</li> </ul>
Win-win cooperation assistance	Partners	<ul style="list-style-type: none"> <li>Partners' conference</li> <li>Meetings, visits</li> <li>Self-service portals of partners</li> </ul>	<ul style="list-style-type: none"> <li>Wide scope of cooperation</li> <li>Fair and open opportunities for cooperation</li> <li>Extensive and convenient support services</li> </ul>
	Peers	<ul style="list-style-type: none"> <li>Face to face communication</li> <li>Meetings</li> </ul>	<ul style="list-style-type: none"> <li>Stronger ability for complementary use of resources</li> <li>Cost savings and higher efficiency</li> </ul>
	Customers	<ul style="list-style-type: none"> <li>Interviews and hotlines</li> </ul>	<ul style="list-style-type: none"> <li>Driving partners' accountability</li> </ul>

# APPENDICES

## KEY PERFORMANCE

Category	Indicator	Unit	2018	2019	2020
Operations and development	Total assets	RMB billion	540.32	562.5	580.62
	Operating revenue	RMB billion	290.88	290.51	303.84
	Service revenue	RMB billion	263.7	264.39	275.81
	Profit before income tax	RMB billion	13.081	14.17	16.03
	Mobile billing subscribers	Thousand	315036	318475	305811
	of which: 4G subscribers	Thousand	219925	253766	270181
	Fixed-line local access subscribers	Thousand	55899	54215	47339
	Fixed-line broadband subscribers	Thousand	80880	83478	86095
	Online 2I subscribers	Thousand	53810	54140	50940
Network capability	Number of 4G base stations	Thousand	987	1410	1503
	Population coverage of 4G	%	90	93	94
	Number of fixed network broadband access ports	Billion	0.215	0.221	0.225
	Broadband coverage rate in administrative villages in ten northern provinces	%	96	95	96
	Urban 100M or above broadband network coverage rate	%	77.7	86.3	85.3
	Urban 20M or above broadband network coverage rate	%	97	96	96
	Rural 4M or above broadband network coverage rate	%	100	100	100
	Coverage rate of mobile network in township	%	100	100	97.34
	Coverage rate of mobile network in administrative villages	%	89	90	86
	Total number of administrative village with coverage of broadband network	Thousand	282	299	306
	Co-construction rate of indoor distribution system	%	79	79	65
	Co-construction rate of pole lines	%	91	91	95
	Sharing rate of pole lines	%	95	97	92
	Co-construction rate of pipelines	%	94	92	94
	Sharing rate of pipelines	%	96	93	97
	International interconnection bandwidth	G	2427	2460	2460
	4G network access rate	%	99.77	99.74	99.86
	4G network call drop rate	%	0.09	0.06	0.04
	5G commercialised cities	Number	—	50	348
	5G base stations	Thousand	—	—	380
Internet of things connections	Billion	0.109	0.187	0.238	
Commitment in major assurance initiatives	Total times of emergency communication assurance	Times	407	578	612
	Emergency communication vehicles called out	Thousand vehicle-time	133	152	153
	Emergency communication equipment inputted	Thousand set-time	94	119	180
	Personnel used	Thousand person-time	482	641	660
Proprietary innovation	Technological innovation input	RMB billion	11.5	10.26	12.28
	Number of personnel in technical activities	Persons	7703	9155	14149
	International standards documents	Articles	545	500	467
	Industry standards	Items	285	280	295
	Number of patents applied	Items	1121	1439	1734
	Number of patents granted	Items	441	658	518
Customer service	Monthly average complaint rate	Person-times/million users	2.96	18.26	11.84
	Overall satisfaction rate	Points	80.42	81.11	81.32
	Including: Fixed line user satisfaction rate	Points	85.73	87.9	87.7
	Mobile phone user satisfaction rate	Points	81.94	82.02	82.22
	Fixed broadband user satisfaction rate	Points	76.17	81.51	80.49
	Mobile Internet user satisfaction rate	Points	77.83	78.49	79.22
People-oriented	Gender proportion of employees	Male: female	1.50:1	1.53:1	1.54:1
	Proportion of ethnic minority employees	%	6.77	7.33	6.72
	Proportion of female in senior management	%	11	11.9	12.5

Category	Indicator	Unit	2018	2019	2020
People-oriented	Input in employee training	RMB million	422.99	374.36	364.86
	Per capita training time	Hours	66	63	88
	Network college online learning person-time	Thousand person-times	11250	18078	51000
	Network college total online learning hours	Thousand credit hours	7040	9163	21782
	Proportion of contracted employees in labor union	%	100	100	100
	Input to help and support employees suffered from difficulties	RMB thousand	30220	79000	78800
	Input in condolence fund	RMB thousand	28530	28750	42590
	Employee turnover rate	%	2.16	1.85	1.87
	New employees	Persons	8565	9831	10281
	Total number of new male employees	Persons	5207	6076	6422
	Total number of new female employees	Persons	3358	3755	3859
	Number of employees who voluntarily resign	Persons	6636	4521	4692
	Number of male employees who voluntarily resign	Persons	3983	2674	2806
	Number of female employees who voluntarily resign	Persons	2653	1847	1886
	Number of employees dismissed	Persons	904	914	1244
	Number of male employees dismissed	Persons	608	560	797
	Number of female employees dismissed	Persons	296	354	447
	Turnover rate of employees aged below 30	%	8.70	6.84	7.07
	Turnover rate of employees aged 30-50	%	1.82	1.07	1.18
	Turnover rate of employees aged over 50	%	0.21	0.14	0.13
	Turnover rate of male employees within the year	%	2.64	1.78	1.88
	Turnover rate of female employees within the year	%	2.75	1.95	2.02
Low-carbon development	Special investment in energy conservation and emission reduction	RMB billion	0.1	0.104	0.123
	Energy consumption per unit of information flow <sup>5</sup>	Kg standard coal/TB	3.71	3.48	2.83
	Petrol consumption <sup>5</sup>	Thousand tons	42.1	41.75	40.5
	Diesel consumption <sup>5</sup>	Thousand tons	13.87	13.74	11.2
	Natural gas consumption <sup>5</sup>	Thousand m <sup>3</sup>	11145.2	7858.5	5423
	Electricity consumption <sup>5</sup>	Billion KWH	15.066	15.81	17.22
	Water consumption	Thousand tons	18573.1	18095	14990
	Density of water consumption <sup>5</sup>	Tons/RMB million	64.35	61.51	47.21
	Coal consumption <sup>5</sup>	Thousand tons	98.5	94	23
	Energy conservation <sup>5</sup>	Thousand tons	169.2	172.8	245
	Greenhouse gas emission	Million tons	13.13	13.2	14.23
	Total direct emission of GHG (category I)	Million tons	0.37	0.39	0.2
	Total indirect emission of GHG (category II)	Million tons	12.76	12.81	14.03
	Carbon emission intensity	Tons/RMB million	45.13	45.40	46.6
	Sulphur dioxide emission <sup>5</sup>	Thousand tons	0.07	0.04	0.01
	Recycling upon scrappage and disposal	RMB billion	0.621	0.965	0.733
	Scrappage and disposal of cables	Thousand tons	—	155	37.3
	Scrappage and disposal of battery	Thousand tons	—	10.2	11.3
	Scrappage and disposal of general materials	Thousand tons	—	10.9	24.7
	Compliance management	Compliance training sessions	Times	1920	2514
Participant attending the compliance training		Thousand persons	248	245	243
Production safety training sessions		Times	40	87	93
Coverage rate of production safety training		%	100	100	100
Community responsibility	Number of registered volunteers	Persons	43873	47930	55006
	Participants in volunteer activities	Person-times	50412	55004	58095
	Credit rating <sup>1</sup>	Grade	AAA	AAA	AAA
	Total tax paid	RMB billion	7.889	5.25	6.59
	Employment creation	Persons	10869	9913	10652
	Total donation	RMB thousand	11040	2230	6374

Note:

1.United Credit Ratings Co., Ltd. and China Chengxin International Credit Rating Co., Ltd. granted China United Network Communications Corporation Limited, a wholly-owned subsidiary of the Company, AAA credit rating.

2.Data in the report: The data and information disclosed in this report mainly sourced from relevant data collection systems and relevant statistical statements inside our company and cases about corporate social responsibility practice submitted by provincial subsidiaries. There is no material change in relation to the methods used for prepping the disclosure. The 2020 data quoted in this report are final statistical data. In case of any discrepancy between the financial data herein and those in annual report, the annual report shall prevail. The monetary unit adopted in this report is RMB.

3.Please refer to the Description to the Report for the details of the report reference standards.

4.Quality assurance: The Board of Directors and all directors undertake that the information disclosed in the report is authentic, complete and correct, with no false record or misleading statement.

5.Data methodologies for 2018-2020 were adjusted and unified according to the relevant requirements.

## HONORS AND RECOGNITION

- China Unicom ranked 290th in “Fortune Global 500” for the year 2020.
- China Unicom was rated as “2019-2020 Excellent Information Disclosure (Grade A)” by Shanghai Stock Exchange, and was awarded “Social Responsibility Award” in “14th Chinese Listed Company Valuation Poll” by Securities Times.
- China Unicom ranked top in IR Magazine Awards, and was honoured with “Best Overall Investor Relations (Large Cap)”, “Best in Communication Sector” and “Best in Hong Kong” at the “IR magazine Awards — Greater China 2020”.
- China Unicom was voted “Asia’s No.1 Most Honored Telecom Company”, “Asia’s Best ESG (Telecoms)” and “Asia’s Best IR Team (Telecoms)” in “2020 All-Asia Executive Team” ranking organised by Institutional Investor.
- China Unicom was awarded “Most Outstanding Company in Asia — Telecommunication Services Sector” and the “Overall Most Outstanding Company in Hong Kong” in the “Asia’s Outstanding Companies Poll 2020” organised by Asiamoney.
- China Unicom was awarded “Best Corporate Governance in Asia”, “Best Managed Company in China — 1st”, “Best Corporate Governance in China — 1st”, “Best Environmental Stewardship in China — 1st”, “Most Committed to Social Causes in China — 1st” and “Best Investor Relations in China — 1st” in “Asia’s Best Managed Companies Poll 2020” organised by FinanceAsia.
- China Unicom was accredited with the following corporate governance awards in the 10th Asian Excellence Award 2020 held by Corporate Governance: Asia’s Best CSR, Asia’s Best CEO, Asia’s Best CFO, and Best Investor Relations Company.
- The Weibo account of customer service and WeChat account of China Unicom were awarded “Most Influential New Media Secondary Account of Central State-owned Enterprises in 2020” by the News Center of SASAC of the State Council.
- The Poverty Alleviation Office of China Unicom was honoured with “National Advanced Group in Poverty Alleviation”
- Unicom Big Data Co., Ltd. was awarded the honorary title of “National Advanced Group in Fighting Against COVID-19” by the Central Committee of CPC, the State Council and the Central Military Commission, “2020 Government Information Product Technology Innovation Award” by China Information Industry Association, and “2020 Innovation Contribution Award of Big Data of Information and Communication” by Big Data magazine, Digital China net and organising committee of China Information, Communication and Big Data Conference.
- Unicom Cloud Data Co., Ltd. was awarded the first prize of “Science and Technology Innovation Award in 2020” by the National Internet Data Center Innovation Technology Alliance, and won the “Pioneer Award of New Infrastructure Operator in China IDC Industry 2020” by data center committee of China Communications Industry Association.
- Unicom System Integration Co., Ltd. was awarded “Outstanding Enterprise in Electronic Information Industry 2020” by the Electronic Information Industry Development Conference.
- Unicom Payment Company was awarded “Best Fintech Innovation and Application Award in 2020” by the organising committee of the 14th China Payment and Financial Scene (Banking) Conference.
- The “Hope Project of Book Gifting” launched by Unicom Online Information Technology Co., Ltd. was rated as “Top Ten Poverty Alleviation Projects of Digital Reading in 2019” by China Audiovisual and Digital Publishing Association.

## DESCRIPTION TO THE REPORT

<b>Reporting Period</b>	From January 1, 2020 to December 31, 2020, with some sections exceeding the aforesaid period.
<b>Release frequency</b>	The corporate social responsibility report of China Unicom (Hong Kong) Limited is an annual report.
<b>Organisational coverage</b>	The report covers China Unicom (Hong Kong) Limited and its subsidiaries. For the convenience of expression, “China Unicom”, “the Company” and “We” are used respectively in this report, with some sections exceeding the aforesaid period.
<b>References</b>	Guiding Opinions on Better Fulfilling Social Responsibilities of State-owned Enterprises, The State-owned Assets Supervision and Administration Commission of the State Council (SASAC); Ten Principles of the UN Global Compact; Guidelines for preparation of Report on Performance of Corporate Social Responsibility, Shanghai Stock Exchange; Environmental, Social and Governance Reporting Guide, HKEX; Guidelines for Preparation of Social Responsibility Report, ACSIQ and SAC; Guidelines for Preparation of China Enterprise Social Responsibility Report (CASS-CSR4.0), Chinese Academy of Social Sciences; Sustainability Reporting Guidelines (Latest Edition), Global Reporting Initiative (GRI); Social Responsibility Management System of China Information and Communication Industry Enterprises, China Association of Communications Enterprises.
<b>Clarification about the data</b>	The 2020 data quoted in this report are final statistical data. In case of any discrepancy between the financial data herein and those in annual report, the annual report shall prevail.
<b>Quality assurance</b>	The Board of Directors and all directors undertake that the information disclosed in the report is authentic, complete and correct, with no false record or misleading statement.

**Language versions and availability**

The Corporate Social Responsibility Report of the Company is issued in both Chinese and English and provided in electronic copy.  
Website: <https://www.chinaunicom.com.hk>.

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- Material gases such as ozone depleting substances (ODS), nitrogen oxides (NOx), sulphur oxides (SOx) cited in 305-6, 305-7 are not the major emissions of the Company.
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### Notes:

- As China Unicom is a massive entity and its business covers a wide geographical region, currently the Company is not able to produce full statistics over its waste production (including hazardous and non-hazardous categories) as prescribed in A1.3 and A1.4. Upon identification of material topics, we mainly report on the recycling and reuse of main resources utilised by the Company in the course of operation including cables, battery, terminals and comprehensive supplies. The Company will establish related data collection system in the future.
- As the Company mainly engages in the provision of telecommunication services, packaging material used for the finished products as prescribed in A2.5 is not applicable to the Company's business practice.
- The index of 'product recycling' is not applicable to the actual business of the Company. Through the identification of substantive agenda, the Company mainly reported on the maintenance of network information security, the protection of emergency communication, and the protection of customer rights and interests in accordance with the law.

Dear Reader,

Thank you for reading 2020 Corporate Social Responsibility Report of China Unicom (Hong Kong) Limited, which is the fifth corporate social responsibility report of China Unicom (Hong Kong) Limited. In order to better provide you and other stakeholders with valuable information while facilitating the supervision of social responsibility works as well as enhancing the capability and standard of performing social responsibility, we would like to have your precious opinion and suggestion regarding this report.

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● **Your capacity:**

- A. Customer B. Shareholder C. Government D. Community E. Business partner F. Media G. Social organisation  
H. Others (Please specify) \_\_\_\_\_

● **Overall evaluation of China Unicom's Corporate Social Responsibility Report:**

- A. Excellent B. Good C. Fair D. Not Satisfactory E. Poor

● **Overall evaluation of China Unicom's performance in economic, social and environmental responsibilities:**

Economic responsibility	A. Excellent	B. Good	C. Fair	D. Not Satisfactory	E. Poor
Social responsibility	A. Excellent	B. Good	C. Fair	D. Not Satisfactory	E. Poor
Environmental responsibility	A. Excellent	B. Good	C. Fair	D. Not Satisfactory	E. Poor

● **Response and disclosure in this report in connection with the concerns of stakeholders?**

- A. Excellent B. Good C. Fair D. Not Satisfactory E. Poor

● **Overall evaluation of China Unicom's Corporate Social Responsibility Report in terms of the clarity, accuracy and integrity of the disclosure of information, data and index:**

Clarity	A. Excellent	B. Good	C. Fair	D. Not Satisfactory	E. Poor
Accuracy	A. Excellent	B. Good	C. Fair	D. Not Satisfactory	E. Poor
Integrity	A. Excellent	B. Good	C. Fair	D. Not Satisfactory	E. Poor

● **Readability of this report in terms of content arrangement and layout design?**

Content arrangement	A. Excellent	B. Fair	C. Poor
Layout design	A. Excellent	B. Fair	C. Poor

● **Any other opinion/suggestion for our work and report of corporate social responsibility?**

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Thank you for your feedback and precious time.



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