

SOCIAL
RESPONSIBILITY
REPORT OF
2020



Digitalization ·

Development Accompanied by Responsibility



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MESSAGE FROM CHAIRMAN

2020 has been an extremely difficult and extraordinary year. In the face of intricate and complex internal and external situation, the severe impact of the COVID-19 epidemic and the arduous tasks of reform and development, we shouldered our due responsibilities to fight the pandemic, tackle challenges, leverage the best possible solutions and gather stronger momentum. Focusing on the epidemic prevention and control on the one hand as well as reform and transformation on the other, we made every effort to sharpen new advantages in digitalization to actively serve the people's growing demand for high-quality digital life, and give full play to the unique advantages of the mixed-ownership reform in converging upstream and downstream digital industry chains to empower the transformation and upgrading in all industries. By doing so, we became better enabled to support the country's major strategies and overall economic and social development, setting a positive example in fulfilling political, economic, environmental and social responsibilities.

Coordinate reform, transformation and development to promote digital governance with high efficiency. We always adhered to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and thoroughly studied and implemented the spirit of the 19th CPC National Congress and plenary sessions of the 19th CPC Central Committee to secure the political guarantee for reform and transformation at greater depth. We made brave attempt as a "pioneer" in digital transformation and smart operation to generate organic efficiency in business, products, services, management and processes through digitalization for the Company's healthy "body" and smooth "circulation", improving operational efficiency and customer response agility. We strengthened data empowerment to create a unified and agile digital base while building stronger, better and broader middle-end. We became the first in the industry to complete 100% cBSS migration, realizing data sharing across all domains and accurate data analysis to continue to empower our customers and frontline staff. We adopted to the systematic concept in integrating different schemes and mechanisms to fully implement the reform of the operating system, promote process redesign, the implementation of director-based management, the rectification for "HQ streamlining" and renewed subdivision reform, deepen market-oriented reform among subsidiaries and branches, and stimulate the vitality of micro entities at all levels to make production relations more suitable for the development of productive forces. We improved the management system for better internal control with strengthened supervision and evaluation and better closed-loop management to effectively prevent and resolve major risks while continuously enhance competitiveness, innovation capacity, control, influence and resilience against risks.

Deploy new types of digital infrastructure to enable digital development with high quality. Shouldering the mission and responsibility as an operator to lead the development of the digital economy, we made earnest efforts as the "national team" to empower China with network and digital strength. We accelerated the construction of high-speed, mobile, secure and ubiquitous digital infrastructure, and managed to build the world's first largest 5G shared network under co-investment, which consolidated China's global leadership in 5G; we continued to promote the joint construction and sharing of 4G networks, with a population coverage over 95% and industry-leading download rate for three consecutive years; our broadband ports reached 225 million with the average access rate increased by 24%; we speeded up the promotion of universal information services, with the coverage rate of mobile networks in towns and villages reaching 97.3%, which laid a solid foundation for high-quality information infrastructure for the rapid

development of the digital economy. We facilitated digital transformation through technology innovation, raised the R&D investment, established joint laboratories, introduced external outstanding professionals in science and technology, drove joint innovation by synergy from the industry, universities, research institutes and users, and applied for 1,734 patents, which markedly intensified our scientific and technological innovation. We leveraged the digital technology to secure our networks for greater security and controllability. We were fully committed to the fight against COVID-19 and resolutely regarded the communication guarantee for key missions during the epidemic as a major political task. We concentrated our efforts with our best teams and ensured the smooth and reliable communication network for more than 2,000 key hospitals for epidemic prevention while successfully supported the communication for 40 top-level "cloud diplomacy" tasks, demonstrating the capacity of a key player in a major country. We persisted in the harmonious symbiosis of human and nature through vigorous promotion of green and low-carbon technologies, strengthened management of electromagnetic radiation and the establishment of green supply chains to guard the safety boundary of the natural ecological environment.

Adhere to the people-centered philosophy to serve high-quality digital life. Based on the idea of providing quality services to customers, we were committed to becoming a leading provider of integrated digital service. We continued to expand the supply of high-quality digital products, strengthen full life-cycle management, diversify 5G package design, nurture industry-leading capabilities of cross-domain convergence, improve the "1+4+X" smart home portfolio and create intensive smart customer service to provide customers with highly convenient services. We integrated advanced technologies such as 5G, AI and blockchain and centered on cloud migration, data utilization and smart empowerment to help industries and enterprises improve their quality and efficiency and transform and upgrade. Drawing on our own capabilities, we innovated product systems to support the digital transformation of such industries as aviation, coal, iron & steel, home appliances and equipment manufacturing; we opened our smart data brain and gathered excellent business partners to jointly create 67 smart cities at municipal level and 52 at district or county level; relying on the ability to pool massive data from 31 provinces at one point with centralized operation, we built a five-in-one "digital government" architecture featuring "cloud enablement, interconnectivity, digital data, smart solution and operation" to form the new momentum of digital transformation driven by two wheels – the platform system and the operating system. China Unicom Big Data Co., Ltd. was awarded the honorary title of "National Advanced Group in Fighting Against COVID-19". We took in-depth measures in raising network speed while reducing network charge, with the average tariffs of broadband and Internet dedicated lines for corporate customers further down by over 15% and the data tariffs for outgoing international roaming lowered by 4.5% year-on-year. Number portability was comprehensively standardized to benefit the general public, significantly improving customer experience. With the core goal of enabling a "smart Winter Olympics", we overcame major challenges caused by extreme cold and the epidemic and took ingenious actions in building network facilities for the Winter Olympics to ensure network readiness as scheduled. Capitalizing on our network and technology advantages, we focused on targeted poverty alleviation and successfully completed tasks in designated poverty relief and counterpart

assistance, during which we invested 764 million yuan as free funds for more than 3,000 poverty alleviation projects and helped over 316,000 poor residents out of poverty, winning the highest grade in designated poverty alleviation assessment amongst centrally-administered organizations for two consecutive years.

Advocate openness, cooperation and win-win to drive the digital upgrade of industrial chains. Adhered to creating a digital ecosystem with "openness, shared benefits, inclusiveness and win-win results", we continued to deepen cooperation with strategic investors and industry champions, promoted the optimization and upgrading of the industrial chain and supply chains, took the lead among central SOEs in realizing the digital transformation of the supply chain and mobilized the development of capital under all types of ownership for complementary advantages and win-win cooperation within the ecosystem. We promoted the healthy growth of the ecosystem and resolutely corrected vicious competitions at the expense of the interests of customers and industry value to help the industry achieve soundness and sustainability. We created a "new ecosystem" of smart life and relied on most-widely-used mobile Apps to introduce cooperation resources for smart life to build ecosystems for smart life, smart communication, smart entertainment and the like. We strengthened cooperation with digital industry chain, built the terminal cooperation ecosystem, united over 1,000 ecosystem players to launch the "Joint Revitalization Action 2020", and jointly built the 5G XR terminal ecosystem alliance to promote in-depth development of the 5G terminal industry in more specialized field. We built new operation system for cooperation channels, which is sustainable, of high quality and ecosystem-based and has over 4,000 cloud stores in online cooperation channels as well as more than 20,000 micro-ecosystems, driving both online and offline resources. We carried out in-depth capital cooperation and established joint ventures such as iCloud Wisdom and Cloud Broadcasting to mobilize business cooperation through capital partnerships and provide customers with high-quality products and services together.

The year 2021 marks the beginning of the "14th Five-Year Plan". Under the strong leadership of the CPC Central Committee with Comrade Xi Jinping at its core, based on both domestic and international landscapes while keeping in mind top priorities for our country, we will strive to foster a new development paradigm, advance the three-year action of SOE reform at greater depth and accelerate the comprehensive digital transformation with focus on shaping new advantages in high-quality service, high-quality development, highly-efficient governance, high-tech engine and high-vitality operation to leverage ICTs to drive, mobilize and connect the industrial chain and socio-economic development, make greater contributions to building a modern socialist country in an all-round way, and to celebrate the 100th anniversary of the founding of the Communist Party of China with our outstanding achievements in building cyber strength and the Digital China.

Chairman of China United Network Communications Group Co., Ltd.

WELCOME TO CHINA UNICOM

Company Profile

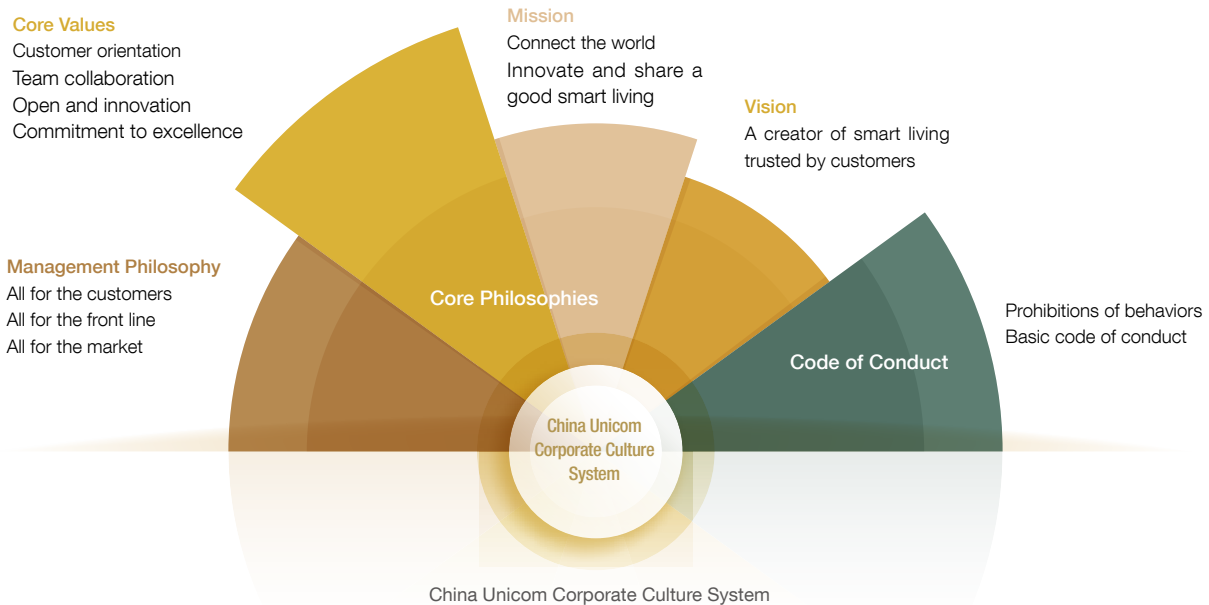
China United Network Communications Group Corporation Limited ("China Unicom") was officially established on January 6, 2009 based on the merger of former China Netcom and former China Unicom. It has operations in 31 provinces (autonomous regions/municipalities) across China and many countries and regions around the world and is the only Chinese telecom operator listed on the stock exchanges in New York, Hong Kong and Shanghai. It has been listed in Fortune 500 for twelve consecutive years and was ranked 290th in 2020.

China Unicom's principal operations include, among others, fixed and mobile service, domestic and international communication facilities service, data communication service, network access service, value-added services and system integration services related to communication and information services. China Unicom owns a modern communications network covering entire China and linking the world, actively pushes forward broadband-based fixed and mobile networks and promotes the implementation of "Cyber Strength" strategy at corporate level so as to provide comprehensive and high-quality information and communications services to its wide users. In 2020, China Unicom played a leading role in 5G with continued efforts to create and accumulate visual assets of the 5G" brand, the repolished tagline "Innovation · Hand in Hand with Smart Intelligence" for brand upgrading and differentiated brand promises to target five respective scenarios - consumer Internet, home Internet, experience Internet, industrial Internet and ecosystem platform.

In 2020, facing the intricate and complex internal and external situations, China Unicom coordinated its tasks in epidemic prevention and control as well as reform and development, deepened network co-construction and sharing, continued to foster industrial ecosystem, carried out comprehensive digital transformation and advance deeply the mixed ownership reform, taking important new steps toward high quality development.

Cultural Philosophy

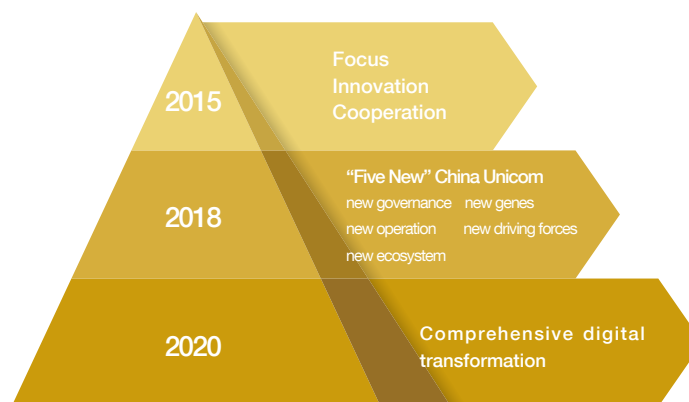
China Unicom has actively exercised the strategy of "thriving the nation through cultural development" and adhered to the concept of strengthening the enterprise through corporate culture to level up its soft power and competitiveness through corporate culture development and to create its culture system comprising a core philosophy system and the code of conduct.



Corporate Strategy

China Unicom earnestly practices the new development philosophy, accelerates the fostering of a new development paradigm, is firmly committed to the strategy of focus, innovation and cooperation, and is guided by the idea of building a "Five New" China Unicom to deepen the mixed ownership reform and expedite the comprehensive digital transformation, striving to become a comprehensive digital service provider by 2025 with leadership in the quality of development, digital operation capabilities, factor allocation efficiency and governance efficiency; by 2035, it is expected to be a world-class enterprise with global competitiveness so as to contribute more to the building of a modern socialist country in an all-round way.

China Unicom is firmly committed to the strategy of “focus, innovation and cooperation” in all its endeavors



The concept of “Five New” China Unicom and comprehensive digital transformation both center on the “Fucos” strategy and are highly aligned

Strategic Framework of China Unicom

Senior Management



Wang Xiaochu

Secretary of Party
Leadership Group
Chairman



Chen Zhongyue

Deputy Secretary of Party Leadership Group
President
Director of the Board



Li Fushen

Deputy Secretary of Party
Leadership Group
Director of the Board



Mai Yanzhou

Member of Party Leadership Group
Vice President



Liang Baojun

Member of Party Leadership Group
Vice President



Zhu Kebing

Member of Party Leadership Group
Chief Accountant



Fan Yunjun

Member of Party Leadership Group
Vice President



Dong Qun

Member of Party Leadership Group
Head of Discipline Inspection and Supervision Group



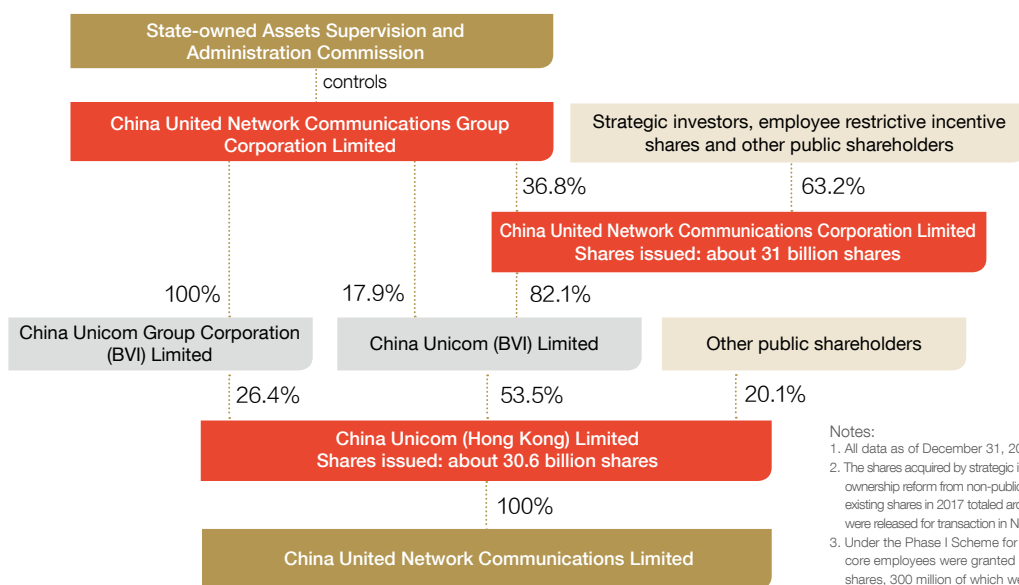
He Biao

Member of Party Leadership Group
Vice President

Note: Changes in management

Chen Zhongyue (effective from January 2021); Dong Qun (effective from April 2020); He Biao (effective from May 2020); Li Guohua (office term due and retired since March 2020); Shao Guanglu (left for new appointment since January 2020).

Shareholding Structure

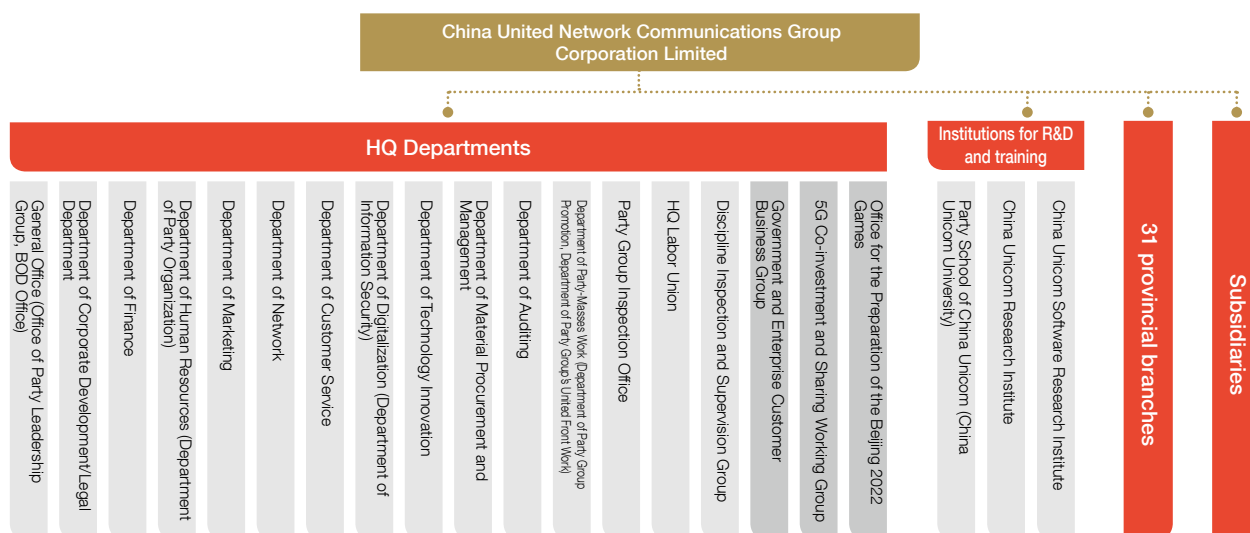


Shareholding Structure of China Unicom

Notes:

1. All data as of December 31, 2020.
2. The shares acquired by strategic investors introduced through mixed ownership reform from non-public share issuance and transfer of existing shares in 2017 totaled around 10.9 billion shares, all of which were released for transaction in November 2020.
3. Under the Phase I Scheme for restrictive incentive share plan, core employees were granted roughly 800 million restrictive shares, 300 million of which were unlocked in April 2020.
4. Shares held by China Unicom Group Corporation (BVI) Limited excluded the pre-emptive rights owned by China Unicom Group Corporation (BVI) Limited in 225,722,791 shares of China Unicom (Hong Kong) Limited.

Organization Structure



China Unicom Organization Structure

COMBATING COVID-19

Stick to the mission of battling the epidemic with all strength and serve as a key pillar in the national fight

Caught off guard by the outbreak of COVID-19, China Unicom stayed committed to the decisions and deployments made by the CPC Central Committee and the State Council and lost no time in responding to its tasks in prevention and communication guarantee. It attached equal importance to epidemic prevention and production so that efforts in the two areas can enhance each other to ensure smooth network connection, effective service and secured guarantee. Fully drawing upon its advantages in new digital technologies, China Unicom provided support to targeted epidemic prevention and enabled the resumption of work, production and interrupted education, thus contributing its due share to the fight against the epidemic and giving full play to its key role as a pillar of a major country.



🏠 Combating the Epidemic with No Effort Spared

Challenged by the biggest test of epidemic prevention and control, China Unicom acted quickly to establish its anti-epidemic system to clearly identify the responsibilities of each unit with accountability and design preventative measures dynamically based on practical conditions. On the premise of protecting the safety of employees, it made the best out of its own advantages to ensure secure communication and smooth connectivity, demonstrating the political responsibility of a centrally-administered SOE.

🚀 Quick establishment of prevention and control system

Go where there is epidemic and fight it till it perishes. China Unicom took the initiative and acted swiftly to formulate work plans and contingency plans carefully, putting in place a prevention and control system with joint efforts throughout the company to guard against every possible risk internally and externally.

A steering group was set up for epidemic prevention and control, which consists of five subgroups for comprehensive coordination, medical guarantee, humanistic care, building security and legal support respectively, and a reporting system was established to update infection cases.

A working group was established for epidemic prevention and control overseas to guide the efforts of related organizations overseas according to local conditions.

Since the outbreak, 17 meetings of the Party Leadership Group and 60 meetings of the Epidemic Prevention Office had been held and the latter issued 48 documents, making well-designed deployment in terms of the formulation of preventative measures, the scheduling of anti-epidemic materials, key communication guarantee, personnel safety, the treatment of infected employees, etc.

China Unicom was the first among centrally-administered SOEs to adopt counterpart support model for materials and strengthened the allocation of anti-epidemic materials across provinces, which effectively solved the problem of serious shortage of medical supplies in severely affected areas.

Amid the nationwide shortage of anti-epidemic materials, China Unicom Global supported domestic actions with a total of 1.1 million pairs of masks and other materials; when the epidemic sprawled across the world, China Unicom never stopped its efforts and was active in organizing material procurement to support epidemic prevention overseas.



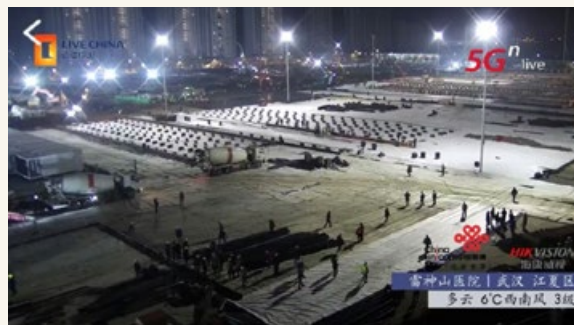
China Unicom Global checking and forwarding anti-epidemic materials

🚀 Smooth communications services guaranteed

As a state-owned telecommunications enterprise, China Unicom fully unleashed its network advantages and actively mobilized all subsidiaries and branch companies to engage in local communications support for epidemic prevention and control, setting up the “trunkline” for information transmission in this great fight.

- We focused on key customers including epidemic prevention hospitals, health administrations, CPC-related entities, governments and military units, activating/expanding 6,171 dedicated lines and providing major guarantee for 71,394 dedicated lines with zero breakdown.
- We provided service deactivation suspension in emergency to about 300 million subscribers in 29 provinces; and prioritized the work to guarantee communications for medical staff and accumulatively offered discounts or free top-ups worth of about 9.7 billion yuan to over 20,000 medical staff. In addition, a total of more than 130,000 medical staff who were China Unicom customers enjoyed free data and voice services worth of approximately 9.04 million yuan.
- We sent a total of nearly tens of billions text messages for public welfare for epidemic prevention and control and provided an overall solution of “caller ID/hang-off message” for provincial health administrations and disease control centers.
- We vigorously promoted online business processing to direct users to apply for services without leaving home and guide them to resume failed services remotely, avoiding potential cross-infection caused by on-premises services.

At the beginning of 2020, keeping in mind that “people’s interests are above everything else”, China Unicom Hubei branch company went all out to fight the epidemic. Its dedication was witnessed repeatedly from the network coverage in Huoshenshan and Leishenshan hospitals to the network guarantee for dozens of designated hospitals, from prioritized guarantee for private lines of medical institutions in the province to the network coverage in over 20 make-shift hospitals, and from the rapid network expansion within 8 hours for nucleic acid detection to emergent network recovery against challenging winter weather. A total of over 20,000 personnel-times were dispatched for guarantee missions and more than 30,000 kilometers of communications lines were inspected, which secured the smooth operation of the province’s networks and made important contributions to the fight against the epidemic.



China Unicom Special Network Team at the site of Leishenshan Hospital and the “cloud supervision” live broadcast



Beijing Tsinghua Changgong Hospital in medical consultation with Leishenshan Hospital via 5G

With the lofty ambition of “overcoming difficulties against all odds and dissipating the gloom whatever it takes”, China Unicom Zhaoqing branch company in Guangdong Province rushed to the battlefield against the epidemic and managed to swiftly activate three 5G sites for Zhaoqing’s Health Bureau and designated hospitals after 5 strenuous days. Moreover, it sent 20.767 million text messages for public welfare in 57 batches for epidemic prevention and control, and offered communications discount to those who worked for COVID control, serving local communities as the “beautiful heroes in harms way” on the very front line of the battle.



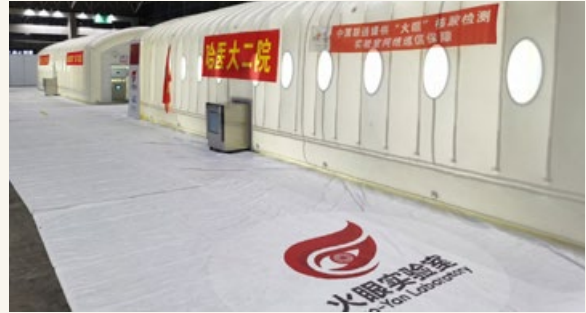
In July 2020, in the face of the increasingly severe COVID situation in Xinjiang, China Unicom Xinjiang branch acted promptly with carefully deployment and took multiple measures to ensure epidemic prevention and control. Accumulatively, it dispatched 87 personnel-times and 56 vehicle-times for communication guarantee, inspected 38 base station sites, recovered 63 failures, kept manual hotline as well as self-service up and running 7x24, and set up a remote expert support team to secure solid communication for epidemic prevention and control.

At the beginning of the 2021 New Year, a new round of epidemic swept across Hebei Province, where cities went into wartime-like state. China Unicom Hebei branch company immediately launched an emergency response plan and engaged both provincial and city level companies in joint actions against the coronavirus. China Unicom Shijiazhuang branch strengthened the scheduling of emergency personnel and rescue vehicles and after 15 hours of continued fight, it took the lead to open the first 5G base station in a centralized isolation site, laying solid foundation for further prevention and control measures. China Unicom Xingtai branch actively assisted local government and went all out to build video surveillance networks to ensure the installation and provisioning of video surveillance cameras in a total of 358 isolation sites in the urban area and 10 counties/districts, making outstanding contributions to winning the battle against the epidemic.



China Unicom Hebei branch company spared no effort in ensuring the construction of communication networks at the centralized isolation site in Zhengding

In mid-January 2021, the COVID situation in Harbin City abruptly turned severe. China Unicom Heilongjiang branch company was committed to fulfilling its responsibilities and missions and stood firmly together working day and night with "China Unicom speed" and "China Unicom commitment" to complete the communication guarantee for the "Huoyan" (fire eye) laboratory in the shortest time possible, taking practical actions to help Harbin in its targeted fight against the virus and ensure the communication "trunkline" for the safety of people in the urban area.



China Unicom Heilongjiang branch company completed communication guarantee for the "Huoyan" laboratory

Enabling the Resumption of Work and Production with Digital Technology

China Unicom took full advantage of cloud computing, big data, Internet of Things (IoT), artificial intelligence (AI) and other new digital technologies to provide intelligent mobile products for epidemic monitoring, data platform for epidemic prevention and control and innovative solutions, serving as an intelligent guard for the resumption of work, production and education.

Digital intelligence to support targeted epidemic prevention

China Unicom fully leveraged the advantage of big data, i.e., multi-source, massive, and integrated, to make epidemic prevention and control "predictable against evidence" and provided timely decision-making support for all works of life, helping realize science-based, targeted COVID control.

- 10 platforms including those for population movement, epidemic research and judgment and AI-based epidemic compliance monitoring were developed, providing more than 20,000 pieces of epidemic analysis and reports on work and production resumption to over 20 ministries and over 300 local COVID control authorities while serving people dynamic trip records for 1.4 billion times.
- "Community Risk Prediction", "Trip Record Query", "U Code for Health" and other products and services were launched to enable transparent information display and inform the general public of risks in their surroundings at any time to avoid unnecessary panics.



China Unicom "U Code for Health" based on big data

Digital technology to guarantee the resumption of work and production

Faced with the dual requirements of normalized epidemic control and orderly resumption of work and production, China Unicom innovated the big data platform, cloud-based video conferencing, remote education, AI-enabled epidemic prevention monitoring and other digital applications based on network + big data + AI key technologies to facilitate the comprehensive resumption of work, production and education and to actively serve the social and economic development.

R&D was carried out for the big data platform for the resumption of work and production.

The platform can effectively display the level of resumption of work and production in cities and key regions and also provide population data sets and reports on resumption update to support government decision-making for the resumption of work and production in an orderly manner.

Cloud-based video conferencing system was promoted.

The system was developed and promoted to help realize remote office and served more than 10,000 institutions and departments in 31 provinces with 25,000 video conferences.

The Wo Family Online Classroom was launched.

China Unicom was active in cooperating with the Ministry of Education to realize "uninterrupted classes during school closures" and launched the innovative comprehensive solution of "Wo Family Online Classroom" to all primary and middle schools.

AI-assisted protection products were developed.

The epidemic compliance monitoring system based on AI capabilities was widely used in campuses, hospitals, communities and many other scenarios, making positive contributions to China's overall coordination of epidemic prevention and control and the resumption of work and production.

SMEs were helped in financing to tide over the epidemic.

Since the outbreak of COVID-19, SMEs had been struggling in their production and operation. China Unicom built a business-financing platform to mobile bank credits toward SME credit loans. This improved the efficiency of the financial system in supporting the private economy and fostered an interactive ecosystem of "governments, banks and businesses", helping SMEs continue to develop healthily.



China Unicom's Big Data Platform for Resumption of Work and Production



China Unicom cloud-based classroom for "uninterrupted classes during school closures"

China Unicom Big Data strived to promote the integration of technology innovation into application scenarios against the epidemic, which greatly improved the efficiency of epidemic control and interpreted the smart solution to battle the virus on the front line. In September 2020, the company won the honorary title of National Advanced Group in Fighting against COVID-19.



China Unicom Jiaxing branch in Zhejiang Province faced up to challenges brought by the epidemic and deployed over 90 sets of thermal imaging-based temperature monitoring equipment in outdoor food markets, schools, hospitals, enterprises and other production and daily life scenarios to build the "first line of defense" against coronavirus. Based on its high-quality 5G network, China Unicom Jiaxing developed a local version of ETC-like verification platform called "Wo Health Code", verifying a total of 2.083 million codes. It also developed an online application system for business resumption, which effectively helped 3,715 enterprises in Tongxiang to submit applications under the principle of "online submission by businesses supported by on-site government officials".



Body Temperature Measurement Solution in Dushangang Town



Patrol robot equipped with 5G+ infrared body temperature detection

China Unicom Guangxi branch company used big data technology to provide multi-scenario and intelligent anti-epidemic services. It launched 5G-based thermal imaging body temperature measurement solution and provided it to 118 businesses, achieving contact-free temperature screening from a long distance with multiple targets and high accuracy. It promoted Unicom-DingTalk Online Classroom to tens of millions of homes with fast establishment of over-the-air teaching platform and had 91,200 registrations with an average daily active user of 15,300, ensuring that "teaching and learning will not be interrupted when schools are closed".

Caring for Employees' Life and Health

China Unicom always put the safety and health of employees first. Thanks to its prompt deployment, swift action and strict measures, the Company witnessed stable epidemic prevention and control and maintained an extremely low infection rate with zero death.

- For employees having minor children in need of nursing care and female employees during pregnancy, flexible measures were adopted such as working from home and flexible schedules.
- For employees on duty in their office, health protection measures were designed with strict control on workspace density while providing anti-epidemic materials such as masks and disinfectants.
- Actions were also taken to do a good job in epidemic prevention and control for overseas employees and their families, who enjoyed prevention materials and online psychological consultation.
- For employees and their families in isolation or stranded in affected areas, various forms of condolences and services were offered, including food delivery to the door, regular home visits through video, application for mutual aid fund and critical illness insurance, to effectively address the most direct and practical problems for employees.

Shouldering its responsibilities bravely, China Unicom Shandong branch company leveraged smart technologies, well-designed overall planning and outstanding capacity in organization and implementation to show meticulous care for the health of its employees through flexible work schedules, health monitoring, heart-warmin protection support, regular disinfection and many other concrete measures, accumulating strength to win the battle against the epidemic.



Flexible work schedule



Comprehensive disinfection on all business premises

POVERTY ALLEVIATION

win the critical battle in targeted poverty alleviation and march toward high quality life

2020 is a year to win the decisive victory in the fight against poverty. It is the aspiration of the Chinese nation for thousands of years and a great cause that will benefit hundreds of millions of people if we could win this fight as scheduled and build a moderately prosperous society in an all-round way. China Unicom keeps its mission in mind, shoulders its responsibilities and goes all out in a down-to-earth manner to form a major landscape of poverty alleviation featuring “unified leadership, professional implementation, concerted efforts and overall coordination” to pool all available resources to win the battle against poverty. As countless villages are revitalizing with changes, China Unicom has embarked on a new journey to consolidate the fruits of poverty alleviation and help the countryside gear towards high-quality development for common prosperity.





Continued Support to Steady Alleviation of Poverty

China Unicom focused on outstanding issues related to people's livelihood in poverty-stricken areas and combined local resource advantages to promote industrial development through poverty alleviation by consumption, determine assistance programs based on local industrial needs, drive employment through poverty alleviation assistance and expand social impact through brand image so as to help nurture high-quality products to assist poverty alleviation with a sustainable model of "one county, one product, one industry" for poor areas to shake off poverty.

- 1,959 villages were assisted in 5 years, involving 1,255 counties in over 3,000 poverty alleviation programs, and more than 3,100 poverty alleviation cadres were dispatched, helping over 316,000 people get rid of poverty.
- Special actions on poverty alleviation through consumption were carried out to help build brand image and create high-quality products; adverse effects of the epidemic were overcome through live streaming of product sales, one of which was the SOE Open Sales Day event on May 17 with a result of helping poor areas sell more than 65 million yuan of products.
- Focus was given on the poverty alleviation goal of "two assurances and three guarantees" in Geji County, with a total of 52.71 million yuan allocated to aid Tibet in several programs including the relocation of the Fukang community, the renovation of residential water and heating supply and the ICT upgrade for education. These programs provided support to guarantee housing safety and drinking water sanitation for local poor residents as well as to ensure compulsory education for poor students, all of which were widely praised by the Geji government and people.
- Based on poverty alleviation goals, China Unicom fostered a culture of responsibility as a centrally-administered SOE and comprehensively used 5G, online 3D panorama, Internet of Things and other technologies to carry out a series of publicity activities under the theme of "Poverty Alleviation Powered by China Unicom". Rich in content and diverse in forms, these activities promoted poverty alleviation spirits and nurtured a cultural atmosphere for poverty alleviation.

A total of

1,959

villages and

1,255

counties were assisted in 5 years,

lifting over

316,000

people out of poverty

In the past five years, a total of

764

million yuan was invested in poverty alleviation assistance through over

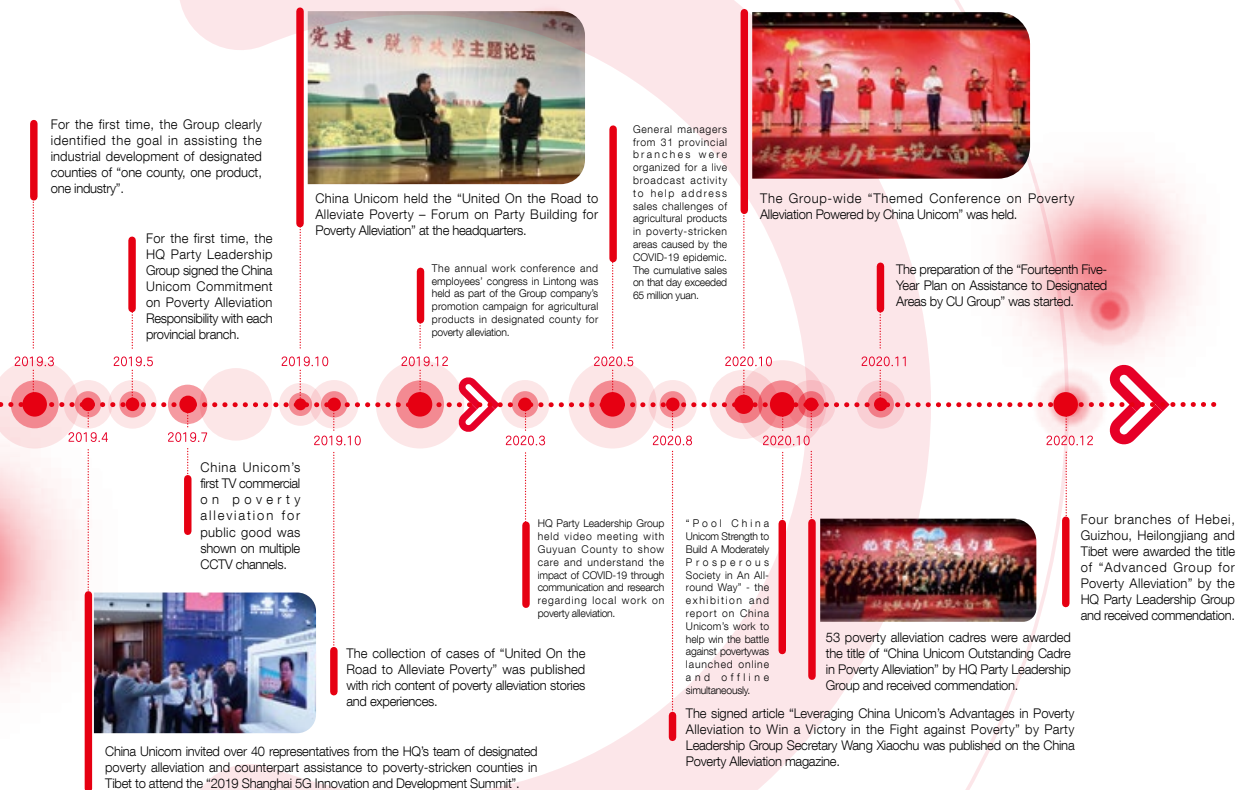
3,000

programs with over

3,100

poverty alleviation cadres dispatched

扶贫 记忆



*Note: Unless otherwise specified, the content described on this page reflects the poverty alleviation work since 2016.



- China Unicom's Poverty Alleviation Office was awarded the title of "National Advanced Group for Poverty Alleviation" by the CPC Central Committee and the State Council.
- The collection of cases on poverty alleviation through consumption won the "2020 National Award for Outstanding Typical Cases on Poverty Alleviation through Consumption" issued by the National Development and Reform Commission and was selected as the "Top 50 Special Cases on Targeted Poverty Alleviation by Chinese Enterprises".
- The case of a new model of poverty alleviation by a centrally-administered SOE under the large-scale poverty alleviation system was selected as the "Top 50 Comprehensive Cases of Targeted Poverty Alleviation by Chinese Enterprises".
- The case of poverty alleviation through industrial development in Guyuan County, Hebei Province won the "Third Ceremony of Outstanding Poverty Alleviation Cases Award" jointly selected by the Poverty Alleviation Office of the State Council and the People's Daily.

China Unicom Tibet branch company purchased agricultural machinery and equipment for Deqingzi Village and developed a full-process mechanized agricultural production model.



The case of China Unicom Guizhou branch company of helping Ceheng County to get rid of poverty through developing local banana industrial chain was selected into the "Excellent Cases of East-West Cooperation and Targeted Poverty Alleviation" by the Poverty Alleviation Office of the State Council.



China Unicom Yangquan branch in Shanxi Province was developing the forsythia planting industry in Yangshuzhuang Village.



China Unicom Qinghai branch company provided assistance to the wolfberry bud tea industry in Yangpo Village, which was awarded as a "One Village, One Product" demonstration village by the Ministry of Agriculture and Rural Affairs.



China Unicom Xiongan Industrial Internet Co., Ltd. was committed to the education informatization project in Kangbao County, involving smart campuses, education cloud platform and 5G private networks for education, to address the shortage of educational management tools and uneven distribution of teaching resources.

Help to Build Information Highway

China Unicom adhered to the sincere ideal of "People's Posts and Telecommunications for the People" and stayed true to its original aspirations with focuses on poverty-stricken areas to accelerate the construction of broadband, 4G, 5G and other infrastructures, striving to narrow the digital divide for poverty-stricken areas and continuing to optimize current packages for targeted poverty alleviation and various favorable policies so that villagers could enjoy accessible, affordable and quality communication services.

- Infrastructure construction and network coverage were speeded up in poor areas to promote the development of regional broadband and 4G network infrastructure.
- Poverty alleviation packages had full coverage in poverty-stricken areas with necessary addition and optimization according to the actual conditions of each region to ensure that packages for targeted poverty alleviation could meet user needs with "affordability"; 3G/4G mobile Internet access was guaranteed with broadband downlink speed at 100Mbps and above for poor residents to "use services well", benefiting about 2.567 million poor households in total with reduction or exemption of communication costs by 377 million yuan.
- Digital rural products were launched and the model of "communications + platform + hardware + service" was adopted to comprehensively built "digital townships" ecosystem in order to assist rural revitalization strategies, solved government difficulties and provided villagers with convenience in their daily life, covering a total of 10,000 administrative villages.

In the past 5 years, a total of

126.05 billion yuan was invested in the construction of communication infrastructure with

79,700 new wireless base stations built and

3.9089 million broadband access ports

In the past 5 years, a total of

561 million yuan of communication expenses was reduced or exempted

benefiting more than

4.3 million poor users

China Unicom Bayannur branch in Inner Mongolia was committed to addressing the communication needs of farmers and herdsmen in poverty-stricken areas and underdeveloped areas. It provided convenient services to users such as poor households and the disabled and designed love cards as well as other products for targeted poverty alleviation, benefiting 213 registered poor households with package discount reaching more than 10,000 yuan.

Marching toward a Highland of Smart Agriculture

China Unicom comprehensively used 5G, cloud computing, big data, IoT, AI and other information technologies to empower industries with local characteristics, created comprehensive solutions for smart agriculture and facilitated rural governance and ICT access in villages, promoting comprehensive agricultural upgrade, all-round progress in villages and holistic development of farmers.

- The digital rural platform was built to serve 200 towns and thousands of villages across the country, several benchmark programs were launched including those in Wenshu Town (Jiayuguan City, Gansu Province), Maochang Town (Bijie City, Guizhou) and Dapo Township (Rongan, Liuzhou) to promote digital governance and solve real problems such as eliminating unnecessary government procedures.
- Support was continued for many years with engagement in training activities for farmers' skills in using mobile applications organized by the Ministry of Agriculture and Rural Affairs. The activities in 2020 covered 309 districts and counties in 10 provinces with a total of over 300,000 person-times of participation, helping to narrow the information gap between urban and rural areas.
- Efforts were made in Yangxi of Guangdong, Zunyi of Guizhou, Shouguang of Shandong, Dali of Shaanxi and other places to build more than 80 smart agriculture and modern industrial park projects at national, provincial, municipal and county levels, and environmental monitoring was provided for 700,000 greenhouses, helping the upgrade of the agricultural industry in various places.



Smart Agriculture System

Cumulative investment of

158 million yuan in 5 years

China Unicom Ningde branch in Fujian Province continued to innovate in digital agriculture and cooperated with Fu'an Farms Agribusiness Group to build the "5G Smart Tea Farm" platform for automated tea production management, which had a successful debut at the third "Digital China" Summit, promoting rural revitalization.



Integrated management platform for smart tea farm



Smart Tea Farm

🏠 Spread of the Warmth from Poverty Alleviation for Public Good

China Unicom joined hands with its "circle of friends" to pool social resources and made active exploration in ways to effective poverty alleviation for public welfare. It built a poverty alleviation ecosystem gathering enterprises, users and the general public and carried out mobile user credit-based education support activities, voluntary teaching for children in snowland, charity activities for poverty alleviation, caring volunteer services and other activities for public welfare, in which all parties contributed their love and support to practically help alleviate poverty.

- The "Mobile Credits for Education Support" Action raised 4.387 million yuan in donations for impoverished students, involving 442,000 employees and customers.
- "Warm Scarf" and other caring activities were launched to send warmth to children in poverty-stricken areas.

More than

30,000 volunteers participated in charitable poverty alleviation actions in 5 years

China Unicom Shanghai branch company and The Paper jointly launched the voluntary teaching activity for "children in snowland". In 2020, the activity was carried out in the form of "cloud classrooms" to provide "face-to-face" classes to the children in Bilibili Meili Primary School in Weishan County, Dali, Yunnan Province. The activity had benefited nearly 8,000 students in total with donated materials worth over 1.5 million yuan.



Beating China-symbolizing Red and Communication-symbolizing Blue - China Unicom Youth League Committee and the China Youth Development Foundation donated "Warm Scarf" packages to students in Geji County, Tibet



OVERSEAS OPERATION

Endeavor for a new pattern of international connectivity to serve the mutually-reinforcing domestic and international circulations

Faced with the ever-increasing complexity, challenges and uncertainty in international situations, China Unicom was highly aware of changes, adapted to them in a scientific manner and innovated to make changes. We sailed wisely against the wind to open new landscapes in the changing situations, designed overall strategy combining domestic and overseas conditions and strived hard to facilitate the global cloud-network integration and enhance our advantages in differentiated cloud-based service capabilities to help build a new pattern of high-quality development of international business with a smooth “dual-circulation of digital economy” and to fulfill our corporate responsibilities as a global citizen.



🏠 Improvement in Cross-border Service Quality

China Unicom firmly grasped the new opportunities from global revolution and continued to improve the level of international operation to provide global corporate customers with a package of integrated, unified, end-to-end ICT services at home and abroad as well as global voice and data services to overseas consumer customers. In 2020, our overall service level continued to improve, providing customers with more innovative and favorable products and services while helping customers actively respond to changes in international situations and eliminate the adverse impact of the COVID-19 epidemic.

- In order to meet the needs of international customers, China Unicom launched integrated cloud networking services at home and abroad, which interconnected 28 resource pools of 8 overseas cloud providers with overall leadership in product functions, providing users with one/multi-point cloud access, multi-cloud connection, hybrid networking and cross-border interconnection services with the advantages of full-scenario, multi-cloud, multi-access, flexibility, manageability and self-service options.

- In spite of the epidemic, China Unicom strengthened customer care and implemented the policy of “more data with no tariff increase” in 102 popular international roaming directions, together with low-cost data packages for long-time residents in 23 popular overseas destinations, which greatly improved customer perception.

- To satisfy the highly-demanding customers in the financial industry for ultra-low latency, 9 low-latency dedicated lines were launched in 6 directions.

- China Unicom continued to deepen the policy of “speed increase with fee reduction” and achieved flat-rate day packages in a total of 197 countries and regions for international roaming, with incoming/outgoing 5G international roaming services newly opened in several countries or regions as well as multi-day flat-rate data packages for international roaming in multiple countries. In 2020, charges on outbound international roaming data decreased by 4.5% year-on-year.

- The promotional film “Stay connected no matter how big the world is” was produced to showcase the international image of China Unicom as being customer-oriented, open, innovative and committed to excellence.



Commitment to becoming the first choice of customers in various industries for “going global” and “bringing in”

Support to the “Belt and Road” Initiative

China Unicom deeply implemented the “Belt and Road” initiative based on combining domestic and overseas conditions to promote the dynamic optimization of resource allocation on a global scale and create the pattern of “one market, one network, one-stop-shop service, one system and one large-scale ecosystem cooperation” at home and abroad. We provided low-latency, high-quality communication channels to enterprises “going global” and convenience for customers to visit the “Belt and Road” countries or regions, helping realize interconnection along the “Belt and Road”.

- Market collaboration was strengthened with focus on key industries “going global” involving industrial manufacturing, finance, government media, transportation and logistics, energy, commercial retail, etc., and provided scenario-based solutions such as digital finance, cross-border WiFi operation, thermal imaging and smart stores to establish an efficient operation system with domestic and international interaction.
- Efforts were continued to build optical information channels and further expanded global interconnection capabilities, with 15 “Belt and Road” express lines opened to provide low-latency, high-quality communication channels for companies to “go global”. Focus was given to the development in China-Europe and South-Asia-Pacific directions with 4 PoPs completed (overseas business access points), totaling over 130 overseas PoPs in more than 80 countries and regions around the world; the expansion of 1,000 cabinets was completed on the third floor of the China Unicom Hong Kong Global Center, with upgrade on the core mobile network in Hong Kong to support 5G NSA; international Internet outbound bandwidth in all kinds totaled 3.9T.
- To make it easier for customers to visit the Belt and Road destinations, the flat-rate packages for international roaming covered 128 Belt and Road directions, 7 of which opened 5G outbound roaming services.
- Digital transformation was accelerated in international business to build a smart life service portal with single-point access, network-wide service and global guarantee and promote the integration and smart operation of domestic and overseas customer services and data, transforming and upgrading toward one-stop-shop global service offering.
- A unified domestic and international digital base was created to provide support to the digital production and operation of international business.
- The core “circle of friends” along the Belt and Road was strengthened to carry out special cooperation around network resources, mobile roaming and product innovation, upgrade cooperation models and accelerate the promotion of domestic and foreign ecosystem. Cooperative integration process.

Being a Good Global Citizen

China Unicom continued to improve the level of compliance operation and management, adhered to honest operation, implemented localized strategy and paid active attentions to employees and the society with frequent benefit returned to the community, all in an aim to build a mutually beneficial and win-win development community with shared future.

Operation with compliance and integrity

Relying on its global company, China Unicom operated overseas in compliance with laws and regulations, with well-established corporate governance structure and strict adherence to local market order and business rules. In 2020, in accordance our current management status and business characteristics, we combined international best practices to further improve the compliance management system, pay close attention to major risk areas and actively respond to the implementation of various countermeasures so as to ensure the legal and orderly development of overseas business activities.

- With 16 overseas operations fully covered with risk prevention under the “One Country, One Policy” scheme, China Unicom made timely revision of the compliance manual of overseas operations in accordance with the adjustments and changes in relevant local laws and regulations and performed trainings as well as risk investigations.

- In terms of submarine cable construction, active attempts were made to seek for support from the local government, meet local environment requirements and provide reasonable compensation to local residents.

- China Unicom continued to broaden its international horizons and cultivate the “U” image in depth, winning multiple international awards for integrity in management while continuously enhancing its overseas brand value.

- In 2020, there was no case of dishonesty, violation of laws and regulations, competition disorder, nor any incidents involving infringement of the rights of local people or commercial bribery.

Operation with localization and accountability

Under the principle of “one institution, one scheme, one system” and with the goal of building an agile and intelligent supply chain, China Unicom re-arranged its global supply chain for “global integration” to enable local cooperation management by regions and categories.

- 26 organizations were established around the world for service coverage in 32 countries and regions to support the development of the communications industry and promote local employment and economic growth.
- Active measures were taken in hiring local employees. As of the end of 2020, the total number of employees of China Unicom Global was 880, including 750 overseas staff and 282 overseas female employees.
- Local legal requirements were strictly followed and actions were taken to safeguard the legitimate rights and interests of local employees, respect local customs, formulate salary and welfare systems that conform to local customs and habits, formulate differentiated monetary subsidy programs and actively organize recreational and sports activities, welfare publicity, etc., caring for local employees through practical actions to fulfill social responsibilities.
- Active participation could be witnessed in various activities organized by local associations and good communication was maintained with local communities and Chinese-funded enterprises.
- The procurement plan review system was developed with scene-based procurement and standardized management to ensure the energy efficiency, environment friendliness and safety of the equipment provided by suppliers.



China Unicom Global was awarded the certificate of “Caring Company” by the Hong Kong Council of Social Service

Fulfillment of Overseas Responsibilities for Public Good

China Unicom was active in overseas activities for public welfare to show care for the society and fights against the COVID-19 epidemic, demonstrating its image as a responsible corporate.

China Unicom Global participated in the “Women in Leadership” series of exchange activities organized by the Thai-Canadian Chamber of Commerce, during which it communicated with representatives from companies founded or managed by women to promote the establishment of the sheconnects.org.



China Unicom Global participated in the charitable activity of “Computer for Every Family to Enjoy Online Learning” jointly organized by the Hong Kong Ladies Dynamic Association and the FTU Regional Service Office, during which it provided the CUniq special edition SIM cards for online learning and tablets to support such activities as an active contribution to the society.





CREATE MORE VALUE

**SOLIDIFY THE DIGITAL FOUNDATION FOR
NATIONAL CYBER STRENGTH**

Consolidating the Foundation of Digital Economy

Implementing Universal Service Programs

Enhancing Network Security Protection

Create More Value - Solidify The Digital Foundation For National Cyber Strength

Build new digital infrastructure and strengthen security. China Unicom took Xi Jinping's important narrative regarding national cyber strength as its fundamental guidance and adhered to the people-centered value proposition and basic logic to accelerate the construction of new, high-speed, mobile, secure and ubiquitous infrastructure, improve network quality and operational efficiency through digitalized operation, speed up network deployment in remote areas and ensure network information security, with an aim to continue to consolidate the foundation of the digital economy and strive to build our country into a cyber power and a digital country.

Measures adopted in 2020

- The cumulative scale of 5G base stations reached 380,000, with 40% of 5G coverage and 94% of 4G coverage by population and the network-wide VOLTE coverage reaching 96.8%.
- The total broadband ports reached 225 million, with the average access rate at 185Mbps.
- Cloud-network integration was accelerated to foster future-oriented intelligent network capabilities.
- A unified digital base and smart middle platform was built to create digital operation capabilities.
- The fifth batch of universal services were completed, involving 2,857 administrative villages with 3,073 4G base stations and 176 border stations, investment was made for the established program of this batch of service worth of 624 million yuan, and investment made in poverty alleviation through connectivity reached 330 million yuan in 2020.
- A total of 140 million fraudulent and unwanted calls as well as 1.28 billion spam messages were intercepted.

Actions to be taken in 2021

- To promote network evolution and application, vigorously expedite the commercial use of slicing, uRLLC, private network and MEC, deploy VONR on a trial basis and accelerate 10G PON deployment.
- To facilitate precise planning, improve network quality through the integration of planning, construction, maintenance, optimization and business operation, and further enhance user perception.
- To speed up cloud-network integration, promote the establishment of intelligent operation support system and improve the efficiency of network-industry collaboration.
- To continue to build an agile digital base, fasten the building of core capabilities in the middle end and build the "brain" for smart operation.
- To actively participate in universal telecommunications services and accelerate network construction in remote areas.
- To build a cyber security system around five aspects - security operation, security capability, security technology innovation, security talents and security systems to maintain national cyber information security.

5G population coverage
reaching **40%**



Average 4G
download speed
leading the industry
for **3** years in a row



4G population coverage
reaching **94%**



Improve mobile network perception

Mobile network coverage
among towns reaching
97.3%



All-network VOLTE
coverage reaching
96.8%



Coverage among
administrative villages
reaching **86%**



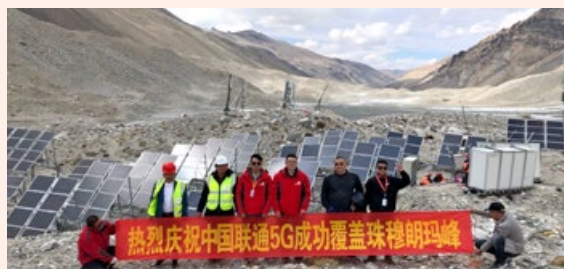
Consolidating the Foundation of Digital Economy

China Unicom firmly grasped the trend of information technology revolution to accelerate the construction of information infrastructure and consolidate the network foundation of the digital society in order to interconnect the information "artery" of the development of the digital society.

Accelerating the building of new 5G infrastructure

China Unicom deeply understood the decision and deployment by the CPC Central Committee on “accelerating the progress in new infrastructure construction such as 5G networks and data centers”, resolutely shouldered its political responsibilities as a centrally-administered SOE, vigorously promoted 5G development and joined hands with China Telecom to build the world’s first and largest 5G sharing network, with 380,000 5G base stations to 5G outdoor coverage in all cities above prefecture, key counties and developed townships in China. It also realized the first batch of large-scale commercial SA architecture in the world.

A large number of models and industry benchmarks emerged in the process of 5G rollout. In Wuhan, shared 5G base stations for the Huoshenshan Hospital was opened within record-making 36 hours; 5G base stations were built at the Everest Observation Deck at an altitude of 5,000 meters and its Camp No. 1 at an altitude of 5,200 meters, breaking the record of base station altitude; in Jiangsu, the world’s largest cable-stayed road-rail bridge – the Shanghai-Suzhou-Nantong Yangtze River Bridge – was completed with full 4G/5G full coverage under joint efforts.



China Unicom launched 24-hour live broadcast when provisioning 5G network on Mount Everest

China Unicom sped up the construction of cloud data centers with focuses on five key areas - Beijing-Tianjin-Hebei, the Yangtze River Delta, the Pearl River Delta, Sichuan-Shaanxi-Chongqing and Shandong-Henan to create a “5+2+31+X” system. The China Unicom data center brand “Smart Cloud” was nurtured for a brand new image and differentiated products and services to promote IDC value management through customer segmentation, precise layout and targeted marketing.

Directly affiliated data center bases were built and deployed in Langfang, Guian, Hohhot, Harbin, Deqing and other places, with 10 data room buildings covering a total building area of 326,000 m², 23,336 racks delivered and provisioned bandwidth of 3.9T, providing users in various industries with a series of basic IDC products such as rack rental, machine place rental, broadband rental, IP address rental and additional power supply, as well as a full set of value-added IDC products and services including security services, application services and key security guarantee services.

Promoting cloud-network integration

China Unicom closely followed the trend of future network evolution to strengthen cloud-network convergence, accelerate capacity building for cloud-network integration and continue to explore cloud-enabled, intelligent network architectures and evolution strategies with an aim to build future-oriented intelligent networks.

Speeding up cloud-network rollout



Intensive construction was realized for cloud resource pools, with over 10,000 servers delivered, to promote the construction and application of a unified monitoring platform for the cloud resource pool.

- The “6+2” regional DC layout was completed for the communication cloud, meeting the cloud deployment requirements of innovative service platforms such as network components on 5GC control planes, VoLTE ringtones and 5G messaging, as well as MEC-based service requirements.
- The “4+2” data center layout was followed for the IT cloud to meet various business needs in building internal IT systems.

Facilitating SDN networks



Almost 100% of IP backbones, smart metropolitan area networks and OTNs (optical transport network) were SDN-enabled (software-defined network), supporting automatic activation of cloud networking, 5G base station access, premium government/enterprise networks and other services.

Building low-latency networks



The latency of China169 backbone network was continuously optimized to ensure better users perception. During the year, the latency index was optimized by more than 1.5ms and the average latency of the entire network fell down below 31ms, maintaining industry leadership.

China Unicom and Huawei jointly released the White Paper on All-optical Bases in the Cloud Era, which is the first to propose an all-optical base with comprehensive carrying capacity for digital transformation, fully supporting the industry's digital transformation and the development needs for new cloud services while providing customers with customization and differentiated telecom services.



Press release for the White Paper on All-optical Base in the Cloud Era

Optimizing network experience

China Unicom was committed to building a premium-quality network with excellent experience to enable continuously improved network coverage, enhanced network quality and better network resource efficiency through precise construction, providing high-quality network service support for a variety of business applications.

Improving mobile network perception

In 2020, 5G population coverage reached 40%, 4G coverage reached 94% and the network-wide VOLTE coverage rate was 96.8%; the average 4G download rate remained to lead the industry for three consecutive years; the mobile network coverage in townships reached 97.3% and coverage in administrative villages reached 86%.

Based on the characteristics of 5G technologies and supplemented by AI, big data and other new technologies, China Unicom Qingdao branch provided personalized, flexible and convenient enterprise-specific mobile networks to ensure good network experience.

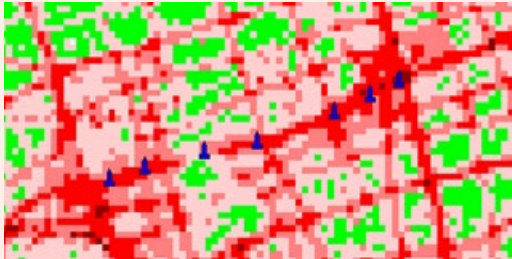
Expanding broadband network coverage

In 2020, the investment in broadband access was 2.05 billion yuan, building 8.47 million broadband ports, adding up the total number of ports to 225 million to cover 380 million residential buildings 69,000 commercial buildings with broadband network at an average access rate of 185Mbps, or a year-on-year increase of 24%.

Carrying out targeted network construction

China Unicom made targeted and efficient investment based on the O+B big data analysis. Multi-dimensional data overlay was used for key cities and areas to accurately identify problematic areas and effectively improve network quality and user perception. In 2020, there was a total of 2,229 complaint-driven construction tasks, of which 2,137 were completed, or a completion rate of 96%; in other cities and regions, focuses were given on 5G terminals and business convergence areas for targeted construction and continuous improvement in 5G user access rate, which exceeded 50% by the end of 2020.

In 2020, China Unicom Shanghai branch company carried out the comprehensive renovation of the East Nanjing Road Smart City Information Project. The new 5G renovation project adopted MDT-enabled population flow big data with accurately selected sites, greatly improving the coverage of wireless communication signals along the East Nanjing Road with 5G coverage above 95%.



5G sites planned based on MDT



Illustration of the 5G Mozaic Tower on East Nanjing Road

Performing digitalized operation

In 2020, China Unicom further advanced its digital transformation strategy to build a unified digital base and smart middle-end platform, which enabled digital operation capabilities, significantly improved the operational efficiency and served customers in a faster and more convenient way.

Building a unified digital base

Based on its advantages of independent IT R&D, China Unicom completed the integration of B/M/D domains and primarily formed an agile digital base featuring "common platform, shared capability, shared technology stack and common R&D system" for one-stop-shop resource acceptance, unified monitoring and unified operation.

- Provided application solutions: The cloud platform offered 8 categories of 183 components, with internal services to the headquarters and over 40 branch companies, supporting more than 380 applications.
- Actively carried out external empowerment: PaaS products and privatization deployment plans were exported to the "Wo cloud" for service support to Perfect (China) in Zhongshan, the National University of Defense Technology, Hit-genius, Shandong HighSpeed Group and other government and enterprise customers.

Building capabilities in smart middle-end

Five smart middle-ends were build to create the new core engine of digital IT for business-oriented, management-oriented and network-oriented agile empowerment and to accelerate product innovation, realize excellent customer experience, improve operational efficiency and prosperize ecosystem cooperation.

- Public middle-end: empowered the front-end, connected core processes and data and improved sharing and reuse capabilities, winning 970 million times recommendation of full customer value operation strategies and cumulative 9.41 million orders.
- Government-enterprise middle-end: completed the online government-enterprise portal for customers; optimized and innovated headlines and government-enterprise assistants for first-line staff, producing a total of 267,000 business opportunities; achieved BO connection of dual-line business in 31 provinces in a market-oriented manner; created one-stop-shop services for ecosystem partners, bringing together 1,152 partners.
- Network middle-end: decoupled and constructed 10 major competence centers; provided over 300 API services through resource scheduling system with 51 AI models and 178 network data services, and realized dual-line business connection in 5 days.
- Management middle-end: 1,170 application certifications and were made accessible to user centers and process centers and access was also made to 2,383 process templates with 35 open capabilities; insufficiencies in contracts and business opportunities were made up for to fully empower government and enterprises online.
- Data middle-end: optimized and integrated the basic capabilities of data centers and strengthened big data empowerment. The data service APIs were called more than 29 billion times, enabling 78 scenarios and terminal sales in digital business outlets, with weekly sales volume increasing by 259%.

China Unicom Hainan branch company expanded and strengthened its powerful big data platform to enhance its real-time processing capabilities, support real-time data display, real-time scenario-based marketing, optimize smart decision-making systems, business decision-making APPs and interactive platforms, and build Internet-based digital map capabilities with electronic parameter function of the IDS smart decision-making system to realize data collection and distribution of various resource information in map-defined marketing areas.

Implementing Universal Service Programs

China Unicom always adhered to the people-centered development philosophy and took the improvement of people's well-being as our starting point and goal of digital development to serve the country's major strategies and the overall situation of local socio-economic development and speed up the rollout of information infrastructures in rural and remote areas to benefit the people with ICTs.

The fifth batch of universal services were completed, involving 2,857 administrative villages with 3,073 4G base stations and 176 border stations, investing 624 million yuan in the established fifth batch of universal service projects. The bidding and implementation of the sixth batch of China Unicom universal telecom service pilots were further promoted, involving about 1,122 administrative villages. After the first to sixth batches of rural universal service pilots and the China Unicom special program on 4G networks for poverty alleviation, a total of 139 cities in 24 provinces were covered by 4G networks in remote rural areas, involving 8,275 administrative villages, of which 14,669 were covered by 4G base stations and 306,000 enjoyed broadband access, vigorously promoting networking rollout for rural revitalization.

In line with the original inspiration to benefitting the people's livelihood and do practical things for the people, China Unicom Yili branch in Xinjiang launched the "Rural Universal Broadband Service" program to undertake the task of broadband rollout in rural and remote villages directly under the Yili Prefecture. Since 2017, a total of 70 administrative villages had finished broadband deployment, building 3,136 network ports for more than 3,000 users to enjoy broadband access with a bandwidth of 50M or above, realizing "fiber network for Yili".



China Unicom Hunan branch company further promoted universal telecom services and continued to improve network coverage in rural and remote areas. A total of 626 rural sites were built and additional 592 administrative villages enjoyed wireless network coverage, benefiting a large number of rural customers in six cities of Zhuzhou, Xiangtan, Zhangjiajie, Yueyang, Hengyang and Yiyang with stable and high-quality broadband network services as a bridge to communicate with the outside world.



Enhancing Network Security Protection

Without network security, there will be no national security, social stability and the guaranteed interests of the people. Guarding national network security as its mission, China Unicom accelerated the building of information infrastructure security guarantee system, improved network security governance capabilities with full-scale awareness of network security situations around the clock, prevented online ideological risks and used digital technologies to build a “firewall” for economic and social development as a means to ensuring high-quality development and people's happiness while helping build a safe China at higher level.

Striving to ensure network security

China Unicom regarded network information security guarantee as an important mission of homeland security responsibility and adhered to well-planned top-level design in building a “five-complete” network information security system, optimizing network security products and integrating secure development into all areas and the entire process of the Company's development, striving hard to improve security protection ability.

Enhancing active defense capabilities

- Promoted the improvement of capabilities in managing public Internet security threats, with monitoring and handling capabilities reaching 39Tbps at the mobile Internet level to achieve full coverage of monitoring on 3G/4G/5G mobile core networks; two-way traffic monitoring and handling capabilities were enabled at the broadband Internet level for 20T link bandwidth.
- Formed a comprehensive monitoring and handling capability regarding malicious network resources, malicious programs, Trojan horses, viruses and botnets, effectively reducing attack and influences from botnets, Trojan horse viruses and malicious programs.

Building capabilities in safe products

- Actively promoted the development, rollout and deployment of DDoS protection capabilities, with the protection of the entire network reaching over 5T, effectively improving network robustness of the system-wide network and internal systems.
- Carried out the management and expansion of 4A platform for basic networks to realize unified management of 691 network resource domains and 8,521 operation and maintenance accounts nationwide, effectively supporting basic network security management.
- Completed the development, construction and deployment of DDoS protection, domain name protection, website security monitoring, website firewall (cloud WAF), vulnerability scanning, intelligent traffic filtering and other unified security capability management platforms as well as five security resource pools.

China Unicom held the 2020 Cyber Security Skills Competition and the National Industrial Internet Security Technology Skills Contest in a way that competitions, trainings and learning could reinforce each other. Through the competitions, China Unicom's network security protection capabilities were further enhanced and the skill level of professional network security technicians were greatly improved.

Combating communications fraud

China Unicom resolutely implemented national requirements on preventing and combating communication information frauds to maintain normal communication order, protect personal data privacy and safeguard the legitimate rights and interests of subscribers.

- Improved the level of data security management, carried out special investigations on the protection of personal information with joint prevention and control of COVID-19 epidemic, completed special rectification of APP-related infringement upon user rights and interests, and conducted offline handling of 2 APPs while ordering rectification of 9 APPs within a time limit.
- Deeply carried out control on fraudulent calls, unwanted calls and spam SMSs, and implemented intensive deployment of monitoring and disposal systems targeting fraudulent and unwanted calls. Provided unwanted call shield service based on customer willingness to answer, which was widely recognized by subscribers. In 2020, a total of 140 million fraudulent and unwanted calls as well as 1.28 billion spam SMSs were shielded while 25,000 fraudulent calls, 157,000 unwanted calls and 56,000 spam SMSs were reported.
- Enhanced publicity on customer safety awareness and guidance, made full use of traditional media, new media, SMS, MMS and other publicity channels to promptly educate and remind users of various basic knowledge on information security, and provided customers with overseas call reminder services, resulting in an average of 42.37 million reminders per month.

China Unicom's anti-fraud capabilities based on big data made breakthrough progresses with the “Big data-enabled anti-fraud system” awarded as the “Pilot Demonstration Project for Network Security Technology Application” by MIIT. It established an anti-fraud joint laboratory in cooperation with CAICT to enhance its industry influence.

China Unicom Sichuan branch company built anti-fraud intelligent monitoring and handling platforms and tools, strengthened big data analysis and early warning capabilities targeting suspected fraudulent calls within the province and improved the accuracy of fraudulent call detection, achieving outstanding results in precise fraud prevention. In 2020, over 5,000 fraudulent and suspicious numbers were deactivated and more than 500 channels were punished and rectified. This effectively curbed the proliferation of fraud-making SIM cards and reduced the rate of telecom-related fraud cases to the lowest level among operators in the province according to the Ministry of Public Security.

PURSUE DEVELOPMENT

IMPROVE PEOPLE'S LIVELIHOOD
THROUGH DIGITAL MEANS

Sharing Digital Development Dividends

Serving the Winter Olympics with Ingenuity

Securing Guarantee against All Odds

Full Commitment to Public Good in Communities



Pursue Development - Improve People's Livelihood Through Digital Means

The development of information infrastructure and the iterative innovation of digital technology have allowed people to enjoy a sense of reward, happiness and security. China Unicom shouldered the mission of building national cyber strength and relied on high-quality ICT infrastructure to continuously enrich the content of communication products and services and vigorously improve network quality and customer experience. The Company was committed to improving the country's overall information technology development level to provide customers with satisfactory and high-quality communication services and allow more consumers to share the dividends of technological progress with better service experience.

Measures adopted in 2020

- Positioned to "create an emotion-based smart life", the brand renewal project was launched.
- Accelerated the promotion of smart home products and launched innovative products such as 5G SMS, video ring back tones and mobile phone butlers to meet people's needs for high-quality life.
- Continued to promote the "speed increase with fee reduction" initiative, further reducing the average tariffs of broadband and Internet dedicated lines for corporate customers by over 15%.
- Overcame major challenges caused by extreme cold and COVID-19 in the ingenious building of the Winter Olympics networks to ensure network readiness on time.
- Effectively responded to the heaviest flood situation ever since 1998, running the entire network smoothly with zero casualties.
- Actively carried out voluntary activities and charity donations to pay back to the society wholeheartedly.

Actions to be taken in 2021

- To research and develop innovative products, enrich the product matrix and build an ecosystem of smart homes and digital entertainment homes.
- To build the "1+N+1" service system as an overall goal to create high-quality services.
- To promote 5G package series and speed up the migration of incumbent users to 5G packages to bring more benefits to subscribers.
- To create a complete Winter Olympics communication guarantee system and use 5G to empower a Smart Winter Olympics in order to contribute to satisfying the requirements of "simple, safe and outstanding" Games.
- To optimize the contingency plan of communication guarantee, carry out investigation on hidden dangers in advance and organize emergency drills.
- To actively participate in various charity activities and build a brand of volunteer service.

Sharing Digital Development Dividends

Adhering to the concept of innovation and sharing, China Unicom continued to explore innovative models and methods to upgrade its products, channels, brands, tariff designs and service levels to a new height, doing its best to facilitate the sharing of dividends from digital economy development by the whole society.

Launching the brand renewal program

China Unicom attached great importance to the leading role and value of the brand in its development and launched the brand renewal program in an all-round way, so that the China Unicom logo of Chinese Knot would remind people of happiness, innovation and wisdom, connecting all corners of the world, millions of households and thousands of industries to embrace the smart future with brand new attitude.

Strengthening brand management standards

China Unicom developed its unique brand strategy, optimized brand positioning, built a brand strategy model, formulated related rules and specifications for China Unicom brand building and management and further regulated the VI visual system, brand architecture, brand building, brand platform and brand testing to improve the brand management system.

Nurturing brand connotation

China Unicom's renewed brand was positioned to "create an emotion-based smart life" with an aim to nurture a image of world-class, centrally-administered SOE with harmony, emotion, the common touch and humanistic spirit, create high-value services for consumers, provide industry customers with new development momentum and work with partners to build a mutually reinforcing ecosystem.



China Unicom brand tagline



5Gⁿ brand

Guarding against false publicity

The Company strictly followed the Advertising Law and relevant laws and regulations, carefully checked the content of online service publicity and regulated the publicity language for package marketing activities to ensure that all publicity content is rule-based and accurate. We continued to optimize promotional language to truthfully inform users of reward conditions in the promoted packages, provide consumers with warnings of potential risks and enhance users' understanding of products and services.

- In package tariff designs and promotional activities, unreasonable conditions were not set to restrict customers from free choice; if reward conditions were attached, reliable methods were adopted to remind customers to understand relevant agreements.
- In the tariff design for integrated packages, independent services and products must have corresponding individual offering on sale and publicized at the same time.
- The publicity language for packages and marketing activities was standardized and polite and the content was accurate and consistent with characteristics of the times. There was no one-sided exaggeration of selling points, confusing tariff discounts or any deliberately produced language to attract attention and cause misunderstanding among customers.

In order to create a full-scenario, three-dimensional, high-speed Internet access environment for customers, China Unicom pioneered in proposing the concept of "Triple-Gigabit" access and cooperated with CCTV, satellite TV channels, the Internet media, etc. in publicity activities tagged "Live like this with Gigabit access" on Weibo and Tik Tok. It launched the first operator's mini sticker game "I am the King of Triple-Gigabit", a Tik Tok challenge contest that won the 9th Golden Bee Award for Social Media Marketing.



"Gigabit 5G, Gigabit fiber broadband and Gigabit Wi-Fi" to add color to the new ecosystem of 5Gⁿ digital life

The "Ping Pong at Wo" online challenge, the "Challenge the King in Bouncing the Ping Pong Ball" and other online series of contests were organized to popularize and develop table tennis during the epidemic. The cumulative number of participants reached 630,000 with 210 million times of online viewing, winning the "Popular Online Sports and Cultural Activities" award from the Beijing Olympic City Development Association.



Table tennis players of the national team were invited to help develop the first Ping Pong mystery box

Innovating for intelligent product experience

China Unicom insisted on innovation as the driving force for high-quality development. Through product life cycle management, we established a prioritized promotion mechanism for our own products as well as a classified management mechanism for public innovative products. We focused on the area of consumption upgrade in product innovation to provide users with smarter life experience. The total number of users served by China Unicom reached 440 million, with 306 million active mobile users, 270 million 4G users and 86.1 million households with fixed broadband access. The penetration of converged services among fixed broadband subscribers reached 64%, a year-on-year increase of 5 percentage points.

Building industry-leading "cross-region" service capabilities

In order to meet the needs of the people for services in different places due to mobility, China Unicom relied on its advantages of intensive IT solutions to provide the first-in-industry, full-range cross-region services with the first launch of a cross-region integrated product for real-time balance sharing. As of the end of December, cross-region services nationwide received accumulative application of nearly 10 million.

Creating high-traffic Apps to enrich lifestyle services

Based on our communications services, we pooled internal and external traffic to create high-traffic Apps for comprehensive lifestyle services and build three ecosystems of smart life, smart communication and smart entertainment, bringing more convenience to the general people. Through the reconstruction of the mobile credit operation model, the redemption of mobile account credits was shifted from unilateral to bilateral exchange with Internet-based points to enable the high-traffic Apps to attract 92.159 million active users monthly, or an increase of 26.9%, well received by customers.

Upgrading Internet-based products for smart home

China Unicom continued to improve the "1+4+X" smart home product system, promoted the large-scale development of core services such as "Wo Family TV, Wo Family networking, Wo Family fixed telephony and Wo Family surveillance", and launched 5G messaging, video ring back tones, mobile phone butlers and other innovative products, continuing to meet the users' diversified needs for home application including "HD video, intelligent networking, security monitoring and AI-powered intelligent voice". We coordinated the efforts of all parties across the industrial chain and facilitated the establishment and development of smart home product ecosystem to provide users with smarter and warmer home lifestyle services.

Wo Home Surveillance

- Used in local public security engineering platform and comprehensive governance platform in Hunan, Henan, Anhui and other places.
- Applied in centralized monitoring of epidemic-stricken areas and key populations in Chongqing, Heilongjiang, Beijing, Shandong and other places.
- Used in kindergarten surveillance in Baoding, Hebei Province and in care for the elderly in nursing homes in Heilongjiang, Jilin and other places.

Continuing to improve customer service reputation

China Unicom adopted end-to-end customer experience management, established a smart customer service system, built its service experience brand, strengthened closed-loop trouble-shooting operation on all issues and promoted transparent consumption for continuous improvement in service perception and service level.

More considerate customer experience

The Company deeply integrated customer experience management into all aspects of production and operation, continuously optimized business rules and processes and established the product manager accountability system to keep improving product and service quality.

- Established an end-to-end, full-scenario and full-life cycle real-time experience evaluation system to assess service quality with the voice of customers and promote process reform and service transformation to the benefit of customers.
- Created an intelligent, intensive, one-stop-shop smart customer service system and relied on fully Internet-based intelligent means to creating a "full-scenario service map" to achieve the production and delivery capabilities featuring "online/offline collaboration and integration" at service outlets, with 71% coverage of smart hotline services.
- Promoted the appointment-based broadband installation and relocation as well as repair services, achieving over 75% of the appointment rate for installation and maintenance services.
- During the epidemic, CPC Party members and cadres working with customer service hotlines nationwide assumed strong responsibilities in ensuring the 24/7 uninterrupted hotline service.
- Won the China Best Customer Contact Center: Big Data Application Award issued by the Organizing Committee for the Selection of China Best Customer Contact Center & Customer Experience at the 2020 (13th) "Golden Voice Award" ceremony.

China Unicom Jiangsu branch company translated intelligent services with "professionalism, vitality, carefulness and consideration" and realized unified operation of all trouble tickets across the province-wide network, comprehensively improving both hotline and complaint satisfaction.



More convenient customer service

Surveys on users and frontline marketing teams were conducted periodically to establish a product evaluation system and a feedback evaluation system for frontline staff, continuously improving service levels.

- Optimized the simple acceptance function of cBSS2.0 integrated services to shorten the waiting time of users; promoted the use of "form-free e-templates outside service outlets" to enhance service handling compliance on online channels with improved efficiency.
- Carried out innovative pilots on "electronic identity authentication" in 6 provinces to build nation-wide capabilities in single-point ID issuance with online/offline application, providing users with convenient services.
- Login-free top-up option was enabled on mobile Apps, online service portals and "green tracks" for mobile and fixedline users under abnormal subscription, making payment services more convenient.
- Optimized the management of "lost account deactivation/activation" services for mobile users, strengthened the security in verifying deactivation service and provided more convenient reporting services to reduce customers' risk of property loss and better protect customer rights.

More benefit in number portability

Adhering to our original aspiration of number portability for the benefit of the people, China Unicom developed comprehensive regulations on number portability services in strict compliance with the "nine bans" and "five prohibitions" and continued to improve customer experience of number portability for stable operation, steady decline in customer complaints, ever-increasing customer recognition and gradually progress in service quality.

- Participated in number portability standardization such as the revision of interactive specifications and the research and formulation of technical standards for regulatory platforms.
- Continued to strengthen trainings of front-line service staff to ensure good attitude and professional response, providing customers with satisfactory number portability services.
- Launched cross-region activation service for portable numbers to allow customers to be activated with other operators anytime, anywhere, after which they could enjoy more than 20 types of cross-region services and real-time balance sharing as a cross-region integrated service.

More reliable customer service reputation

The Company maintained close contact with customers and comprehensively enhanced customer service brand awareness, delivering positive energy to customers.

- Diversified the means to customer service approaches through short video dissemination and live streaming interaction. A total of 3,376 video clips were produced and launched throughout the year, making China Unicom the largest among central SOEs in terms of customer service scale on Tik Tok and bilibili.com and the first on Kuaishou.
- In 2020, the overall NPS customer satisfaction was improving, with mobile network scoring 5.5 points higher through annual self-improvement and the broadband scoring 7.6 points higher. Among them, the mobile network enjoyed more significantly year-on-year increase of 9.5 points from self-improvement; business NPS increased by 1.2 points from self-improvement, maintaining an industry leadership; service NPS showed an upward momentum, with an increase of 15.3 points from self-improvement. The overall MIIT satisfaction increased to 81.32 points, a year-on-year increase of 0.21 points, making China Unicom the only one of the three operators showing positive growth.

Better service quality

Adhering to problem-oriented approaches, China Unicom deepened the unified and standardized management of customer complaint handling throughout the entire operation process on all channels under all scenarios. We strengthened closed-loop operation for complaints received in the whole system, enhanced pre-authorized solutions, smoothened complaint report channels, initiated complaint-related customer satisfaction feedback survey and realized normalized operation for employee-related issues, following up 83 clusters of key problems while verifying and solving 49 cases throughout the year.

- In 2020, the number of complaints submitted to MIIT dropped by 35.2%, leading the industry in terms of complaint decline.
- Made accessible the 10010 hotline and other complaint channels, with CU HQ's resolution rate up by 21.7 percentage points and satisfaction rate up by 13.1 percentage points.

More transparent and standardized consumption

China Unicom seriously implemented the Law of the People's Republic of China on Protection of Consumer Rights and Interests and other laws and regulations related to the protection of customer rights and interests, strictly regulated billing and charging behaviors, protected customers' right to know about consumption and services, and strengthened consumer education on the knowledge of products and services.

- Organized provincial branches to check their packages on sale, publicized list-styled, standardized tariff designs and set up display areas in business outlets and on mobile Apps and online channels.
- Continued to optimize form-free templates to ensure that customers were well informed of related service content and time limit to guarantee informed consumption by customers.
- Combined online Apps and offline business outlets and leveraged both traditional media and new Internet-based media to publicize various product and service information to consumers in a prompt, truthful, accurate and easily understandable manner.
- Strictly prohibited the illegal marketing behaviors such as bundled sales and unauthorized modification of customer packages, and severely punished behaviors of activating, testing, modifying or customizing services without customer consent.

Integrating online and offline channels

China Unicom continued to promote channel model transformation and improved integrated online/offline operation capabilities through measures such as less focus on touchpoints but more priority in the middle-end, online/offline integration and cross-industry ecosystem cooperation to create a smart, open and integrated channel ecosystem.

Accelerating the upgrade of online/offline integrated experience

Leveraging big data and other intelligent means and drawing upon the agile supply chain as a guarantee, China Unicom strengthened the collaborative operation capabilities between its own channels and partner channels online and offline based on the smart middle-end to continue to create digital OMO (online and offline integration) channel system.

- Took high-traffic APPs as the enabler to integrate internal and external resources, converge traffic from inside and outside the Company, and share online/offline resources through cloud stores, live streaming, scan a code to be called, etc., in order to promote digitalized operation of business outlets.
- Built integrated online/offline capabilities of cloud stores, provided capability support including bonus collection, online installment (for new users), one-click shipment from provincial-level warehouse, terminal sales, customer acquisition as well as embedding on mobile Apps or enterprise WeChat, and started cooperation with Alipay, Meituan and other App champions, resulting in a total of 13,000 cloud stores under self-owned service outlets in 31 provinces.
- Enhanced digital capabilities, optimized and adjusted the layout of physical channels, and integrated marketing tools. The first batch of pilot province branches had completed the renewal of marketing tools, raising digitalized customer acquisition from 38.2% to 52.1%.

Promoting the upgrade of Internet-based services

We closely followed user demands and accelerated the development of online channels to provide users with the experience of more convenient online services.

- Consolidated the cooperation with Internet champions to expand cost-effective touchpoints.
- Built traffic-generating platform and quickly expanded cooperation resources through measures such as product innovation, cooperation through champion touchpoints and channel collaboration to open up a new pattern of local traffic generation; developed differentiated packages of rights, worked together with top influencers on multiple online platform in live-streaming, and strengthened online collaboration between governments and business entities, generating 1,800 active touchpoints.
- Promoted the comprehensive digital operation of business outlets and improved channel efficiency through live streaming in marketing. At the beginning of 2020, the China Unicom Live Streaming Experience Camp kicked off its first phase, with the first batch of "star anchors" from all provinces to help epidemic prevention and control, targeted poverty alleviation and industrial cooperation and also to promote new 5G terminals, technologies, applications and privileges. A total of 22,000 live streaming events were organized in thousands of service outlets and stores.

In order to meet the individualized needs of customers for privilege products, each provincial branch teamed up with partners to explore and design regionally differentiated privilege packages, which had been launched in 2B/2C cross-industry cooperation programs with diversified offerings such as the Overwatch credits in Shanghai, free data for Sanguosha online gaming in Guangdong, Shengdianhua membership privileges for shopping discounts and gas station gift cards in Beijing.



Selection of "Star Anchor" for live streaming by China Unicom Gansu branch company

Upgrading efficiency of self-owned business outlets

Advanced the digital transformation of business outlets from the customer perspective to improve the comprehensive operational efficiency and provide customers with more thoughtful services in business outlets.

- In order to fully protect consumers' right to know, China Unicom prepared white papers for products on sale and launched publicity columns online to display relevant information of products on sale such as package tariffs, service contents, time limits and promotions.
- Organized regular mini lecture activities on topics such as 5G knowledge and smartphone basics, so that customers could experience real products on site and know more about the industry.
- Iteratively expanded light touchpoints with different industries focusing on four major scenarios of rural areas, campuses, communities and CBDs to create micro ecosystems, with the number totaling over 20,000.

China Unicom Tianjin branch company drew upon high-traffic Apps and other intelligent means for applications such as intelligent early warning and number calling in business outlets, bringing customers a digitalized service experience.

Deeply expediting network speed increase and fee reduction

China Unicom conscientiously implemented the national initiative for network speed increase and fee reduction and established a special steering group to further bring down the unit price of mobile data by adding in-package allotment, cutting down beyond-package unit prices and introducing discounted packages. We also focused on SMEs and manufacturing enterprises heavily affected by COVID-19 and leveraged speed-up and discount combinations as the main measures to facilitate the reduction of business costs on production and operation, further bringing down the average tariffs for enterprise customers in broadband and Internet dedicated lines by over 15%. Moreover, we further satisfied consumer demands, accelerated the pace of high-quality development and promoted the development of the digital economy and the upgrading of information consumption.

Speed increase:

More happiness with Gigabit 5G, greater accessibility for consumers

Over **8** times of increase in average download rate of fixed broadband

More than **380,000** 5G base stations built

"Triple-Gigabit Era" **at your fingertips**

Fee reduction:

Substantially more benefits for greater affordability to consumers

Over **95%** decrease in the average tariff of mobile data in five years

Over **15%** decline in enterprise broadband tariff in 2020

1.947 million registered poor households benefited

Service:

Innovative and more thoughtful services for greater consumer experience

Overall satisfaction improved throughout the year

Cross-region services and products launched with emotion

ICT advantages unleashed to build a platform to benefit enterprises

Caring for the disabled and the elderly

China Unicom sincerely engaged in caring for the disabled, elderly adults living alone and other underprivileged groups and served them equally with customized services through technology innovation, accessibility environment and tariff discounts.

- Improved the accessibility environment with green tracks and exclusive reception seats to provide priority services for people with difficulties in vision, hearing and speech, and brought convenience for customers using guide dogs to visit business outlets.
- Designed tariffs discounts, expert services, exclusive facilities and other services for the needs of different groups.

- Actively promoted the innovation in ICTs and AI technology to enable easy communication with hearing-impaired customers and launched the “Worry-free King Card” for 20 million people across the country with hearing impairment, which was awarded the “Top Ten Excellent Cases in Information Accessibility in 2020” by the China Disabled Persons’ Federation.
- Provided special SIM cards for the elderly with additional functions including timed voice calls, fraudulent call blocking and location check & trace to improve the life safety of the elderly; regularly organized mini to help the elderly learn to use smart phones.



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

China Unicom Taizhou branch in Jiangsu Province held an evaluation event for the “Worry-free King Card” under the theme of “Technology with Love to Hear the Sound of the World”, during which the hearing-impaired people were invited to experience the first accessible communication product in China. The product was the fruit of AI technology innovation after over 500 days, involving 100 upgrade iterations, 30,000 internal testings and trainings for 60,000 people. A total of more than 330 hearing-impaired people were invited on site to participate and experience the happy surprise brought to them by technological innovations.

Serving the Winter Olympics with Ingenuity

As the only official partner of the Olympic and Paralympic Winter Games Beijing 2022 (the Games) for communication services, China Unicom adhered to the philosophy of “holding the Games in a green, shared, open and clean manner” and seriously followed the requirements for the Games to be “simple, safe and wonderful” based on the strategy of “Smart Olympic Winter Games” to power the innovation in the Olympic Movement with an intelligent China Unicom, demonstrating the ingenuity of a centrally-administered SOE.

Strengthening responsibilities and fulfilling commitments

Thoroughly implementing the instructions and guidance of CPC General Secretary Xi Jinping regarding the Games as well as the relevant requirements of the Beijing Organizing Committee for the 2022 Olympic and Paralympic Winter Games (Beijing 2022), China Unicom demonstrated its responsibilities as a central SOE with strengthened political commitments to secure all preparatory work in every aspect so as to make positive contributions to a wonderful, extraordinary and outstanding Games.

- Made the best efforts in Beijing-Hebei collaboration and built a network of excellence for the Games. Fully implemented the requirements of the Beijing 2022 regarding communication services and always made plans in accordance with the core concept of one common network for three competition zones in Beijing and Zhangjiakou to ensure consistent communication service standards and play a leading role in the comprehensive implementation of the Beijing-Tianjin-Hebei coordinated development strategy.
- Built networks with ingenuity to ensure network readiness on schedule. Overcame major challenges caused by extreme cold and the COVID-19 epidemic and advanced deployment progresses as scheduled without any interruption, weakness or sub-standard actions through strict implementation of prevention and control measures, innovative working methods in spite of various difficulties.
- Carefully designed the guarantee system to guard against any unexpected risks at Games-time. Standardized communication guarantee processes and unified guarantee standards to form preliminary guarantee capability; ensured the guarantee teams to be in place based on well-designed priorities, plans and batches for secure, reliable, stable and orderly operation of the network at Games-time.

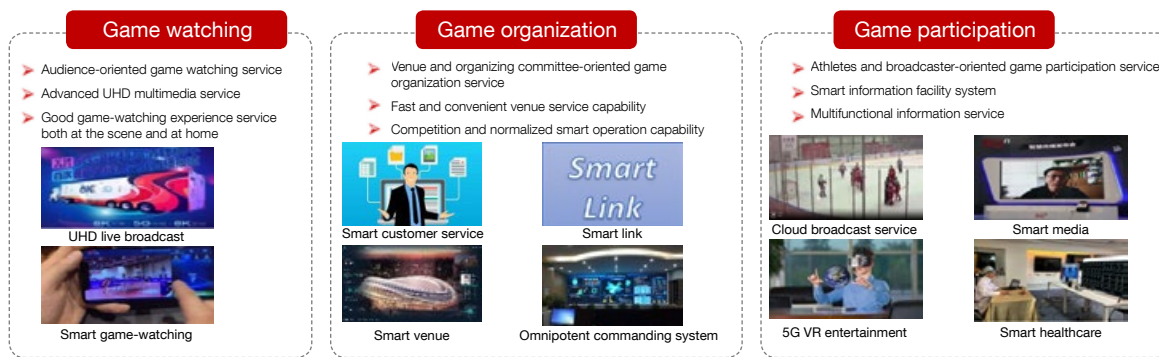
Empowering Smart Games with 5G

As the “innovation leader in the 5G era”, China Unicom leveraged innovative applications in 5G technologies, cloud broadcasting, data sharing and other fields to empower smart, technology-driven Games to demonstrate China’s technological strength.

- Took the lead in announcing the core goal to empower “Smart Games” with 5G technology at the core to become a strategic leader of the “Smart Games”.
- Created a business innovation system covering ten major applications in three scenarios of “viewing, participating and hosting the Games” for comprehensive empowerment.
- As one of the key projects in Beijing to support technology-driven Games, China Unicom took the lead in establishing an international cloud broadcasting company to provide technical services for coordinated, convenient and flexible event broadcasting across multiple locations around the world and effectively enhance the advantages of Beijing as a technology and innovation hub and from the development of digital industry, growing the digital economy in China.



China Unicom 5G to empower Smart Games



On August 8, 2020, China Unicom and Sinopec jointly assumed the Rotating Chairmanship of the 3rd Partner Club of the Beijing 2022 Games. The two parties would work closely together to promote active, in-depth cooperation in the fields of 5G + clean energy, smart gas stations, joint marketing for the Games, promotion of ice and snow sports, etc.



Spreading the Olympic culture and spirit

In order to advocate the Olympic spirit and culture, China Unicom supported the promotion of the Games and organized various publicity activities to introduce to the whole society progresses in the Games preparation, popularize the knowledge of the Games and mobilize the general public to pay attention to, support and engage in the Games.

- The launch of the Smart IP “Little Dream” marked a new stage of China Unicom strategy for “Smart Games”. It would lead the public to experience ice and snow sports and feel the charm of the Smart Games.
- The “Each One in Three Hundred Million” communication program for the Games won the 9th ADMEN international award.
- Joined hands with UN-Habitat and the Beijing 2022 to organize the “Winter Dream Ambassador” series of activities, with the 2020 theme being “Enabling Green Games with Smart Innovation”. In these activities, accessible facilities in daily life, smart waste sorting, smart green mobility and other solutions and creative designs powered by 5G under concept of sustainable development were collected, 29 of which were selected as outstanding cases to be included in the United Nations 2020 Report on Smart Games and Sustainable Development.
- Took advantage of China Unicom’s own offline business outlets nationwide and convenient mobile service Apps to participate in the Games licensing programs; leveraged 5G, Internet of Things, big data, AI and other technical strength while combing the consumption characteristics of young people to innovate and develop the smart gashapon machine for the Games to sell official merchandizes as a means to supporting Games preparation and spreading the Olympic Culture.



Smart IP “Little Dream”

Securing Guarantee against All Odds

China Unicom always put the safety of the people before everything else, devoted itself to emergency rescue and disaster relief, and provided communications guarantee for major events, demonstrating powerful strength.

Best efforts in flood prevention and disaster relief

Establishing and improving the service guarantee system for flood control

In order to deal with flood disasters, China Unicom made early deployment with unified configuration and detailed implementation requirements for flood control to ensure smooth work order. We carried out investigations in potential hazards in advance to identify and eliminate potential safety hazards, arranged professional repair teams on 24-hour standby, and formulated contingency plans for mobile communications to ensure the normal operation of emergency support.

Devoting to communications guarantee for flood prevention and control

In the 2020 flood season, southern regions experienced the heaviest floods since 1998, with some areas suffering from floods, geological disasters, strong wind and hail, typhoons and other disasters. China Unicom always placed the safety of people's lives in the first place and responded effectively against all hardships and dangers to guarantee the communication security for important departments including the Party, governments, military agencies, and commanding authorities for flood and drought control during the flood season, operating the entire network smoothly with zero casualties. We invested a total of 108 million yuan in disaster relief, dispatched emergency personnel for 191,000 person-times as well as emergency equipment for 178,000 unit-times, and sent 790 million emergency SMSs. We also actively engaged in post-disaster reconstruction with a total investment of 195 million yuan.

In 2020,

108 million yuan was invested in disaster relief and emergency personnel was dispatched for **191,000** person-times

Service guarantee against frozen precipitation

In 2020, the whole province of Guizhou suffered extensively from frozen precipitation accompanied by icy electric wires and roads. Some base stations and fiber-optic cables were damaged due to low temperature and power outages. China Unicom Guizhou branch company responded quickly and dispatched repair teams to brave the ice and snow. All team members carried fiber-optic cables on their shoulders, lifted fusion splicer in their hands and removed ice with bare hands during active network inspection and maintenance, making every heartwarming effort to allow users to access to the network in freezing cold. A total of 1,612 person-times of emergency repair personnel were dispatched, together with 421 unit-times of emergency vehicles and 478 unit-times of diesel generators.



In spite of their frozen faces and ice beads on their eyebrows, China Unicom staff stayed firm with their tasks in communication guarantee against frozen precipitation.

Securing guarantee for major events

China Unicom adhered to the philosophy of major communications guarantee featuring “carefulness, focus, trust, excellence and wisdom” in coordination and epidemic prevention and control to ensure smooth communication for major conferences and political events, making outstanding contributions to “tell China’s story and spread China’s voice” in complex situations, which was commended by the National People’s Congress, the National Committee of the Chinese People’s Political Consultative Conference, the General Office of the State Council, the Ministry of Industry and Information Technology, the State-owned Assets Supervision and Administration Commission (SASAC) and other national authorities.

Communications guarantee for “cloud diplomacy”

While working on an ongoing basis to contain the COVID-19 pandemic, the central government had adopted “cloud diplomacy” as the main channel to communicate with leaders of major countries in the world and international organizations. In 2020, China Unicom provided communications guarantee for 40 top-level “cloud diplomacy” events attended by central government leaders including the G20 summit with a total of 350 hours of guaranteed communications, which was well recognized by CPC General Secretary Xi Jinping and repeatedly commended by SASAC leaders.

Communications guarantee for the “Two Sessions”

In order to guarantee communications for the “Two Sessions” during the period of epidemic prevention and control, China Unicom innovated its service model to provide reliable new video services, on-premise Internet speed-up, network security protection and other measures for the Premier’s press conference, press release, CPPCC live streaming online, video conference of NPC group discussions, remote interviews with ministers and members of the “Two Sessions” and other events, successfully completing its task in communications guarantee.

Communications guarantee for China International Fair for Trade in Services

China Unicom provided reliable and secure global network support for China International Fair for Trade in Services, involving multiple guarantees such as the video-conferencing of the summit meetings, ICT services for the media center, private networks for security teams, CCTV video transmission and mobile network services. A total of 1,812 personnel and 15 vehicles were dispatched for guarantee.



Full Commitment to Public Good in Communities

China Unicom is a loyal practitioner of the core values of socialism and synergizes all social resources to make active contributions in the fields of culture and sports, education, healthcare, environmental protection and public welfare, spreading warmth and care in the society.

External charitable donations

The Company has established robust management policy governing its charitable donations, proactively undertook and fulfilled social responsibility based on the principles of voluntary services free of charge, acting within its capacity, clear accountability and honesty and trustworthiness, and endeavoured to give back to the society and promote the sustainable development of public welfare undertakings.

External donations amounted to

304 million yuan in 2020

| Cause of donations | Amount of donation (10,000 yuan) |
|---|-------------------------------------|
| Donations to areas of designated poverty alleviation (anti-poverty aid) | 26353.3 |
| Aid to border areas (Tibet, Xinjiang) | 13.3 |
| Donations for other purposes (culture and sports, education, medical care and health, public welfare, environmental protection, etc.) | 4001.3 |
| Total | 30367.9 |

Dedication to voluntary activities

China Unicom combined the voluntary spirit of “dedication, friendship, mutual assistance and progress” with business production and operation and staff team building in active engagement in voluntary service activities. Rich in content and diverse in forms, thees services helped make positive contributions to helping poor students, environmental protection, caring for the elderly and the young and other undertakings, demonstrating the image of a responsible central SOE while putting into practice the core socialist values.

55,006 registered volunteers

58,095 person-times of participation in voluntary service activities

China Unicom built the blockchain-based “China Unicom Charity” platform, through which each donation was given a “unique CU code for charity” to show that the funds were donated via blockchain with records unable to be tampered with and able to be traced back, ensuring openness, transparency and credibility. The “China Unicom Charity – Mobile Credits for Education Support” program won the Bronze Award in the Fifth China Young Volunteer Service Competition.

China Unicom Zhejiang branch company was an active player in various heart-warming charitable activities. For example, it organized the “Warm Clothes to Keep Hearts Closer” fundraising activity to donate cotton-padded clothes to children in Walong Village, Tibet; it donated books to the Tarji Primary School in Sandaohe Township, Huocheng County, Xinjiang to spread love and share knowledge; it donated funds to primary schools in underdeveloped areas to support local education development; it also donated heavy quilts to elderlies living alone to show care for people in needs.



Book donation for public good

China Unicom Huizhou branch in Guangdong Province joined hands with Cihang Charity Association in various charitable activities with more than 1,600 person-times of participation, including the Cihang Family Visiting Day for 8 sessions in a row.

China Unicom Hunan branch company paid great attention to the education of impoverished children. It established libraries for many primary schools in poor villages such as in Loudi, Chenzhou and Xiangxi to improve the learning environment. It also donated books, school supplies and sporting goods to Dongjiu Village for many years. In 2020, it worked with Polaris and Dawn, an education organization in Changsha to launch the activity of “Lighting Up Dreams - Dongjiu Children’s Tour in Changsha” and the charitable activity of “Wo Together for Love” to care for left-behind children.



China Unicom Hunan in charitable activity: “Wo Together for Love” to caring for Left-behind children

China Unicom Mianyang branch in Sichuan Province cooperated with Mianyang Association of the Hearing Impaired and the Sichuan ShantuWeike Technology Co., Ltd. to joint organize the “China Unicom & Shantu Live Streaming for Public Good” activity to provide employment opportunities for the disabled.



PRIORITIZE FUNDAMENTALS

**IMPROVE GOVERNANCE EFFICIENCY
WITH DIGITAL SUPPORT**

Adhering to Political Building as Primary Guidance

Steadily Advancing Corporate Reform

Facilitating Green, Low-carbon Development

Prioritize Fundamentals - Improve Governance Efficiency With Digital Support

The Fifth Plenum of the 19th CPC Central Committee pointed out the necessity to accelerate the improvement of the modern enterprise system with Chinese characteristics and deepen the mixed-ownership reform of state-owned enterprises. As a “pioneer” in the mixed-ownership reform among centrally-administered SOEs, China Unicom leveraged high-quality Party building to guide high-quality development, performed comprehensive digital transformation, followed market-oriented allocation of production factors to further advance the restructuring of systems and mechanisms, and expedited the establishment and improvement new mechanisms to invigorate micro ecosystems to make production relations more suitable for the development of productivity. Meanwhile, we put into practice the philosophy of green development, built green networks and promoted the green transformation of production and operation, significantly raising the efficiency of business operation.

Measures adopted in 2020

- Focused on the major task of combating COVID-19 in Party building to lead efforts in strengthened epidemic prevention and control.
- Continued to deepen the long-term mechanism of awareness campaign under on the theme of “Staying true to the Party's founding mission” and developed a “direct approach to Party Leadership Group” as a regular mechanism to listen to the voices of employees and customers.
- Implemented comprehensive digital transformation and facilitated reforms of the operational systems in five lines of group-wide market, government and enterprise customers, network, IT and technology innovation.
- Invested 120 million yuan in special funds for energy-saving renovation of incumbent equipment.

Actions to be taken in 2021

- To further strengthen grassroots Party organizations and promote the deep integration of Party building and central work to guide high-quality development with high-quality Party building.
- To deepen the reform of operational systems and facilitate the director-based accountability system more extensively.
- To further advance the building of a rule-based China Unicom and focus on the in-depth integration of the rule of law, compliance, operation and management to strengthen horizontal coordination and vertical connection with effective prevention and control of legal risks.
- To continue to vigorously push forward researches in energy-efficient technologies to be applied, when mature, in computer room scenarios suitable for the entire network.

Adhering to Political Building as Primary Guidance

Digital transformation involves the reconstruction and optimization of all production scenarios and all production factors in an enterprise. In particular, it is necessary to adhere to the leadership of the Party. China Unicom adheres to political building as its primary guidance and regards efforts to strengthen the “four consciousnesses”, solidify the “four self-confidences” and achieve “two guarantees” as the “benchmark” and “ballast stone” to decide on the direction and strengthen the foundation of all work. Through strengthened political building, China Unicom moved barriers in reforms at greater depth and secured the strongest political guarantee in marching forward, pushing up its overall work to a higher level powered by fruitful political building. In the meantime, we always adhered to honest operation as well as legal and regulatory compliance, and continued to strengthen efforts in comprehensive, strict Party governance, achieving remarkable results in improving Party conduct, building a clean government and fighting against corruption.

Strengthening the work in Party building

Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, China Unicom continued to strengthen the Party's political, ideological, organizational, and institutional work as well as the its conducts and disciplines to empower high-quality corporate development with high-quality Party building.

Strengthening ideological and theoretical guidance

Studied and implemented the spirit of the Party Central Committee. The Guiding Opinions on Implementing the Spirit of the Fourth Plenum of the 19th Central Committee of the Party and the Notice on Doing a Good Job in Studying and Propagating the Spirit of the Fifth Plenum of the 19th Central Committee of the Party were circulated to make systematic and comprehensive arrangements for the whole group to study the spirit of the plenum. China Unicom Party Secretary Wang Xiaochu took the lead in lecturing on the implementation of the spirit of the plenum at special Party class, through which “six full coverage” was realized by centralized learning, plenum watching, lecturing, discussions, online exchange of views and trainings: full coverage of centralized lecturing in all four levels of organizations, full coverage of seminars and discussions among all three levels of executive teams, full coverage of trainings among all three levels of managers, full coverage of centralized exchange of views via one platform, full coverage of awareness education among all employees, and full coverage of the learning materials in all Party branches.

Solidified ideological and political work. The Handbook on Ideological and Political Work in Grassroot Party Organizations was circulated, together with implementation measures regarding the “three situations in which visits must be made, four questions that must be asked and five occasions in which interviews must be made”, and efforts were made to further study topics related to Party building and ideological and political work. In 2020, China Unicom had one case of the first prize and two cases of third prize in outstanding study on ideological and political work by central SOEs, and was also selected as an organizer of outstanding topic study.



China Unicom Party Secretary and Chairman giving a Party lecture



China Unicom Group and its branches/subsidiaries at all levels studying the spirit of the Fifth Plenum of the 19th Central Committee of the Party

Integrating Party building into the central work

Party building led the efforts in strengthened epidemic prevention and control. China Unicom focused on the major task of fighting the COVID-19 epidemic and formulated and circulated the Notice on Strengthening Party Leadership to Provide Strong Political Guarantee for Winning the Battle against COVID-19 and the Notice on Strengthening Organizational Guarantee for Epidemic Prevention and Control and Resumption of Work and Production to provide guidance for various grassroots Party organizations to continuously enhance their political functions.

Party building promoted comprehensive digital transformation. Centering on comprehensive digital transformation, China Unicom identified the “four synchronization and four alignment” from different perspectives to mobilize different entities to play their roles in the reform based on their own responsibilities. It held large-scale online themed event for the Party's Day, titled “Pioneering to Lead Digitalization toward Further Transformation”, to celebrate the 99th anniversary of the founding of the Party to thoroughly interpret digital transformation. It stroke a balance between Party building and the central work for the two to reinforce each other by giving more weight to digital transformation in various forms including the themed event for the Party's Day - “Sub-division Reform in a Better Way”, the poverty alleviation conference - “United to Fight against Poverty”, and the “Two Excellences and One Advanced” evaluation awards.

Adhered to well-designed personnel selection and appointment. China Unicom closely followed the Party's organizational line for the new era and established clear standards in personnel selection and appointment based on stringent criteria and procedures. In the “one report and two reviews” organized by the Organization Department of the CPC Central Committee, the overall recognition rate of China Unicom's Party Leadership Group in personnel selection and appointment reached 99.4%, improving for 4 consecutive years.



Pioneering to Lead Digitalization toward Further Transformation - China Unicom held themed events for the Party's Day to celebrate the 99th anniversary of the founding of the Party

Implementing the “top agenda item” design

Institutionalized the “top agenda item”. China Unicom institutionalized the “top agenda item” design in 34 seminars of the Party Leadership Group throughout the year, involving 185 topics and 34 editions of compiled learning materials and requirements to be implemented. We took advantage of an interactive mechanism for theoretical study between the Group and the branches to ensure high consistency and alignment with the Party Central Committee in terms of ideology, political work and actions.

Ensured the effectiveness of the “top agenda item”. The Measures on Managing the Implementation of the Instructions, Guidances and Work in Supervision and Inspection Required by General Secretary Xi Jinping was circulated to ensure effective implementation of the spirit in the important speech made by the General Secretary. In 2020, China Unicom sorted out 59 guidelines and instruction and formulated 199 implementation measures with continued follow-ups to promote implementation in a systematic and well-planned manner.

Normalizing discussions on “endeavors for three purposes”

China Unicom deepened the long-term mechanism of themed education on “staying true to the Party’s founding mission” and adhered to “people-orientation” to firmly promote the “endeavors for three purposes” (all for customers, all for the front line, and all for the market) platform for normalized operation and to establish the virtual workflow to report internal problems directly to the Party Leadership Group, enabling “direct approach to Party Leadership Group” to listen to the voices of employees and customers on an ongoing basis.

The “endeavors for three purposes” platform focused on solving deep-rooted problems for employees and actively strengthened closed-loop operations to address employee difficulties and concerns. From the bottom-up perspective, priorities were given to the pain points, challenges and clustered problems in production and operation, and major issues could be reported directly to the Party Leadership Group through problem escalation mechanism. From the top-down perspective, the platform served as a deterrent and enabler to consolidate accountability at the level of the Group and the provincial branches to incorporate employee-side issues into supervision so as to ensure high-quality solution.

The “endeavors for three purposes” platform collected over

60,000 cases, **93%**

with a resolution rate above

The platform received a good reputation within the company, building brand effect



China Unicom platform of “endeavors for three purposes”

Adhering to compliance management

Compliance management is an inherent requirement for the sound and stable operation of an enterprise. China Unicom further standardized institutional management, strengthened the rule of law and enhanced risk prevention and control to continuously consolidate the foundation for high-quality development.

Operation in compliance with laws and regulations

- China Unicom earnestly implemented the spirit of the Central Work Conference on the Rule of Law in an All-round Way, further advanced legal compliance, prioritized the integration of the rule of law into business management centering on digital transformation and high-quality development, strengthened horizontal coordination and vertical integration, and guarded against legal risks with effective prevention, control and resolution.
- The Company performed special inspection and rectification of rules and regulations with focuses on addressing insufficiencies in current rules and regulations including the lack of timeliness in their “establishment, modification and suppression”, “inconsistency and blind areas” as well as weak “pertinency and operability”. As a result, 5,033 rules and regulations were optimized with 1,825 items adjusted.
- The Company launched large-scale public event of “Compliance Action Proposal”, during which a total of 155 proposals were received with clearly-stated employee code of conduct, achieving good synergies among multiple departments.
- The Company made active exploration in the digital transformation of contract management and built an end-to-end, closed-loop contract management system through data intergration, process interconnection and accountability, resulting in 100% of legal review rate for the commercial contracts.
- The Company enhanced legal awareness raising through 147 published articles of legal knowledge and cases on its smart portal and the WO column on legal awareness as well as through special education activities such as the “April 15” and “April 26” campaigns to strengthen the publicity and education of the Civil Code. We designed a special column on the rule of law and compliance on the portal of our online academy to share the results in legal work, launched a series of five-“micros”-in-one compliance-related activities on the “Rule of Law and Compliance for Wo” WeChat account, and published the Wo Compliance with You e-magazine.

Risk prevention and control

Sticking to the goal of “strengthened internal control, risk prevention and improved compliance”, China Unicom improved the internal control system with better-designed environment, strengthened supervision and evaluation and perfected the closed-loop management of internal control to keep raising its capabilities of risk prevention and control and effectively prevent and resolve major risks.

- Persisting in the principle of “auditing whenever necessary against the most possibly strict standards”, the Company innovated the audit mechanism and system, improved targeted risk positioning and coordinated the implementation of audit supervision, problem rectification and accountability.
- The Company pursued accountability for illegal operations and investments with a total of 116 clues identified in 2020. This year, 24.88 million yuan of loss was recovered and 6.87 million yuan of potential loss from risks was reduced.

- The Company created an additional supervision team to integrate inspection and assessment for related efforts to shift from decentralized to centralized power, from single item of supervision to comprehensive content, and supervision effect from post-inspection results to supervision and guidance before and during potential incidents.
- The Company consolidated overseas risk management with 108 risk catalog items established, and deployed key risk prevention and control including for US-related operations, the COVID-19 epidemic, network efficiency and arrears management, through which 115 historical risk points were downgraded and removed by 90%.

4,580 sessions of trainings on compliance with laws and regulations with **243,000** trainees attended

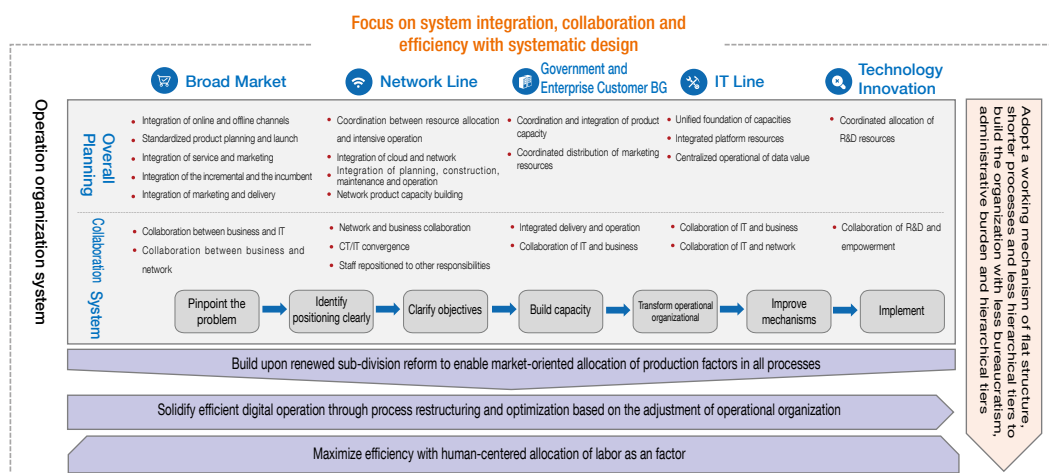
Focusing on anti-corruption and Party conduct

Adhering to the Party's political building as its primary guidance, China Unicom promoted strict Party governance by the rule of law in a coordinated manner and consolidated the overwhelming victory in the anti-corruption battle. Complaints received in the whole system further decreased by 16.3% year-on-year in 2020 on top of sustained year-on-year decrease consecutively in 2018 and 2019. The overwhelming victory in the battle against corruption was further consolidated and expanded, contributing noticeably to clean governance and better Party conduct.

- The Company formulated the Responsibilities in Implementing Party Conduct and Clean Governance by Leadership Teams and Members of China Unicom Party Organizations at All Levels, which subdivided the main responsibilities of each Party organization into 104 specific tasks in 17 areas as an approach to supervising all Party organizations to be aware of corresponding responsibilities, responsible and committed to fulfilling tasks.
- The Company compiled the second Guidelines on the Prevention and Control of Integrity Risks, adding prevention and control measures for 24 risk points in information security, sub-division, etc., while forming prevention and control guidelines covering 65 integrity risk points in 8 key areas.
- The Company deepened education to guard against potential risks and produced the "Party Integrity On the Go", a short film on Party building risks, for 7,693 Party branches to educate and guide Party members and cadres at all levels to learn lessons on Party conduct and clean governance. Focusing on themes such as epidemic prevention and control, formalism and bureaucracy, we used cases around Party members to educate them to be on guard and actively promoted integrity at grassroots levels through discipline inspection by all levels of related agencies, original video clips by small-CEOs and other innovative forms.
- The Company enhanced the penalties on rule-violating suppliers with established mechanism targeting "option-like" corruption in 3 years prior to resignation or retirement, and organized the completion of the third batch of 52 "blacklisted" suppliers, a total of 232 suppliers banned since 2017.
- The Company took vigorous actions in combating formalism and bureaucracy, with 32 violations identified and punished 58 people for extravagant consumption at public expense, 9 typical cases from which was selected in the system-wide disclosure.
- The Company inspected the illegal use of spending in supportive construction for base stations and network maintenance-related rental, electricity supply and designated maintenance since November 2015. A total of 98 clues regarding suspected violations of discipline and regulations, negligence of duty and other issues were verified with 40,856,100 yuan of funds involved.
- Reportings on corruption could be made through letters, phone calls, text messages and visits and other means and the Company would protect the rights and interests of the reporters in accordance with the law and kept confidential the reported matters, acceptance status and information related to the reporter.

Steadily Advancing Corporate Reform

The Central Party Leadership with Comrade Xi Jinping at its core has made a series of major deployment for nurturing new advantages of the digital economy. As a centrally-administered SOE that shoulders the main task of building new digital infrastructures, China Unicom is taking the lead to launch comprehensive digital transformation. We have implemented operation reforms in a systematic, collaborative and comprehensive manner to deepen the market-oriented mechanisms, facilitate the overall planning of resource elements for integration and improvement, and transform China Unicom into a modern enterprise full of vigor and vitality, moving forward steadily on the road of high-quality development.



Promoting operational reform

China Unicom focused on the new requirements of the allocation of resource elements in comprehensive digital transformation to target deep-rooted issues that constrain development momentum, such as insufficient coordination, scattered resources, weak product competitiveness and technology innovation capabilities, inactive market mechanisms and lengthy processes. We responded to changes with proactive measures to further advance operational reform in five professional lines of system-wide market, government and enterprise customers, network, IT and technology innovation, further enhanced our advantages to build core capabilities, optimize, innovate and restructure the value creation system for businesses, products, services, operations and management, transform element allocation methods and operation modes, activate organizational motivation and improve operational efficiency. The overall planning, coordination and empowerment of various professional lines were significantly improved for greater work efficiency.

Strengthening process reconstruction and optimization

Focusing on value creation under the principle of “prioritizing customer experience, business operation and front-end demands”, China Unicom transformed the management-centered traditional processes with low efficiency and high cost into highly efficient, low-cost digital processes centered on customers to nurture a process-oriented organization. We established a six-level process framework system with clarified process catalogs and lists, and achieved process visibility, manageability and controllability based on the process management platform; at the same time, we mobilized all professional lines to improve institutional specifications, adjust organizational responsibilities, and re-create processes with disruptive innovation, facilitating transformation toward a digital, intelligent, ecosystem-driven and platform-based enterprise.

Consolidating in three institutional reforms

The Company continued to deepen three institutional reforms with determination to allow dynamic promotion and demotion of cadres, employment contract signing and determination as well as free adjustment of compensation, establishing effective core mechanisms in appointment, training, evaluation, performance assessment, promotion and contract termination. In terms of dynamic promotion and demotion of cadres, the most competent leadership teams were selected so that only capable ones outperforming others would survive; in terms of free adjustment of compensation, the total amount of salary for professional lines was designed in proportion with key financial indicators, blocked equities were released in two phases, the mechanism of sharing incremental gains was put into place and the employee shareholding scheme was implemented by subsidiaries after mixed-ownership reform; in terms of dynamic employment contract signing and determination, market-oriented measures were taken on a ongoing basis to introduce high-end talents with a four-tier hierarchy of talents totaling 18,000.

Nurturing a corporate with “flat structure, short processes and low-tiered hierarchy”

In order to solidify and secure the comprehensive digital transformation, China Unicom focused on pain points including “high-tiered management hierarchy, long workflow chains, low efficiency in coordination and hindered operation” and established mechanisms to enable “flat structure, short processes and less hierarchical tiers”. We expedited reforms in internal operation management model and support guarantee mechanism, built the organization with less “bureaucratism, administrative burden and hierarchical tiers”, further flattened the management structure, shortened processes in workflows, established the authorization and accountability system, and promoted director-based management model under the leadership of heads of departments. By doing so, the Company significantly improved the awareness of market, efficiency and services among organizations and staff at all levels, reduced internal transaction costs and raised the efficiency of operation and management.

In 2020, a total of

109 directors were appointed to the HQ market and network teams

The Company promoted the director-based accountability system, in which the role of directors was transformed from a “referee” to a “leading athlete”; the position of director did not correspond to specific internal units, breaking the “departmental segmentation”; direct reporting and straight-line coordination were implemented to change the tradition means of tier-by-tier communication; professional ranks were separated from position ranks for dynamic exit. The implementation of director-based accountability lowered the management hierarchy, shortened workflow chains, enabled flexible team configuration and agile response, clarified responsibilities and power, smoothened processes, and allowed data and information sharing and optimal coordination efficiency.



China Unicom Director Appointment Ceremony

Stimulating the vitality of sub-divisions

The sub-division reform for all production units is an important enabler to advance the mixed-ownership reform and realize comprehensive digital transformation. Focusing on invigorating, capacity building and development, China Unicom started from internal and external customer needs and firmly grasped the “systematic, scalability and collaborative nature” of reforms in the new era to promote the sub-division reform with renewed understanding, positioning and motivation. The three professional lines of market, government/enterprise customers and network worked hard together to build a system with comprehensive collaboration and agile operation for internal and external customers, with strong support from human resources, finance and IT teams, providing a broad platform to those who are “determined and competent to make a change”. As of December 2020, China Unicom Group had 27,500 sub-divisions and cultivated a team of around 26,700 mini CEOs. 210,000 employees assumed managerial positions in sub-divided units with salary growth higher than the HQ average, allowing grassroots employees enjoy better sense of gain.



Deepening dedicated reform programs

With the goal of nurturing a truly independent market entity, China Unicom continued its efforts in subsidiary reforms, deepened the mixed-ownership reform by introducing more social capital, empowered state-owned capital with greater roles to play, and strengthened and optimized business operation to better serve the national strategy.

- **Market-oriented reforms in subsidiaries continued to deepen.** In order to nurture a truly independent market entity, China Unicom studied and formulated plans on deepening market-oriented reforms in subsidiaries, transformed the management model of the Group on its subsidiaries, and delegated more power to subsidiaries on the basis of reasonably committed goals and improved corporate governance for subsidiaries to shift from waiting for internal support from the Group to building organic capacity for market.
- **Substantial progress was made in socialized cooperation.** As the only provincial branch of a central SOE in the "Double Hundred Action", China Unicom Yunnan branch company introduced private capital on the basis of the pilot socialized cooperation at prefecture level to establish the Yunnan Unicom New Communications Co., Ltd., with over 90% of personnel from the former China Unicom Yunnan transferred to the private company. Since the reform, the cumulative increase in revenue of the new company nearly reached 500 million yuan, with the cumulative loss reduced by about 350 million yuan. Such model was extended to seven lower-level branches in Guangxi Province. As of December 2020, the growth rate of basic business revenue of regional branches in Guangxi with socialized cooperation reform exceeded the overall level in Guangxi by 2.52%, their profit loss decreased by 131 million yuan year-on-year and EBITDA improved by 126 million yuan over the same period last year.
- **Substantial steps were taken in the mixed-ownership reform in subsidiaries.** Since the introduction of strategic investors, Smart Connection Technology had established a scientific and standardized structure of corporate governance, implemented tenure- and contract-based employment for management, together with long-term employee incentive plans, to effectively sustain and increase the value of state-owned assets; it collaborated with strategic investors in rapid deployment in the Internet of Vehicles and other areas of intelligent terminals, improving product capabilities significantly with over 70% market share in pre-installation, rapid growth in business revenue and steady increase in operating profits.

Facilitating Green, Low-carbon Development

Green mountains and clear water are as precious as mountains of golden and silver. China Unicom has implemented the strategy of sustainable development under the environmental protection philosophy of "harmonious coexistence of the network and the environment" to persistently promote energy conservation and consumption reduction, eliminate inefficient production capacity, cut down expenditures in network energy consumption, and reduce the impact of greenhouse gas emissions on the environment in order to support the fight against pollution and benefit the people from ecological protection.

Deepening green management

China Unicom established the Management Committee on Energy Conservation and Emission Reduction to organize efforts in special plans for energy conservation and emission reduction, the promotion of key technology applications, R&D and pilots of new technologies, awareness campaigns for energy conservation laws and regulations and the optimization of energy conservation management measures based on the principle of energy conservation, emission reduction, cost-efficiency enhancement, focused priorities, comprehensive promotion, root cause control and potential unleashing, taking into account the actual situations. In 2020, a special fund of 120 million yuan was allocated to equipment energy-saving renovation.

The Company made proactive response to the challenges posed by global climate change, and identified and prevented pollution risk points from emissions into air, water and soil during production and operation. The main source of the Company's daily water supply for offices and production and operation was municipal water supply, causing no risk of pollution. At the same time, the Company effectively implemented energy-saving and emission-reduction measures for green network operation and reduction in carbon footprint.

Building green networks

China Unicom took advantage of technological innovation, put into practice the philosophy of green development, and promoted green, low-carbon and energy-saving technologies with the goal of achieving optimal TCO.

- **Improved data center efficiency.** The Guiding Opinions on IDC Construction and Guiding Opinions on Data Center PUE were circulated with clear PUE goals and clarified guidance on the application of energy-saving technologies in air-conditioning and power supplies to improve IDC energy efficiency. 9 data centers were selected in the National List of Green Data Centers.

- **Continued to streamline the network.** 22 sets of MGWs were withdrawn from 16 local networks of the core network; 502,000 lines of PSTN were withdrawn from the integrated access network, together with 2.52 million lines of NGN; approximately 50,000 outdated MSTP/SDH terminals and 50,000 WDM equipment were withdrawn from the transmission network; 122 old equipment were withdrawn from the IP backbone of the data network; out-moded equipment were constantly withdrawn from all infrastructures, saving 34.63 million yuan in electricity bills throughout the year.
- **Strengthen management on electromagnetic radiation.** Electromagnetic radiation management was strengthened in the construction of mobile network base stations to ensure compliance with national standards. Once the base station was completed after construction, they would be tested for electromagnetic radiation and the test results would be disclosed to the public on the website for public supervision.
- **Enhanced the research and utilization of new energies.** Studies were organized on the solar power supply scheme and the conversion controller equipment of the communication network at base stations and in communication equipment rooms, with pilot projects in 6 locations across the country. The annual electricity saving in the 3.3kWp solar power generation system constructed for a single base station was about 4,253kWh, equivalent to 0.25 yuan/kWh in electricity bill.

59%

Coverage of energy-efficient technology at base stations

87%

Coverage of energy-efficient technology in core computer rooms (including idcs)

The intelligent dual-cycle, multi-unit, modular-based computer room air-conditioning system developed by China Unicom made full use of natural cooling and combined mechanical cooling with "fluorine pumps" to improve energy efficiency and reduce carbon emissions through the modularization, centralization and miniaturization of outdoor units. The self-developed 5G BBU vertical frames could allow the air to flow from the front to the back of the equipment instead of from one side to the other, realizing centralized placement of 5G BBU and closed cold and hot aisles. According to the third-party measurement, the PUE could be reduced to satisfy DC construction on the edge.

China Unicom worked with partners to develop the smart switch for 5G DC load and independently developed the software platform with independent intellectual property rights using Internet of Things and AI to enable intelligent function of redundant equipment shutdown and reduce the energy consumption of the main equipment. Each set of 5G system would shut down for 8 hours per day with the energy consumption dropping by about 33%.

All the above research and development achievements obtained national utility model patents.

Promoting green applications

Drawing upon 5G, IoT, cloud computing, big data and other technologies, China Unicom designed an overall solution to smart environmental protection system and developed smart products for ecological protection and smart river management to support pollution prevention, energy conservation and emission reduction.

China Unicom Quanzhou branch made active explorations in the development of 4G and 5G applications. It built the drone-based automatic patrolling system to effectively address the "four misbehaviors" in river management, i.e., river pollution, illegal water interception, illegal space occupation and illegal sand mining, and was deeply involved in adopting environmental protection applications to help the effective implementation of the "River Chief Scheme".



Composition of the UAV-enabled river patrol system



Video surveillance on service desk

Further advancing green operation

Adhering to the concept of green development, China Unicom continued to mine the value of production elements and optimize resource allocation, built green business outlets and nurtured green supply chain systems with recycling and green consumption to promote the transformation toward green production and operation.

- **Built green outlets.** The Company promoted the digitalized operation in business outlets to improve operational efficiency. We advanced pilot programs in non-business outlets with form-free e-templates, enhanced the compliance in online service handling and implemented digitalized operation and paperless service application acceptance.
- **Built green supply chains.** The supply chain system of "one set of rules with one platform" was created for the whole Group with Internet-based operation across the entire supply chain. Audio and video conferencing functions were enabled on electronic bidding platform to conduct "virtual" bidding evaluation for epidemic prevention, and bidders were encouraged to choose energy-efficiency products to minimize environmental pollution.
- **Strengthening recycling:** The internal bidding mechanism for idle materials was established based on market fair value, upcycling 45 batches of materials for re-allocation worth a total amount of 12.33 million yuan. The auction to disposal of scrap materials was completed with transaction amount totaling 733 million yuan.
- **Upcycled and revitalized assets.** Measures were taken through broadening upcycling approaches to reusing assets, iterative revitalization of platform functions and strengthening post-evaluation to revitalize network assets and resources across provinces in 521 cases and upcycle 19,200 items of assets, with total asset scale of 937 million yuan, saving 134 million yuan in depreciation costs and improving asset efficiency constantly.
- **Promoted green consumption:** In order to revitalize the inventory of service-ready SIM cards and reduce waste, the function to "erase finished SIMs into new ones" was developed to support the rewriting of finished SIM cards ready for activation in stock so that the recovered IMSI resources could be turned into "empty cards" for reuse. In 2020, 800,000 finished SIMs were recycled, saving 600,000 yuan in card production cost.

Recycled scrap materials for disposal were valued at

7.33 million yuan

ENHANCE THE DRIVING FORCE

DIGITAL- ENABLED ENGINE FOR TECHNOLOGY INNOVATION

Optimizing Technological Innovation Mechanism

Increasing the Application of Innovative Technology

Enabling Digital Transformation of Industries



Enhance the Driving Force- Digital- Enabled Engine for Technology Innovation

Technology serves as a powerful weapon, which makes countries strong, companies competitive and people live well. China Unicom, as a main force in building a powerful country of science and technology, bravely undertakes the mission of independent and strong technology development, seizes the new opportunities brought by digital economy to technology innovation, improves the ability of independent innovation, prospers the collaborative innovation ecology, accelerates the transformation of technology innovation achievements into real productivity, enriches and expands technology innovation products, assists the government in effective social governance, and serves the digital transformation in thousands of industries.

Measures adopted in 2020

- Optimized the technological innovation system, increased investment in R&D, strengthened incentives for technological innovation, and expanded cooperation among businesses, academia and research institutions.
- Focused on tackling key problems and innovative applications of core technologies such as 5G, cloud computing, big data, IoT, blockchain and AI.
- Built independent product R&D capabilities, provided solutions, and built an industrial cooperation ecosystem, to empower industry digitalization.

Measures to be taken in 2021

- Externally, to actively strengthen ecological cooperation in technological innovation, and internally, to comprehensively promote the integration of technological innovation into production.
- To focus on researches on the underlying technology and forward-looking application scenarios of cloud computing, big data, IoT, AI, and blockchain, and strengthen the pre-research of new-generation network technologies such as compute first networking (CFN), 6G and quantum communications, as well as industrial Internet application products.
- To focus on key fields and industries, and build a "platform + application" product system with cloud-network collaboration, digital integration and open capacity, so as to provide more diverse integrated application products for the whole society.

Optimizing Technological Innovation Mechanism

A complete technological innovation system and mechanism safeguards faster development of technological innovation. China Unicom constantly strengthens its consciousness as an innovation player, breaks down system and mechanism obstacles, and takes advantage of the policy environment, to stimulate the driving force for innovation development, form a joint force of technological innovation, and accelerate digital transformation.

Improving technology management

China Unicom continued to optimize its technological innovation system, strengthened R&D management, increased R&D investment, and implemented whole-process management of technological achievements.

- Thoroughly implemented the requirements of SASAC on promoting centrally-administered SOEs to increase investment in technological innovation, and enhanced investment in R&D. By the end of 2020, the investment in technological innovation reached 12.28 billion yuan, accounting for 4.5% of the total revenue.
- Optimized and restructured the Technology Committee of the Group Company, and promoted the construction of technology committees in the subsidiaries and branch companies.
- Clearly defined the management specifications, processes and collection requirements for various R&D projects, and realized 100% platform management.
- Energetically promoted the building of teams of research talents and explored the import of external outstanding research talents.
- Systematically managed the registration and review of national science and technology achievements, and established a database of evaluation experts.

Enhancing innovation incentives

We continued to improve and enhance the incentive system and efforts for technological innovation, propel the formulation and release of incentive policies for technological innovation with the maximization of interests as the yardstick, and maximize the publicity and implementation effect through multi-channel communication forms such as related meetings, production of H5 publicity materials, remote consultation, and DingTalk, so as to make the wide technological personnel of the Group understand the policies and build up their confidence. In 2020, the Group issued 45.09 million yuan as incentive pay for technological innovation, doubling that of last year and greatly stimulating the vitality of the wide research personnel.

Expanding R&D cooperation

We actively expanded cooperation among businesses, academic and research institutions, established joint laboratories with colleges and universities, as well as carried out research projects on Internet of vehicles, optical transmission and new network evolution with famous universities such as Tsinghua University, Peking University and the Chinese University of Hong Kong, and research projects on base station equipment and network system with high-tech companies such as Huawei and ZTE. In 2020, there were 61 projects under research and 49 newly submitted in total.

On November 30, 2020, China Unicom held the 2020 Technological Innovation Conference in Beijing, which gathered experts and industrial innovation forces from all walks of life to exchange opinions with the industry, academia and research institutions, learn from each other, and promote the optimal allocation of research forces and resource sharing. At the meeting, cooperation agreements were signed with Renmin University of China, Beijing University of Posts and Telecommunications, University of Science and Technology Beijing, and National Time Service Center of Chinese Academy of Sciences (CAS), to establish joint laboratories in AI and big data, intelligent open optical network, 5G intelligent metallurgy, and high-precision ground-based time service system. The founding ceremony of "China Unicom Industrial Technology Alliance of Compute First Networking" was also launched together with China Academy of Information and Communications Technology, the Computer Network Information Center of CAS, Tsinghua University, and representatives of industry partners, to promote industrial development.



Increasing the Application of Innovative Technology

Giving play to its role as a player in technological innovation of centrally-administered SOEs, China Unicom bravely acts as the "source" of original technologies, breaks into the "no man's land" of science and technology, speeds up the exploitation of digital technology potential, and facilitates the security and stability of both the industrial chain and the supply chain.

Developing new communications technologies

Promoting 5G innovation

China Unicom took standalone (SA) networking as its target architecture for 5G network, determines to build a 5G network with leading technology, actively promoted the evolution of 5G technology, deployed the first batch of SA networks in the world, and cooperated with chip, terminal and equipment manufacturers to overcome difficulties and drive the development of 5G industry chain.

- Led the completion of 3 3GPP standards including 2.1G 50MHz/40MHz large bandwidth, and implemented the reply to 5G-mode frequency re-cultivation in 2.1G band, to assist the 2.1G band 5G leading the world.
- Led the experiments of new millimeter wave networking technology in the scenario of Winter Olympic Games.
- Took the lead in the industry in carrying out and completing the decoupling test of 13 5G social cloud micro-stations and 5GC NG interface of the existing network.
- Built "wireless technology and AI integration" by independently developing a 5G intelligent energy-saving platform and an intelligent control system of 5G base-station energy consumption.
- Carried out new technology experiments, centralized purchase tests and researches on key issues of commercial deployment, and completed the first large-scale commercial deployment and service provision of 5GC.



China Unicom released the 5G UAV airborne terminal "Rainbow 1" and put it in use in UAV projects in different places, which also helped Anyang become China Unicom's 5G ubiquitous low-altitude test base and CAAC's UAV test base.

Promoting application of quantum communications technology

- Conducted application researches of new technologies such as quantum private communication architecture, optical fiber transmission and application effect analysis, and realized several applications such as quantum encryption video conference system on the Beijing-Xiongan international pre-commercial quantum encryption trunk line.
- Carried out in-depth researches on digital identity and trusted terminal in combination with quantum key service and blockchain technology, and promoted the application in typical industrial scenarios.

Carrying out pre-research of 6G wireless technology

- Completed the demonstration and verification of the first space-air-ground integrated service in China, produced white papers on terahertz, blockchain, and space-air-ground integration, and successfully applied for several national major projects on 6G.

Building cloud services

Focusing on new base, new cloud management and new PaaS capabilities, China Unicom took the promotion of product capability and market scale as the main line, vigorously improved the carrying capacity and R&D capability of Wo Cloud platform, and built an integrated cloud product system, to make innovative business grow with a root.

Establishing a Wo Cloud supporting system

The cloud supporting system adopts a micro service cloud architecture of "big/middle end + small front end" to realize the decoupling between services and products. It has rich and flexible business choreography capability, which can quickly support the opening of resources and the whole life-cycle management. The four platforms of customer-oriented Yunjing, operation-oriented Yunce, maintenance-oriented Yunjing and resource-oriented Yunchang support the unified management of heterogeneous cloud pools and the unified monitoring of the whole network resources. Up to now, 38 products have been launched.

Enriching the Wo Cloud product system

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

In 2020, China Unicom held a new product launch event for Wo Cloud, with the theme of "New Wo Cloud, New Base and New Intelligence". Its publicity covered more than 5 million people nationwide by building nine We Media communication matrices with Weibo and WeChat as the core, where 2,173 articles were published in total and read for more than 480,000 times. All of the nine We Media accounts had 1.2 million fans, who had published/forwarded 267 related articles that had been read for more than 300,000 times. Besides, an online investment promotion meeting of the cloud market was held to create a "cloud market festival", attracting more than 300 application producers to participate and watched by 11,776 people, further expanding the influence of Wo Cloud brand.



Enhancing big data capability

China Unicom has accelerated digital transformation, tamped its industry-leading data base, significantly improved its big data capacity, and formed an accurate, fast, comprehensive, unified and smooth intelligent big data system, to enable high-quality development of its businesses and strive to be a main force in building digital China. In 2020, the big data business maintained its leading position in the industry in terms of market share.

- Strengthened the ability of integrating data assets, and built a super large-scale big data cluster governance and data governance system, to form PB-level technical data processing, real-time analysis and model service capabilities, and achieve end-to-end whole life-cycle data security control capability. The daily processing volume of incremental data is over 200TB, and the processing tasks are over 100,000.
- By giving play to the intensive advantage of big data, we launched the user roaming location query API in 3 days to support "Travel Assistant for Epidemic Prevention and Control" and "Communications Big Data Travel Card". The API had been used for query for more than 755 million times in total and served 8.35 billion person-times.
- Enriched product capabilities, and formed a product matrix based on big data, AI and blockchain technologies, which aims at serving the digital transformation of government and enterprise customers, includes data application service, data technology service, AI and blockchain, and focuses on government services, finance, culture and tourism, transportation and other key industries. Now, we have developed 8 ten-million-level products.
- Strengthened the independent R&D capability. The proportion of independent R&D has been increased from nearly 0 to 70%, and achieved full independence in computing power scheduling, data assets, data model, application development, automatic operation and maintenance, and data security.

1
Ranked No. 1
In the 2020 china big data enterprise
ranking list for the telecom industry

China Unicom Yunnan branch company gave full play to its advantage in big data, and used mobile phone signaling population big data to support the spatial planning of national land for natural resources in Yunnan Province, facilitate digitalization in the whole space of national land and full coverage of human and land elements, and provide powerful decision support for the planning and development of Digital Yunnan in the "14th" Five-year Plan" period.



Population Big Data System for National Land Spatial Planning of Yunnan Natural Resources Department

China Unicom signed cooperation agreements with four ecological partners in the field of big data, including Du Xiaoman Financial (Beijing) and Hangzhou DT Dream, to jointly explore product development and application services in the field of financial risk control modeling.

Improving the value of IoT

In the era of intelligent connection of all things, China Unicom is committed to becoming a leader of “AIoT” enabling thousands of industries. The company exerts efforts to build core capabilities in terms of platforms, networks, ecosystem, and application, provides integrated solutions and services including connection, application and terminal, and cooperates with upstream and downstream partners of the industrial ecosystem, to jointly expand the new ecosystem of 5G industry, and comprehensively enable digital transformation and upgrading in different industries.

Ranked No. **7**
In the 2020 world iot
ranking list top 500

Strengthening network development

- Built a 5G IoT core private network with people and things being classified, and having the ability to support 5G IoT business.
- Migrated and dredged business traffic flow according to IoT region division, to improve the utilization rate of network resources and user perception.
- Fully supported VoLTE, directional voice, directional SMS and other new functions.

Building platform capabilities

- Independently developed a connection management platform to support 5G, eSIM, public IoT, virtual operator resale and other innovative businesses, carrying more than 80 million connections.
- Independently developed an equipment management platform to support 32 standard thing models and 88 APIs in the fields of smart city and industrial Internet, such as smart street lamp, hydrologic monitoring, industrial transducer, and border gateway, helping the rapid development of SaaS applications in the upper industry.

Completing the product system

- More than 20 standardized IoT non-connection products, including seven independently developed products, such as Yanfei Cat. 1 module and Yanfei smoke detector, have been released for use in smart city, industrial Internet, 5G industry terminal, smart energy and other fields. The AIoT platform was rated as the only dual-crossing (crossing industry and field) industrial Internet platform in Jiangsu Province in 2020.

The smart energy big data service system and intelligent high-precision pipe network monitoring product developed and built by China Unicom Shandong branch company with NB-IoT and cloud platform technology, can monitor online the heating pipe network in an all-round way, provide data support for smart heating, and achieve the low-carbon energy-saving goal. In the initial pilot period of 7 power supply stations and 1,500 units, the total energy saved in the heating quarter of 2019-2020 was 1.9 million yuan more than that in the previous heating quarter, and the overall user complaint rate was 25% less.



Building an ecosystem for the industry

We develop the Internet of Things Industry Alliance with the concept of openness and sharing, and widely gather industrial ecological resources to accelerate the construction of an intelligent IoT ecosystem. Throughout the year, we had 91 new partners from key industries such as consumer electronics, smart medical care, and smart city.

In June 2020, China Unicom held an innovation and development summit of “Enabling New Infrastructure Construction, Connecting New Future with IoT - 5G + AIoT Helping Industries in Digital Transformation”, and released the first Cat. 1 White Paper in the IoT industry jointly with a dozen of industry partners such as UNISOC (Shanghai) and MeiG Smart, to promote the development of the IoT industry.



Innovating blockchain application

Taking blockchain as an important breakthrough for independent innovation of core technologies, China Unicom accelerates the integrated innovation and development of blockchain and industries, to provide trusted infrastructure for digital economy building in 5G era.

Building platform capabilities

We released “Unicom Chain”, a unified carrying platform for blockchain products and capabilities, formed a blockchain capability base with “1” BaaS platform and “8” common service components, and created “N” blockchain-enabled innovative applications, to provide cloud-network-chain integrated infrastructure services for the digital transformation of government and enterprise customers.

Continuously enabling the country

- Developed the country's first blockchain-based reporting and registration platform for work and production resumption of enterprises, which has been on trial in 15 cities and provinces across the country, serving more than 300 enterprises.
- Blockchain-based test instruments and a data management system were deployed and applied in a large scale in China Unicom Hebei branch company, connecting more than 100 instruments and more than 200 personnel.
- We are the first in the industry to complete the development of a spectrum blockchain experimental system and use it on the existing network for pilot demonstration, and won the “ICT China 2020 Best Outstanding Solution Award”.

China Unicom Guangzhou branch cooperated with Guangzhou Justice Bureau in developing smart judicial applications such as blockchain-based judicial evidence storage platform and social security administration, which make evidence storage and collection and other judicial processes unable to be tampered or denied, reduce the difficulty of fixing and authenticating electronic evidence, and effectively improve judicial efficiency and services. At present, the “Guangzhou Public Law Chain” has run stably for nearly one year, with block height of 69,074 and 120,198 pieces of records.



“Guangzhou Public Law Chain” completion and application briefing

Accelerating AI innovation and enablement

China Unicom is committed to building intelligent infrastructure, products and services, and using AI technology to drive the comprehensive upgrading and remodeling of network and products.

Advancing network's intelligent transformation

- Developed network AI test bed and MR intelligent construction & maintenance assistance system, and defined measurable automatic driving network classification method.
- Built the digital twin model of broadband access network, and realized the integrated Internet operation mode of planning, construction, maintenance and operation for access network.
- Independently designed and developed an IP network routing simulation system, and designed the architecture prototype of the network's digital twin system.
- Built the digital twin system for national new area (Xiongan).
- Held the 2020 AIIA Cup AI and 5G Network Application Competition and ITU AI/ML in 5G Challenge and Network AI Forum.

Providing AI capabilities and application

- Opened intelligent network, perception analysis, AI algorithm model, application services and other capabilities, to reshape the operation mode of intelligent city.
- Developed applications for new city governance, new convenient services for the public, new industries for industrial upgrading, and livable green new ecology, to reshape the public experience.

Developing standards and norms

China Unicom has joined in, actively participated in the activities of international and domestic industrial standards organizations and the formulation of standards, covering 5G, cloud computing, big data, IoT, AI, edge computing, blockchain, information security and other development fields, which has effectively promoted the standardization of the company's cutting-edge R&D achievements and enhanced its industrial influence and discourse power in the community of international cyberspace.

- We have taken more than 100 positions in ITU-T, 3GPP, GSMA, Linux Foundation, OpenStack and other important international standards organizations and open source communities, including more than 20 important management positions. We have joined in China Communications Standards Association (CCSA), a standards organization for national communications industry, and become one of its important member units.
- At present, we are leading or participating in nearly 1,000 CCSA research projects. 37 CU-led new international standards projects have been set up, and 23 CU-led international standards have been released. The YIG project incubated by Wo Cloud production system has been accepted as a core project by the Linux SODA Foundation, breaking the history of zero leading project in the international open source community.
- The project “Key technology research and industrial application of 5G co-construction and sharing” led by China Unicom won the first prize of China Institute of Communications.

| Responsibility Performance Indicators | Year 2020 |
|---|-----------|
| International standard contributions (articles) | 467 |
| Industry standards (item) | 295 |
| Patents applied (item) | 1,734 |
| Patents authorized (item) | 518 |

Enabling Digital Transformation of Industries

China Unicom promotes the modern digital technology to enter into different walks of life, takes technological innovation to enable digital upgrading of industries, continuously promotes the advanced development of the industrial base and the modernization of the industrial chain, and takes innovation as the pivot to drive high-quality development.

Making an overall arrangement of smart city

China Unicom takes the goal of improving quality and efficiency of cities as the leading factor, to empower three major fields of urban governance, social governance and economic governance by building a smart data brain engine, and takes the strategy of solving livelihood issues and expanding domestic demand as the orientation, to enable modernization and upgrading of urban governance, and improve the level of intelligent and refined governance.



Screen displayed by China Unicom's smart data brain engine

China Unicom Fujian branch company has independently developed a pluralistic dispute resolution platform - "Hui Hejie" (meaning smart settlement), to reasonably allocate various social resources for resolving disputes, and use a new mode of "Internet + diversified governance" to effectively improve the modernization level of the social governance system and governance capability of the grass-roots units. In 2020, the platform had been put into use in Changle District Committee of Political and Legal Affairs, Dongjiekou Police Station, and Putian Justice Bureau, which had been used by more than 10,000 users and resolved more than 1,000 conflicts and disputes, effectively protecting social harmony and stability.



"Hui Hejie", the first pluralistic dispute resolution platform in Fujian Province, was officially released

Developing digital government

China Unicom uses 5G, AI and other new technologies to build a digital government platform, enhance the government's operation efficiency and decision-making ability, improve the perception of citizens and enterprises, and assist the building of digital government.

China Unicom Chizhou branch fully implemented the strategy of "embracing the government", signed strategic cooperation agreements with all county and district governments, thought what the government thought, did what the government needed, focused on the project of "platform + application + operation", solved the governments' pain points through IT means, helped to promote the modernization of governance capacity of governments at all levels, and has become the pioneer of digital government building in Chizhou.



Launching ceremony of Chizhou Smart CPPCC Platform

Centering on the core function of "government information service and comprehensive application of information and data", China Unicom Liaoning branch company has led the construction and maintenance of "Liaoning e-government cloud" project. Now, it has run 768 non-classified government information systems of 78 commissions, general offices, departments and bureaus, and put into use 46,000 core VCPUs, 153T RAMs and 6PB storage resources to provide intellectual support and operation guarantee for "building digital Liaoning and digital government".

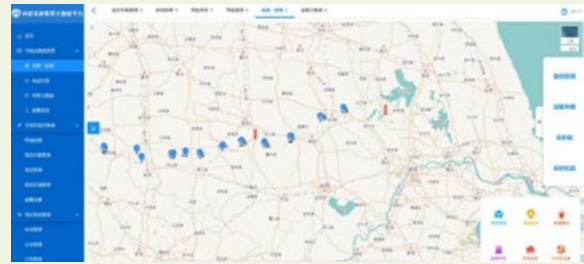
Developing smart ecology

With the goal of "green and low-carbon development and environment quality improvement", China Unicom takes advantage of its own information, digital and intelligent means, to provide three kinds of product solutions for smart ecology, smart housing construction and smart water conservancy, and help achieving "a fundamental improvement in the environment" by 2035 and realizing the good wish of "lucid waters and lush mountains".

China Unicom Henan branch company provided full assistance to the battle of pollution prevention and control by building smart water management service platform, smart sand mining supervision service platform and lampblack monitoring platform.



Jia County Smart Water Management Service Platform



Smart Sand Mining Supervision Service Platform

Building smart factories

Based on 5G + industrial edge cloud + AI, China Unicom has launched “5G + Industrial Internet Action Plan” and “5G + Industrial Internet Application Scenario Joint Innovation Plan” to build “5G fully connected factories” for large enterprises and “Yundi Industrial Internet Platform” for small and medium-sized manufacturing enterprises, with the mission of being an enabler for digital transformation and upgrading of industrial clusters and enterprises, so as to promote the transformation and upgrading of China toward intelligent manufacturing.

China Unicom Xuzhou branch, together with Xuzhou Construction Machinery Group (XCMG), has built the first smart park private network in China's construction machinery industry based on 5G SA end-to-end slicing and edge computing, which realizes the whole chain connection of signal transmission, control, design, production and circulation, integrates enterprise's whole value-chain application needs such as 5G+intelligent R&D, 5G+intelligent manufacturing, 5G+market service, 5G+smart park, and 5G+product construction, and realizes total-factor connection of people, vehicles, machinery and equipment, production materials, upstream and downstream resources in the industrial chain, to help XCMG's smart transformation.

Innovating smart medical care

China Unicom actively explores the application of 5G in many scenarios such as smart hospital, telemedicine, smart pension and health consumption, to comprehensively improve the services to doctors and patients, support the fields of emergency treatment, clinical diagnosis and treatment, medical education, hierarchical diagnosis and treatment, hospital management, etc., so as to help build healthy China.



China Unicom Henan branch company's “Internet + health-based poverty alleviation” remote consultation application



Application of remote visit to ICU ward by China Unicom Fuzhou branch

China Unicom Jiangxi branch company has built a 5G operating room + VR remote teaching system for the Affiliated Hospital of Jiangxi University of Traditional Chinese Medicine to provide various services such as operation teaching, operation guidance, operation observation and medical education, and improve the management of operation teaching and medical education & training in the hospital via real-time, two-way and medical quality video.

Boosting smart culture & tourism

Keeping to the informationization policy and demands of the tourism industry, China Unicom tries to create a series of smart culture & tourism products covering culture & tourism administrations, tourist attractions, cultural centers and museums. We have provided services for 17 provincial culture & tourism departments, 116 municipal and county culture & tourism bureaus, more than 100 scenic spots and cultural centers and museums, and helped establish smart tourism platforms for 34 all-for-one tourism demonstration areas, becoming a smart technology service provider with sound reputation and great brand influence in the field of culture and tourism.

Taking “smart tour of Hailing Island” as the goal, and “free tourism experience for tourists supported by ubiquitous government administration service” as the starting point and objective, China Unicom Yangjiang branch in Guangdong Province strives to build an information base for cultural tourism in Hailing Island, including a big data center, a comprehensive management platform, a comprehensive marketing platform, a comprehensive service platform, demonstration & guiding standards, and a comprehensive guarantee system, so as to promote the transformation and upgrading of the tourism industry in Yangjiang.



WORK WITH PASSION

DIGITAL TECHNOLOGY DRIVES THE
GROWTH OF TALENTS

Optimizing the Structure of Talent Supply

Enhancing the Protection of Employees' Rights and Interests

Caring for Employees' Continuous Growth

Work with Passion - Digital Technology Drives the Growth of Talents

Talent is the first resource and innovation is the first driving force. China Unicom attaches great importance to talent cultivation, implements the strategy of revitalizing the enterprise through talents, formulates "20 Articles" of the Party Leadership Group closely around the goal of serving the overall development of the enterprise and the development of employees, reshapes the staff team in the process of digital transformation, and focuses on cultivating a group of professional talents with the ability of leading technological innovation and industrial competition. At the same time, we practically safeguard the legitimate rights and interests of employees, give full play to the enthusiasm of employees to participate in enterprise management, share the fruits of reform and development with wide employees, and help them grow together with the enterprise.

Measures adopted in 2020

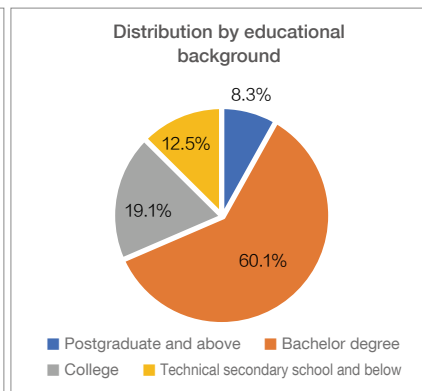
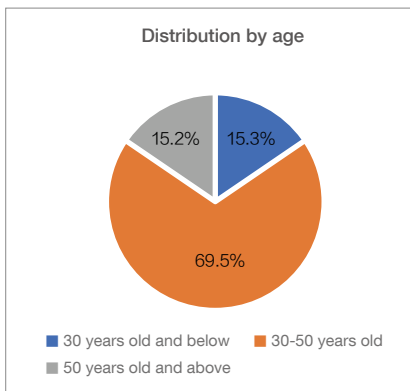
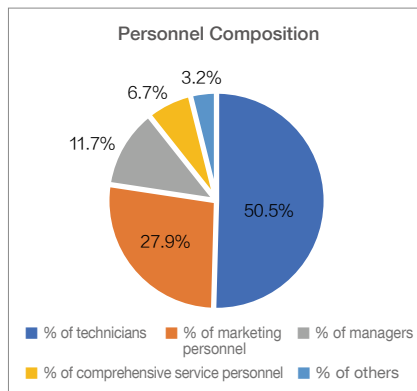
- Built a four-tier talent echelon of 18,000 people and a special zone for innovation talents of more than 7,000 people.
- Built a digital transformation training platform, and carried out 8 Group-level class I and II labor and skill competitions, as well as 23 Group-level class III skill competitions.
- Established warm and harmonious labor relationships, practically safeguarded the legitimate rights and interests of employees, cared for their physical and mental health, and improved their sense of gain.

Measures to be taken in 2021

- To further improve the protection mechanism of employees' rights and interests, make unimpeded the appeal channels for employees, and properly handle disputes related to employees' rights and interests.
- To continue to implement the promotion incentive system, further optimize the four-tier talent management system, and create a broader development space for our employees.
- To continue to promote the implementation of employee care policy, strengthen standard management, propel the systematization of employee care, care for employees earnestly, and solve the difficulties of employees.

Optimizing the Structure of Talent Supply

China Unicom adheres to the principle of people-oriented, cherishes the value of each employee, and attaches importance to the ability building and career development of employees. We are committed to improving the professional talent management system, smoothing the internal and external circulation of personnel, increasing the efforts of talent introduction, creating a high-level talent cultivation system, facilitating the career development of each employee, and promoting their exchange and growth.



| Total employees (person) | Employees newly recruited (person) | Gender distribution (Male: Female) | Proportion of ethnic minority employees (%) | Separated employees (person) |
|--|------------------------------------|------------------------------------|--|------------------------------|
| 242,866 | 10,981 | 1.54: 1 | 6.72 | 5,324 |
| Employees from Chinese mainland (person) | Employees from HK, Macau & Taiwan | Overseas employees | Temporary workers in Chinese mainland (person) | |
| 241,990 | 603 | 273 | 12,596 | |

Optimizing the talent team

Improved the professional talent management system. We steadily promoted the building of core talent echelons in various specialties, and built a four-tier talent echelon from leading professionals, experts, backbone talents to promising talents in 14 specialties, including IT, network, R&D, government and enterprise service, and market. The number of technical professionals in IT, network, and R&D accounted for more than 50%, solidifying the dual-track development for professionals.

Deepened the talent project in the field of innovation. The market-oriented introduction of high-end talents has been carried out in a normalized way, based on the principle of "three unlimited" (unlimited posts, salary and sources), introducing high-end talents in cloud computing, big data, IoT, AI, security and other fields.

The four-tier talent echelon has

18,000

And the exit rate is

14.7 %

At the Group level,

3 high-end talents have been introduced

At the subsidiary level, nearly

30 high-end talents have been introduced

There are more than

7,000 people in the special zone of innovation talents

Restructuring the training system

Strengthened the building of a training system. We made clear the key contents and training hours of education and training for cadres and employees at all levels, and developed targeted training programs and key training projects by means of online and offline, internal and external certification, to effectively promote the implementation of the Group's education and training system in all subsidiaries and specialties.

Built a standard system of professional capabilities. We actively implemented the operation and organization system reform requirements of the Group's professional lines, and developed the professional competency standards, post certification standards and knowledge and skill requirements for employees, to orderly promote the competency certification of professional talents and skill certification for front-line posts. In the whole year, we completed competency certification standards for nearly 30 professional directions, and about 110,000 people have passed the certification exams.

Encouraged participation in in-service education. The company has issued a Notice on Encouraging Employees to Participate in In-service Education, guiding and motivating employees to take in-service education. We continued to promote digital transformation related learning and certification, and more than 11,000 people obtained in-service education degrees or qualification certificates throughout the year.

Promoted an instructor-apprentice system in professional field. The company released a China Unicom Notice on the Establishment of an Instructor-apprentice System, to fully explore and utilize internal talent resources, select professional instructors in the training of employees in professional fields, and take the instructor-apprentice system as an important way to develop employees' capabilities for digital transformation. A total of 12,000 instructors were selected throughout the year.

Expanded online platforms as training channels. We made full use of all kinds of online education platform resources to ensure continuous and uninterrupted education and training during the epidemic prevention and control period and set up a training studio at the headquarters. 172 live-streaming training sessions were organized, having been watched for over 200,000 person times. We also opened a live-streaming public class "Wo Share", which launched 110 courses throughout the year, and watched by 2 million person times.

Accelerated the transformation of talent structure. We continued to cultivate IT/DT talents and organized in-depth training of no less than one month. We optimized and formed competency standards for 25 professional directions of IT and government/enterprise innovation, and organized certification examinations in this aspect nationwide and about 24,000 person times have passed them. We also strove to build a team of intelligent network engineers, and 15,000 full-time and part-time intelligent network engineers have been developed through clear team planning, training, certification and other three-dimensional empowerment.

| Subject | Training content |
|---|--|
| Cadres and staff of the whole Group | Studied Xi Jinping Thought on Socialism with Chinese characteristics in a new era. Organized more than 11,000 sessions of training oriented to all cadres and staff of the Group, participated by over 1.25 million person times. |
| Managers | Carried out training of political quality and professional competency in different levels and categories, and organized a total of five sessions of rotation training for the Group's Party group management personnel, with a total of more than 1,300 people participating in the training. Focused on all-round digital transformation, and implemented 2 sessions of training for outstanding management talents in digital transformation. Selected 33 managers to participate in the training organized by the Organization Department of the Central Committee of the CPC and the professional competency training organized by the superior units. |
| Outstanding young cadres | Organized "China Unicom Party School 2020 Autumn Training Class for Young and Middle-aged Cadres", and 40 outstanding young cadres participated in theoretical study and ability training. |
| Innovative talents and professionals from specialized lines | Organized 38 training sessions of "Engine Program" and "Accelerator Program" for IT talents and government/enterprise innovation talents, and continued to conduct government/enterprise innovation capability and IT competency certification, with a total of 24,000 people passing the exam. Sped up the training of professional talents for competency required by transformation and their posts, and carried out more than 90,000 sessions of skill training for professional personnel, with a total of 10.6 million person times. |
| Front-line employees | Held about 68,000 training sessions for front-line employees in key positions, with a total participation of more than 3.06 million person times; Conducted competency certification among first-line employee, with 69,000 employees passing the exam throughout the year. |

Staff training investment reached

364.86 million yuan

Training covered

10.638 million person times

100 % training rate of top management with the average training time of

167 hours

99.4 % training rate of middle-level management with the average training time of

98 hours

98.5 % training rate of general staff with the average training time of

88 hours



Training on the competency of Party leadership group members to perform their duties carried out online



The Group Company's Youth League Committee organized a training class for cadres of the Youth League Committee in Jinggangshan



Training class for new employees

Building training platforms

In order to build a digital transformation talent team, and establish digital transformation training platforms, China Unicom has actively organized various skills competitions in 5G innovative applications, big data innovation, solutions, and smart Winter Olympics, to constantly improve the technical capability of employees.

Organized skills competitions targeting specific competency. Focusing on the new needs, tasks and requirements of the comprehensive digital transformation on the staff skills, we planned and organized skills competitions meticulously, to align with the central work and effectively promote the transformation of the knowledge and capability of the staff. In the whole year, 30 Group level skills competitions were held, with a total participation of over 400,000 person times, which is the highest number and participation rate in the past years.

Organized labor competitions based on the post. We organized labor competitions to guide the employees to make contributions to the Company based on their posts, and promote the sound and rapid development of the company. The competitions were closely around the business objectives, and took increasing income, reducing costs and increasing efficiency, and promoting comprehensive digital transformation as the themes, with a total participation of 216,000 employees. They directly or indirectly created benefits of 2.33 billion yuan.

8 Group-level Class I & II labor and skills competitions

23 Group-level Class III skills competitions



China Unicom Cloud Migration Skill Competition



China Unicom Network AI Skill Competition



China Unicom Industry Solution Marketing Skill Competition



Optical Cable Maintenance Skill Competition by CU Heilongjiang Branch Company



Customer Service Experience Skill Competition by CU Hunan Branch Company

Enhancing the Protection of Employees' Rights and Interests

China Unicom regards the employees as important wealth for the company's development. It always respects the employees, protects their legitimate rights and interests, serves them wholeheartedly, promotes the common growth of employees and the company for "win-win" development through market-oriented reform of human resources, and constantly improves the employees' sense of happiness and gain.

Insisting on fair employment

- China Unicom stringently enforces provisions specified in the Employment Contract Law and signs contracts with 100% of its employees. The policy of dismissing employees is implemented in accordance with the relevant requirements of the state. The whole Group has achieved full coverage of collective contracts, and some subsidiary companies have signed special contracts such as Collective Contract on the Protection of the Rights and Interests of Female Employees and Collective Contract on Salary Negotiation to effectively protect the legitimate rights and interests of employees.
- Complying with the Interim Provisions on Dispatched Labor, the company continues to promote employment optimization with standardized management, implements regular performance and career development evaluation for employees 100%, and fulfills the "equal pay for equal work" policy, leading to continuous increase in employee satisfaction.
- In the process of recruitment and promotion, it is strictly forbidden to discriminate against employees in terms of age, gender, etc., and it is strictly forbidden to use child labor and forced labor. The measures taken include strict review and control procedures in the selection and entry process, and training for main contractors providing human resources or services. No discrimination incident occurred in 2020.
- We implement the central government's work plan of "stabilizing employment" and give top priority to the employment of college graduates. The Group's recruitment plan for graduates in 2021 will increase by 13% year on year. We will enhance targeted employment assistance, to provide recruitment posts for graduates from Tibet and Xinjiang, and relax employment conditions for Hubei graduates.

Safeguarding democratic rights

- To smooth the appeal channel for employees, the Group has established labor dispute mediation organizations at all levels, mediated more than 90 labor disputes, and built a harmonious labor relationship.
- We implement the relevant national rules on working hours management, strictly implement the declaration system of special working hours, and ensure the right of employees to rest and leave; implement the paid leave system, safeguard the legitimate rights and interests of female employees, and 100% retain the work opportunities after maternity leave.
- The company conducts independent audit on human resource policies and procedures, takes the initiative to identify violation risks, conducts immediate investigation and follow-up on violations and relevant matters, and takes timely remedial measures.

Strengthening positive incentive

- We strictly implemented the national policies and regulations on social insurance, housing provident fund and enterprise annuity; and carried out the work of employee health examination, health lectures and critical illness insurance, to improve the employee health security system.
- We optimized the management method of total wages of the whole Group, and continuously released mixed ownership reform dividends. We improved the allocation rules of labor cost of subsidiary companies, adhered to the incremental revenue sharing mechanism in a continuous line, promoted the stock evaluation adjustment, and realized coordinated growth of labor cost and efficiency, with labor cost increasing by more than 10% year on year. We improved the framework of long-term incentive system, and optimized the flexible welfare system, to further enhance employees' sense of gain.
- For salary distribution, we have broken the "big pot" system of equalitarianism, and launched a comprehensive incentive report system to customize annual salary report for employees. We established a system of reporting the staff team building information to the employees' congress, disclosed the formulation and implementation of human resources policies, and unblocked the channels of information communication.

Caring for Employees' Continuous Growth

China Unicom encourages its employees to carry forward the spirit of "masters" and offer advice and suggestions for the enterprise. Following the philosophy of serving employees, the company tries to fully understand what employees think and need, constantly innovate various measures to serve employees, help employees balance work and life, create an efficient, relaxed and caring working atmosphere for them, and enhance their sense of belonging, security and mission to the company.

Employees participating in management

Taking the implementation of the 20 measures for staff team building as the starting point, China Unicom comprehensively promotes the trinity work of "employees' congress, corporate affairs openness, and employees' suggestions" in the democratic management of the enterprise, effectively protects the vital interests of employees and their enthusiasm to participate in enterprise management, and encourages them to contribute wisdom to the development of the Company.

- More than 560 employees' congress sessions were held in the whole Group throughout the year. More than 1,770 items were reviewed at the provincial company level, more than 14,000 items were reviewed by subsidiary companies and municipal companies, as well as more than 3,230 proposals.
- The leading groups of all units have strengthened the awareness of corporate affairs transparency, established and improved the system and mechanism of corporate affairs transparency, and continuously promoted such work at the front line. In the whole year, more than 3,300 items have been made public, covering all employees.
- Further broadened the channels and ways for employees to give advice and suggestions, and strengthened the collection and application of public opinions through a variety of activities such as "general managers online". In the whole year, more than 150 general managers online activities were held.
- Took advantage of the "three everything" discussion platform to create a "green channel" of proposals from employees' representatives of the Group Company, and more than 4,860 rational suggestions were put forward, with an overall filing rate of 32.6%.

The "20 Articles" of the Party leadership group solved

3,725 problems of concern to the workers

Benefiting

25,000 employees



The Eighth Session of the Second Employees' Congress of China Unicom



Chairman Wang Xiaochu talking with the grassroots representatives at the concentrated discussion meeting of the Employees' Congress

Intensifying services to employees

Caring for employees' children

- In order to alleviate the worry of employees whose children would take part in the Senior High School/College Entrance Exams that they couldn't well balance family and work, the company has implemented a system of paid accompanying leave for them. 11,085 employees in the whole Group have taken the leave, accounting for 91%.
- A "U-choice" platform has been established to provide guidance for the children of staff in filling in their college preferences. Through accurate big data analysis, the platform guides the students to fill in their aspirations according to their scores, ranking and interests. We have opened accounts and provided services for a total of 3,700 employees who had candidates for the College Entrance Examination.



人易我易，我不大意；
人难我难，我不畏难！
祝你旗开得胜，梦想成真！

2020年高考
我们在你身后，为你加油！

浙江联通
2020/7/6



China Unicom Zhejiang branch company carried out a solicitude activity for the employees whose children were admitted to colleges/universities in 2020 and sent a deep blessing to them

Set up special child care classes under the epidemic. China Unicom Sichuan and Shandong branch companies set up cloud-based child care classes. The Guizhou branch company organized a summer camp. The Jiangsu branch company organized parent-child interaction activities of "vegetable picking" and "emergency communications knowledge popularization". The Zhejiang branch company carried out a summer child care program in a mode of small class that took care of 3-5 children each. In 2020, 146 classes were opened nationwide, caring for more than 5,000 children of employees. There were 6 provinces opening more than 10 classes.



China Unicom Guizhou branch company carried out the child care program for employees' children in the form of military summer camp



Summer child care class organized by China Unicom Henan Hebi branch

Promoting the construction of "five types of facilities"

China Unicom has set up a special fund for the construction of "five types of facilities" to improve the working environment for its employees. In 2020, we provided a subsidy of 4 million yuan for 37 projects of 17 branches to construct or transform more than 3,500 grassroots units, which have received investment of more than 70 million yuan.

China Unicom Henan branch company has gradually formed a unified, intensive, refined and professional management mode for provincial, city, county companies and sub-offices by building an asset management platform for the "five types of facilities", to reduce asset loss, reduce input costs, increase input-output benefits, and improve management level and efficiency.

China Unicom Fujian branch company set up an exclusive "health cabin" in city, county and grid units to provide free health examination, guidance and consultation for employees, and guide employees to learn to "manage their own health", providing convenient, timely and warm experience for employees.

Heatstroke prevention measures

In order to further strengthen the care for employees working at high temperature, companies at all levels have formulated heatstroke prevention and cooling policies according to local conditions, and carried out various summer cooling activities.

Leaders of China Unicom Henan, Inner Mongolia, Sichuan, Jilin, and Zhejiang branch companies went to the front line to extend regards to workers working under high temperature, sent heatstroke prevention and cooling supplies to them, and praised them for not afraid of high temperature and abiding by their posts, which greatly inspired the front-line employees.



China Unicom Zhuzhou branch held a watermelon eating competition for front-line employees in hot summer

Paying attention to employees' mental health

Relying on the platform - Home of Employees, the trade union of the Group carried out various online mental care activities such as live video classes, on-site consultation, and parent-child column. The monthly visits of the mental health page of the platform reached 120,000+ person times, and the mental care courses had been watched by 21,281 people.

The trade union at the headquarters, Shanghai branch and Chongqing branch carried out a variety of offline activities, including salon, OH card, massage for pressure reduction, sand table, and psychological games, to help employees improve their psychological capital and pay attention to mental health.

Chongqing branch has organized several EAP lectures, and built an EAP service brand project.

Caring for female employees

In order to establish and publicize the models of advanced female employees who do pioneering work, and give play to their leading roles, we carried out Group-level selection and commendation activities of "Women's Civilized Posts" and "Meritorious Female Models", greatly stimulating the enthusiasm of the wide female workers to love their jobs, strive for first-class achievement, work hard, and be brave in innovation.

All branches at all levels are committed to serving the wide female employees. Through the way of Internet plus trade union, they actively carried out health lectures, knowledge training, talent show and other activities for female employees; promoted the implementation of "Mom Stations" and "Priority parking"; organized lectures on how to protect female workers' rights, marriage law forum and other activities; provided female worker-specific insurance together with special health checks; and propelled the establishment of more breastfeeding rooms, to bring love and care to each and every female employee.

Ensuring safe production

The Company has further implemented the responsibility of safe production, improved five Group-level safety management rules and regulations, integrated safe production into the rolling plans of the companies and specialties, and improved the safety supervision mechanism and personnel safeguards, to comprehensively implement safe production. We have also strengthened the safety training for new employees, to make them understand the production characteristics and main hazard factors of their posts, be familiar with the use of health facilities and protective equipment, and strictly implemented the requirements for special posts with certificates. No production safety accidents occurred in 2020.

93
safe production
training

100%
coverage of safe
production training



China Unicom Yanshi branch organized fire safety training

Diversified entertainment activities

China Unicom actively organizes various forms of cultural and sports activities, to enrich the cultural and sports life of the staff, and enhance the cohesion and combat effectiveness of the team. The staff showed the spirit of teamwork and striving upward.

Helping employees with difficulties

In accordance with the requirements of "covering the bottom line, weaving a close-grained network, and building a mechanism", China Unicom has established a mutually complemented assistance mechanism consisting of archives of employees with difficulties, critical illness insurance assistance, and mutual assistance funds of employees. In 2020, an online platform for managing the archives of employees with difficulties was established, realizing the electronic and dynamic management of the whole process of filing, helping and poverty alleviation. We continued to expand the types and coverage of critical illness insurance for employees, and increase the sum insured. In 2020, 5,498 people received help and 64.45 million yuan of compensation. 25 provincial branches have set up mutual aid fund, further expanding the protection scope and forming a "trinity" assistance system of critical illness insurance, mutual aid fund and supplementary medical care.

Invested
78.8
million yuan to help
employees with difficulties

Invested
42.59
million yuan to
extend solicitude

ENHANCE COOPERATION

BUILD A DIGITAL, MUTUALLY-BENEFICIAL AND WIN-WIN ECOSYSTEM

Cooperating with Fellow Operators for Win-win Development

Advancing In-depth Industrial Cooperation

Building a Digital Innovation Ecosystem



Enhance Cooperation - Build a Digital, Mutually-beneficial and Win-win Ecosystem

Working together for mutual benefit and win-win results is not only an economic law, but also in line with the historical logic of social development. When the world is accelerating digital transformation, China Unicom continues to strengthen cooperation with its peer operators, strategic investors, Internet companies and industry chain partners, to promote industry collaborative development and network co-construction and sharing, drive the optimization and upgrading of industry chain and supply chain, so as to prosper the digital innovation ecosystem, and jointly contribute to the improvement of people's life and the building of intelligent society.

Measures adopted in 2020

- Strengthened the ecological construction of the industry, deepened the co-construction, sharing and co-maintenance of the network, and opened 380,000 5G shared base stations in total, saving more than 76 billion yuan of investment.
- Drove the collaborative development of equipment suppliers, terminal suppliers, channel partners, virtual operators and other upstream and downstream partners in the industrial chain.
- Enhanced innovation and cooperation with strategic investors and leading enterprises in digital consumption, industry digitalization and capital.

Actions to be taken in 2021

- To steadily promote 5G co-construction and sharing, and promote the exploration of one network for indoor distribution and one network for the rural area in terms of 4G.
- To promote the upstream and downstream partners of the industrial chain to fulfill their social responsibilities.
- To explore 5G business cooperation models, expand the platform to gather new resources, and build a digital consumption ecosystem in depth.
- To further deepen capital operation and improve the weakness in core competence in the field of innovation at a faster speed.

Cooperating with Fellow Operators for Win-win Development

China Unicom adheres to the development philosophy of win-win cooperation, continues to expand the depth and breadth of cooperation with fellow operators, and has taken important steps in promoting industrial ecosystem building and network co-construction and sharing, having greatly promoted the sustainable and healthy development of the industry, Digital China construction and the building of China into a cyber power.

Strengthening ecosystem construction in the industry

China Unicom has been unremittingly promoting the development of the industrial ecosystem, resolutely corrected vicious competition at the expense of customer interests and industry value, and driven the whole industry to develop a sound situation of competition and cooperation, to continuously releases development dividends, and contribute to the healthy and sustainable development of the telecommunications industry.

Deepening network co-construction and sharing

China Unicom firmly implements General Secretary Xi Jinping's instruction on speeding up the construction of 5G, thoroughly puts into practice the new development philosophy, and actively promotes mutual complementary cooperation among companies in the industry in terms of resources and innovation by following the principle of "win-win cooperation and common development", and taking network supply capability, quality and efficiency improvement as the aim, so as to form a synergy effect of development, and strive to become a preferred operator of customers with satisfied network perception.

Fully promoting 5G co-construction and sharing

China Unicom has vigorously promoted cooperation with China Telecom to jointly share a 5G access network in the whole 5G life cycle and the whole network.

- Strengthened cooperation management. The two sides established working groups on 5G co-construction and sharing at the group, provincial and municipal levels simultaneously, developed a 2020 Guidance on Co-construction, Sharing and Co-maintenance of Basic Network, formulated unified technical specifications for network co-construction and sharing, and 4/5G Network Quality Evaluation Standards, and improved the organizational and system safeguards.
- Built the world's first largest co-constructed and shared 5G network in the shortest time and with the least investment, which doubled the network scale, coverage, bandwidth and speed, providing users with better mobile network services.
- Further promoted joint construction, sharing, maintenance and optimization of 5G network. Taking "consistent user perception, business experience, network quality and service support" as the work goal, we cooperated to improve network quality, and realize leading network quality and user perception.
- We are the first to realize commercial use of 5G SA in the world, effectively driving the development of 5G industrial chain and the upgrading of 5G consumption.
- Our 5G co-construction and sharing work has been fully affirmed by the central leaders and praised by the SASAC, MIIT and other competent ministries and commissions for several times. On March 27, it was selected into the People's Daily's series reports - "Developing New Infrastructure and Cultivating New Driving Force".

Scale doubled:
having opened

380,000

shared 5G base stations

Coverage doubled:
covering

348

cities nationwide

Speed doubled:
achieving the world's
highest speed -

2.7 Gbps

in the mid-frequency of 5G

Economic effectiveness:
having saved over

76 billion yuan

of investment and more than

9 billion yuan/year for
operating cost



On September 9, 2020, China Unicom and China Telecom held a meeting in Beijing to review and summarize the work in the first anniversary of 5G network co-construction and sharing and promote to comprehensively deepen the co-construction and sharing cooperation. The chairmen of both sides launched cloud-based co-construction and sharing award presentation

4G co-construction and sharing to a new level

- Cooperating with China Telecom, we further boosted 4G co-construction and sharing, which focused on three scenarios: complementary coverage, new scenarios and site consolidation, explored and promoted one network in rural areas and one network for indoor distribution, and has effectively expanded the network coverage and improved the network quality.
- During the year, we had another 390,000 new 4G shared communities, saving 9 billion yuan of investment for the country and 1 billion yuan of operating cost every year.

Substantial progress has been made in full scale co-construction and sharing

- We deepened and expanded the joint construction, sharing, and maintenance of basic resources, and realized full co-construction for incremental resources and sharing for stock resources. We continued to expand cooperation areas, improve cooperation effectiveness, enhance the operation efficiency and effectiveness of basic resources, and reduce network costs.
- We expanded the scope of cooperation with peer operators to optical cable co-construction, fiber core sharing and cloud infrastructure.

| Responsibility Performance Indicators | 2018 | 2019 | 2020 |
|---|------|------|------|
| Co-construction rate of 4G indoor distribution system (%) | 79 | 79 | 65 |
| Co-construction rate of poles (%) | 91 | 91 | 95 |
| Sharing rate of poles (%) | 95 | 97 | 92 |
| Co-construction rate of pipelines (%) | 94 | 92 | 94 |
| Sharing rate of pipelines (%) | 96 | 93 | 97 |

Focusing on the pain points and difficulties of network maintenance and optimization, China Unicom Qingdao branch in Shandong Province made in-depth cooperation with its counterpart of China Telecom, and proposed a dynamic complementary solution for 4G equipment obstacles met by Qingdao Cross-sea Bridge. After the deployment of the scheme, the network coverage of both sides at the Cross-sea Bridge has been increased from 72.69% to 98.15% on average, and it may save more than 30,000 yuan of annual maintenance cost according to the initial estimate. The resource sharing between the two sides has optimized the mobile network coverage quality for maritime transportation facilities and the surrounding sea areas, providing great convenience to local people.



The fault points and covered sections of China Unicom and China Telecom at the Cross-sea Bridge are complementary to each other



Left: On April 22, the jointly built and shared 5G base stations by China Unicom Zhejiang Ningbo branch and China Telecom Ningbo branch exceeded 1,500 Right: China Unicom Shanghai branch and China Telecom Shanghai branch held a joint communications guarantee drill for China International Import Expo



China Unicom Jiangsu branch comprehensively promoted co-construction and sharing



China Unicom Henan branch achieved good results in co-construction and sharing

Advancing In-depth Industrial Cooperation

In the new era of intelligent connection of all things, China Unicom, oriented to the industrial chain and with an open mind, establishes innovation alliance, develops business models and shares high-quality resources with all parties, develops new space for 5G integrated development, as well as expands cooperation in technology, business, resource, capital and other fields, to create a benign industrial ecosystem.

Deepening cooperation with equipment suppliers

China Unicom has strengthened standard management of equipment suppliers, embedded the system into the supply chain platform, and implemented whole-process digital operation of the supply chain.

Strengthening standard management

- Projects that must call for bids according to law shall select providers by public bid inviting in strict accordance with the requirements of national laws and regulations. According to the concept of open procurement of SASAC, projects that are not compulsory for bids invitation shall innovate trading tools, such as open comparison & selection and open direct-purchase, and select qualified suppliers through the supply chain platform. The amount of centralized procurement was about 81.63 billion yuan.
- We reduced the access threshold for suppliers and widely adopted a product technology qualification system, enabling small-scale suppliers to participate in procurement activities fairly. For bidding and purchasing activities, we conduct credit checking of enterprises, and those enterprises that violate rules and break promises are not allowed to participate in the bidding activities.

Building a digital supply chain

- We kept upgrading the functions of electronic bidding platform, and added an audio and video conference function, which realizes online bid evaluation during the epidemic prevention period, and improves user perception.
- We continued to improve the capability of the e-mall, by providing diversified and convenient procurement support services, product manager operating platform and a variety of procurement tools for market-oriented front-line sub-divisions, having comprehensively improved the efficiency of procurement.
- We made overall planning to build an information base of suppliers management, achieving online closed-loop management of the suppliers in the whole process and life cycle, and providing basic information support for suppliers assessment.
- On the basis of whole-process online operation of supply chain source searching, procurement, logistics, warehousing and disposal, we built an IT-based intensive risk prevention and control management & organization system; developed a big data-based digital risk prevention & control model through risk identification, assessment, response, control and other processes; and implemented digital, intelligent, real-time early warning and control of risks in the whole process of procurement to identify and eliminate potential risks.

The total number of e-mall suppliers reached

57,000

with an annual increase of

16,000 suppliers

and

7,659

withdrawn and degraded suppliers

| Indicators | 2018 | 2019 | 2020 |
|---|-------|--------|--------|
| Centralized procurement ratio (%) | 88.6 | 90.6 | 91.4 |
| Proportion of localized suppliers (%) | >99 | >99 | >99 |
| Frequency of information checks on suppliers (Time) | 8,135 | 19,072 | 25,653 |
| Proportion of electronic procurement (%) | 58 | 68 | 88 |

Expanding cooperation with terminal suppliers

By building the woego trading platform and a service portal for terminal partners, we have strengthened the guidance and management of terminal suppliers, and improved the work efficiency and use perception of partners.

Building cooperation and sharing platforms

- As a comprehensive B2B trading platform covering the whole country, woego platform provides intelligent trading, service empowerment, financial loans, channel marketing and other services to the upstream and downstream partners of the industrial chain, as well as exclusive services of smart ecological cooperation such as intensive operation, special zone sales, exclusive consultants and special marketing. In 2020, the platform served more than 30,000 small and medium-sized channel trading customers.
- We built a service portal for terminal partners that takes service experience as the core concept, to realize visualized and transparent online management of the process from cooperation to terminal coming into the market, and continuously improve work efficiency and partners' use perception.
- Actively developed market-oriented multi-supplier cooperation. In 2020, the headquarters introduced 102 mobile terminals, 314 pan-intelligent terminals and more than 240 provincial suppliers.

Promoting terminal suppliers to fulfill responsibilities

- Organized "Joint Revitalization Action 2020" and China Unicom "1st Anniversary for 5G to Take off" activities, empowering more than 100 partners and different industries to fight against the epidemic and resume production.
- Established a supply chain system for smart and healthy elderly care, created a communication platform for smart elderly care providers, improved their ability to fulfill their social responsibilities in terms of healthy elderly care, so as to let the elderly fully enjoy digital health services.
- Requested the partners to earnestly implement the 3C (China Compulsory Certification) and SRRC (State Radio Regulatory Commission) certification requirements for terminal products, adopt environment-friendly materials in transporting terminal products, promote the service of exchanging old for new, and recover old machines in a scientific way to reduce the pressure on environment.
- Strengthened the governance of mobile phone malware and all of our terminal suppliers have promised that their terminal products would not install malware. We also try to grasp the prevention mechanism adopted by terminal suppliers in a timely and dynamic way, to safeguard the legitimate rights and interests of consumers.
- Took the initiative to communicate with the terminal supplier with negative news, and set up a special team to quickly check and verify customer complaints, and reassure the customer, to reduce the negative social impact, and maintain the corporate image and reputation.

China Unicom has actively built an ecosystem of terminal cooperation, and 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 the fields of chip, module terminal, application content and chain channel, forming a sound situation of joint progress and win-win cooperation between the upstream and downstream of the industrial chain.

On February 24, 2020, China Unicom joined hands with more than 1,000 ecological chain enterprises to launch a 37-day online activity for new ecological cooperation on 5G terminal industrial chain - "Joint Revitalization Action 2020".

How to be "Joint"?

Promote the new ecosystem of industrial chain to evolve from a single chain of communications industry and intelligent terminal industry to multi-chain integration through cross-industry cooperation; and carry out platform sharing, with the participation of industrial chain partners, and resume normal production and operation as soon as possible.

How to achieve "Revitalization"?

Revitalize the industry by five functions: cooperative alliance, empowerment release, forum & salon, cooperation recruitment and 5G+VR participation; and revitalize the market by creating activities such as cultural and creative day, e-sports day, brand day, promotion day and new product day together with partners.

On March 11, China Unicom established a 5G XR terminal ecological alliance with 21 partners such as chip manufacturers, engine manufacturers, XR terminal manufacturers and XR application content providers, and released a series of 5G XR plans, including to launch three enabling platforms, namely, commercial platform, incubation platform and technology platform of XR terminal and 8 implementation plans, to jointly promote the further development of 5G terminal industry into a professional field.



Expanding cooperation with channel vendors

China Unicom has strengthened digital innovation, empowered the transformation and development of cooperation channels, and aims to achieve win-win results for operators, cooperation channels and users through financial cooperation, privilege cooperation, resource sharing as well as ecological and platform channel-based cooperation and operation, to build a sustainable, high-quality and ecosystem-oriented new operation system of cooperation channels.

Enhancing fair cooperation

- **Assisted cooperation channels in epidemic response and production resumption.** We actively responded to the call of the state, quickly implemented the "double guarantee" work requirements of the Group's leading Party group on epidemic prevention & control and production & operation, and formulated a mutual assistance plan consisting of "18 items and 6 articles on work and production resumption for cooperation channels", to overcome difficulties, help the cooperation channels to fight against the epidemic and resume production, and resume production and operation as fast as possible.
- **Drove the transformation and development of cooperation channels.** We iterated and innovated our digital capabilities, and empowered our channel partners through financial installment, agile supply chain, and online marketing, to improve the operation capability of our cooperation channels, and drive their transformation and development. In 2020, the order number of financial installment in our cooperation channels increased by more than 50% over the previous year, and the cloud shelf has open to 28,000 cooperation channels in 30 provinces.
- **Improved the digital capability of IT system.** We continued to promote lightweight platform tools for fast cooperation introduction, fast business acceptance, and fast revenue sharing, to promote partners to improve efficiency and increase benefits.

Promoting channel vendors to fulfill responsibilities

- We fully applied portrait matching technology and ID card verification equipment, to implement the "real name registration system", and help channel partners carry out production and business activities in compliance with laws and regulations.
- We strengthened the training, publicity and implementation of various policies to ensure that the channel partners could understand our policies well. Relying on the IT and big data capability, we analyzed and checked abnormal data to reduce the risk of illegal operation.

By the end of 2020, our channel partners reached about

200,000

Developed

4,000+

cloud stores through the online cooperation channel

Enhancing cooperation with virtual operators

Sticking to the concept of “positive, cooperative, open and win-win”, China Unicom takes four major measures of “promoting healthy environment, fighting the epidemic, strengthening innovation and building an ecosystem” to promote the high-quality transformation and development of resale business.

Promoted healthy environment. We established a full-cycle control mechanism to deal with the problem of spam information of virtual operators, guide the healthy and compliance development of virtual operators, and create a clean and positive atmosphere in the industry. The complaint rate on crank calls of virtual operators has reduced by 76%.

Fought the epidemic. During the most serious period of the epidemic, we launched nine measures, including delaying payment time, ensuring resource supply, and strengthening operation support, to work together with cooperative companies to overcome difficulties and help them resume work and production smoothly.

Strengthened innovation. We expanded the scale of value-added services such as communications assistant, coloring ring back tone and privileges, opened 5G high-speed network, VoLTE high-definition voice and message billing capabilities, and took the lead in starting the IoT resale, to improve the business and service innovation capability of virtual operators.

Built an ecosystem. We strive to meet the needs of consumers for a better and smart life through wide dual-direction empowerment, achieving all-round ecological cooperation via the cooperation platforms of virtual operators, introducing high-quality products and capabilities of cooperation companies, and enhancing the collaboration of internal branches and subsidiaries. In 2020, we cooperated with 28 companies in the resale business, and expanded the pilot scope to nearly 300 cities, covering most provincial capitals and economically developed regions, and the number of our resale service users has reached 61.73 million.

By the end of 2020,
the resale users reached

61.73 million

Building a Digital Innovation Ecosystem

Digital economy cannot develop without a digital ecosystem. In the face of the development trend of digitalization of consumption and industry, China Unicom continues to deepen cooperation with strategic investors and leading enterprises in the fields of public innovation, government/enterprise innovation and capital, to jointly provide customers with high-quality products and services, and contribute to economic and social transformation and upgrading.

Deepening cooperation in digital consumption

China Unicom actively expands cooperation in the field of digital product innovation, to provide customers with high-quality products and services.

- Established a joint project team with Baidu, focusing on smart family, smart customer service, brand building, live-streaming linkage and other fields, to deepen cooperation, develop a ten-million level ecological product system, and provide customers with diversified products and services with good experience.

- Gathered high-quality resources of both sides with Ali, and carried out platform docking and ecological cooperation of “field, goods and people”, to jointly expand and strengthen product operation, channel operation and customer operation to achieve mutual benefit and win-win results. In 2020, we promoted digital rural cooperation, and built more than 6,000, covering 140,000 users.

- Cooperated with Tencent Video, iQiyi, Youku Video, Mango TV, Bilibili and other quality partners, developed more than 20 million users of cooperative products based on “content + data traffic + privileges” and achieved more than 30 million subscriptions in total.

In April 2020, China Unicom and people.cn signed a strategic cooperation agreement to build an intelligent media platform, through which, we can quickly, accurately and efficiently transmit mainstream and authoritative voice and socialist core values to the people. In the future, the two sides will further cooperate in value-added services, fixed communications service, brand and public opinion service, education platform building and innovative 5G service.



Signed a strategic cooperation agreement with people.cn

In December 2020, China Unicom and Meituan signed a strategic cooperation framework agreement. The two sides will carry out in-depth cooperation around 5G, IoT, big data and other fields based on their resource advantages, promote digital transformation and upgrading by empowering offline services, and jointly explore more business models and development directions.



Signed a strategic cooperation framework agreement with Meituan

Expanding digital cooperation with the industry

China Unicom attaches importance to strengthening cooperation with upstream and downstream partners in government/enterprise products and key projects to contribute to economic and social transformation and upgrading.

- Continued to promote product R&D iteration of joint ventures such as Yunli, Yunjing, Yundi, Yundun and Smart Footprint, to improve the product service capability in the fields of smart city, tourism, industrial Internet, cyber security, population big data, etc. In 2020, we have won the bidding of more than 200 projects, and the bid winning amount exceeded 730 million yuan.
- Continued to deepen cooperation with partners on public cloud, and created a new model of joint construction and operation of public cloud by following the principles of joint investment of resources, effective connection of technologies, and reasonable distribution of income.

In May 2020, Yunjing Culture and Tourism and Guizhou Province developed an all-for-one smart tourism platform - "Touring Guizhou with One Code", serving tourists to Guizhou for their "food, accommodation, travel, touring, shopping and entertainment" with one QR code. At present, the platform has collected more than 20,000 pieces of basic data on 415 grade-A scenic spots, hotels, cultural venues, restaurants, guesthouses, hand-drawn maps, excellent routes and tour guide, which has comprehensively improved the tourists' touring experience in Guizhou.



Building an ecosystem of capital cooperation

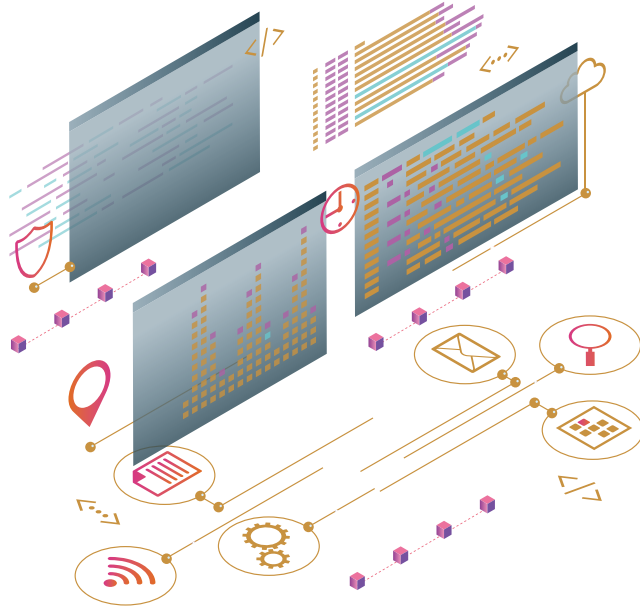
China Unicom carries out capital cooperation with strategic investors such as BATJ and leading enterprises in the industry to drive business cooperation and meet customers' needs through differentiated services.

- In May 2020, China Unicom established iCloud Wisdom Co., Ltd. with NetDragon Websoft, National Engineering Research Center for E-Learning, and National Engineering Laboratory for Educational Big Data, to provide customers with full-process penetrating product services and integrated solutions of educational informatization.



- In November 2020, China Unicom, China Digital Video (Beijing), Academy of Broadcasting Science, NRTA, and Beijing Gehua CATV Network Co., Ltd. established Beijing International Cloud Broadcasting Technology Co., Ltd., to create "all cloud + all IP + all mobile + access as a service" of video transmission, and promote all media, intelligent and lightweight-oriented development of video production and broadcasting.





RESPONSIBILITY MANAGEMENT

Strategy of Responsibility

Organization of Responsibility

System for Responsibility

Capabilities on Fulfilling Responsibility

Communication of Responsibility

RESPONSIBILITY MANAGEMENT

Strategy of Responsibility

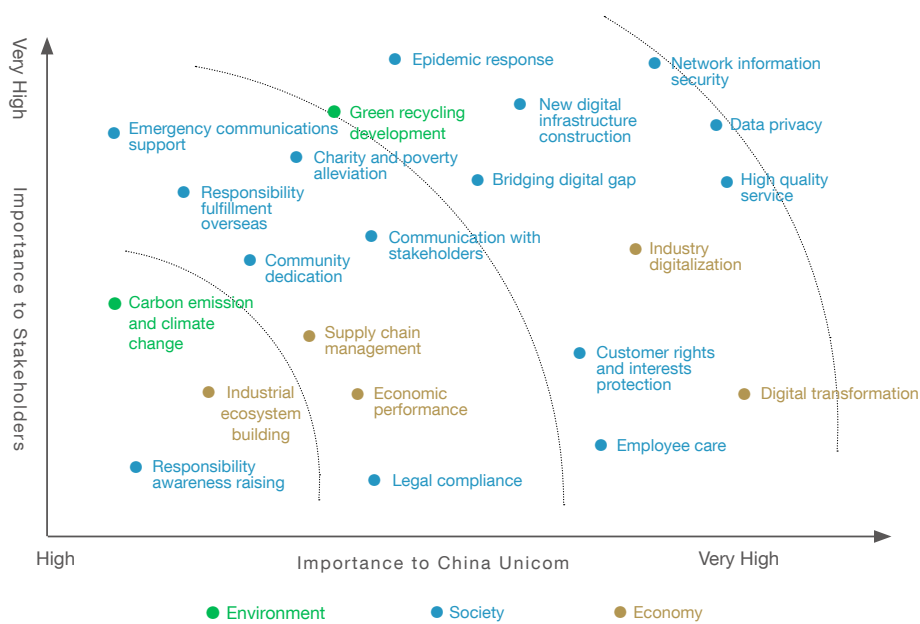
China Unicom has always been committed to integrating self-development with wider social responsibilities, to harmonize and unite corporate interests and social goals. In 2020, the company thoroughly implemented the gist of the fourth and fifth plenary sessions of the 19th CPC Central Committee, adhered to and enhanced the leadership of the Party, continued to take the new development philosophy of “innovation, coordination, greenness, openness, and sharing” as guidance, took practical steps to implement national strategies such as building China into a cyber power, digital China, and the “Belt & Road”, and strove to promote comprehensive digital transformation to fully support economic and social transformation and upgrading.



China Unicom has established a social responsibility topic selection procedure under the principle of “closely following standards, regularly updating and continuously improving”, and keeps updating social responsibility topics by closely following domestic and international changes and social hot issues, and taking advanced enterprises as the benchmark. In 2020, we selected six substantive topics to guide corporate responsibility practices in order to ensure the fulfillment of our social responsibilities could meet the needs of people and society and respond to stakeholders' concerns.



China Unicom's Selection Procedure for Social Responsibility Topics



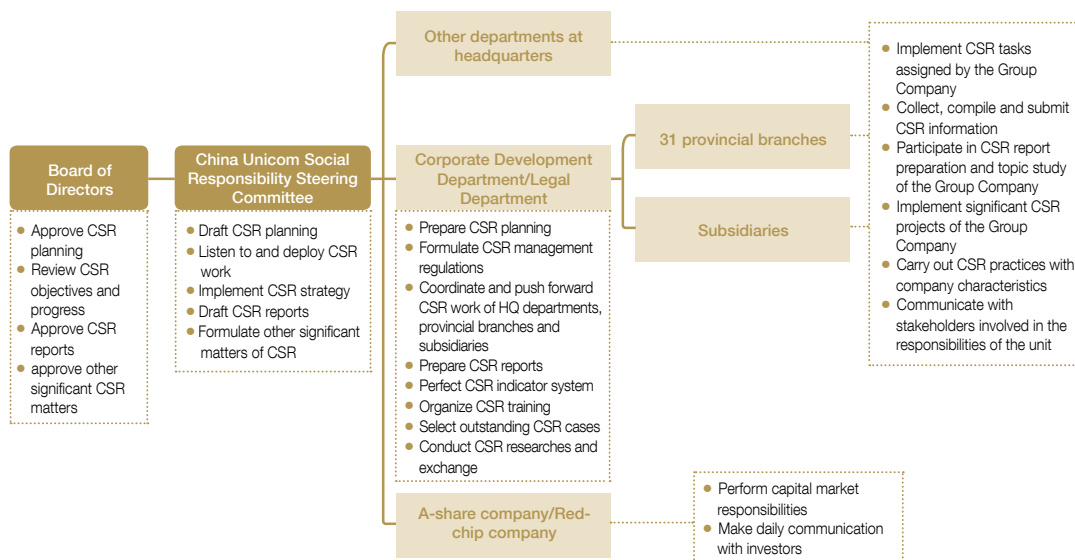
China Unicom Selection Matrix of Social Responsibility Topics

The six core topics of China Unicom in 2020 are determined through the analysis and selection of the topics collected according to the social responsibility topic selection procedure and the topic selection matrix.



Organization of Responsibility

The Board of Directors of China Unicom is responsible for the relevant system, strategy and decision-making of CSR, including the approval of CSR planning, the review of CSR objectives and progress, the approval of CSR reports and other significant matters. The Social Responsibility Steering Committee is responsible for the implementation of CSR strategy and related operating matters. The specific daily work is undertaken by the Corporate Development Department/Legal Department, and other relevant departments of the Group, provincial branches and subsidiaries are responsible for the implementation of social responsibility in specialized fields.



China Unicom's Social Responsibility Working Organizations and Main Duties

System for Responsibility

China Unicom's Social Responsibility Management System consists of organizational management, implementation management, communication management and performance management. In practical work, we adhere to the principles of "management first, integrating into operation and top-down linkage", and make clear responsibility plans to drive the fulfillment of responsibilities and respond to concerns of all parties.

In accordance with international and domestic standards for social responsibility and focusing on 6 substantial topics of the company, we further optimised "China Unicom's Social Responsibility Indicator System", to drive social responsibility to be effectively integrated into corporate production and operation.



China Unicom's Social Responsibility Indicator System

Capabilities on Fulfilling Responsibility

In 2020, China Unicom continued to strengthen the construction of its responsibility capability, and incorporated CSR fulfillment into the company's "14th Five-year Plan", to promote the awareness of responsibility of all staff. We built two-level CSR teams at both the Group Company and the subsidiaries, widely and deeply promoted the implementation of CSR practices, encouraged the improvement of the whole Group's ability in CSR fulfillment through case sharing, and many responsibility practices have won awards from all walks of life. We did a good job in information tracking and disclosure, effectively responded to the concerns of stakeholders, and our CSR report has received positive evaluation. We actively participated in various exchange seminars and training organized by the social responsibility community, at which we paid attention to CSR development trend, learned from excellent enterprises, and contributed ideas and opinions, to help the sustainable and in-depth development of social responsibility.

- Our CSR report was in the "2020 GoldenBee CSR Report Honor Roll - Leading Enterprise", and was selected as one of the "100 Excellent Corporate Social Responsibility Reports" at the International Forum on Corporate Social Responsibility of Industry and Information Technology and Launch Event of the 2020 Sustainable Development Report of China's Industry and Information Technology.
- The three CSR practice cases of 5G co-construction and sharing, digital and intelligent technology enabling to fight the epidemic, and overseas CSR fulfillment were selected into the Blue Book on Centrally-administered SOEs' CSRs; and the overseas responsibility fulfillment case "Connect the World and Let Love Grow" was selected into the "2020 Best Practices for Enterprises Achieving SDGs" of the United Nations Global Compact Network China.
- Took part in the questionnaire survey of the SASAC for its Blue Book on Centrally-administered SOEs' CSRs, and the questionnaire survey of the UN Global Compact on sustainable development goals and demands of the "Belt & Road" project investment.
- Took part in the 2020 China Business Summit on Achieving SDGs of the UN Global Compact, 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, and contributed the wisdom of China Unicom.

Communication of Responsibility

China Unicom has set up a social responsibility communication mechanism to continuously carry out targeted communication according to the expectations of stakeholders and based on the substantial topics of social responsibilities.

| Substantial Topics | Stakeholders | Communication Ways | Expectations for China Unicom |
|---|--------------------------|---|---|
| Enhancing digital infrastructure construction | Customers | <ul style="list-style-type: none"> Meeting Interview | <ul style="list-style-type: none"> High-speed and smooth network Innovative and smart network service High-quality network in remote areas Protecting network information |
| Accelerating technological innovation | All stakeholders | <ul style="list-style-type: none"> Meeting Interview Weibo/WeChat | <ul style="list-style-type: none"> Innovative and forward-looking communications technology Empowering digital transformation of industries |
| Improving service quality | Community | <ul style="list-style-type: none"> Meeting Forum NPS (net promoter score) survey Weibo/WeChat Service hotline Stationing of officials in villages | <ul style="list-style-type: none"> Smart products to improve life quality Favorable and transparent tariff policies Convenient and efficient service guarantee Continuously valid donation Enhancing poverty alleviation and assistance Carrying out volunteer activities for public benefits |
| Improving governance capability | Shareholders | <ul style="list-style-type: none"> Shareholders' meeting Investors communication meeting | <ul style="list-style-type: none"> Timely and transparent information acquisition Long-term and stable investment returns Corporate governance and risk control Legal compliance and clean operations |
| | Government | <ul style="list-style-type: none"> Face-to-face communication Meeting | <ul style="list-style-type: none"> Fair market competition order Efficiency increase and costs reduction Party organization building enhancement Governance capability and system modernization |
| | The public and the media | <ul style="list-style-type: none"> Phone call, forums Internet communication ways | <ul style="list-style-type: none"> Timely learning about company information Information interaction with the company |
| | Ecological environment | — | <ul style="list-style-type: none"> Green and environment-friendly corporation operation Recycling use for less pollution |
| Growing with the staff | Staff | <ul style="list-style-type: none"> Staff forums Employees' Congress Democratic life meeting General Managers online | <ul style="list-style-type: none"> Protection of lawful rights and interests Training and career development opportunities Opportunities for participation in democratic management Support in adversity Safe and comfortable work environment |
| Supporting win-win cooperation | Partners | <ul style="list-style-type: none"> Partners Conference Meeting, interview Self-service portals of partners | <ul style="list-style-type: none"> Wide cooperation areas Fair and open cooperation opportunities Rich and convenient supporting service |
| | Peers | <ul style="list-style-type: none"> Face-to-face communication Meeting | <ul style="list-style-type: none"> Improving the complementary ability of resources Saving the cost and improving the efficiency |
| | Customers | <ul style="list-style-type: none"> Interview, hotline | <ul style="list-style-type: none"> Promoting partners to fulfill responsibilities |

APPENDIX

Key Performance

| Type | Indicator | Unit | 2018 | 2019 | 2020 |
|---------------------------------|---|---------------------------|---------|---------|---------|
| Operations and development | Total assets | Billion yuan | 580.359 | 602.36 | 615.8 |
| | Operating income | Billion yuan | 292.296 | 291.96 | 304.9 |
| | Revenue from main services | Billion yuan | 262.076 | 262.89 | 273.53 |
| | Total profit | Billion yuan | 8.13 | 10.19 | 11.98 |
| | Mobile subscribers | Million | 315.036 | 318.475 | 305.811 |
| | Of which: 4G subscribers | Million | 219.925 | 253.766 | 270.181 |
| | Fixed-line local access subscribers | Million | 55.899 | 54.215 | 47.339 |
| | Fixed-line broadband subscribers | Million | 80.880 | 83.478 | 86.095 |
| | Online 2I users | Million | 53.81 | 54.14 | 50.94 |
| Network capability | Number of 4G base stations | Thousand | 987 | 1,407 | 1,503 |
| | 4G coverage rate of the population | % | 90 | 93 | 94 |
| | Number of fixed network broadband access ports | Million | 215 | 221 | 225 |
| | Broadband coverage rate in administrative villages in ten northern provinces | % | 96 | 95 | 96 |
| | Coverage rate of broadband network at a speed \geq 100Mbps in urban areas (%) | | 77.7 | 86.3 | 85.3 |
| | Coverage rate of network at a speed \geq 20Mbps in urban areas | % | 97 | 96 | 96 |
| | Coverage rate of network at a speed \geq 4Mbps in rural areas | % | 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 |
| | Number of administrative villages where broadband construction has been completed | Thousand | 282 | 299 | 306 |
| | Co-construction rate of indoor distribution system | % | 79 | 79 | 65 |
| | Co-construction rate of poles | % | 91 | 91 | 95 |
| | Sharing rate of poles | % | 95 | 97 | 92 |
| | Co-construction rate of pipelines | % | 94 | 92 | 94 |
| | Sharing rate of pipelines | % | 96 | 93 | 97 |
| | International interconnection bandwidth | G | 2,427 | 2,460 | 2,460 |
| | 4G network call completing rate | % | 99.77 | 99.74 | 99.86 |
| | 4G network call drop rate | % | 0.09 | 0.06 | 0.04 |
| | Cities of 5G commercial use | | — | 50 | 348 |
| | 5G base stations | Thousand | — | — | 380 |
| | IoT connections | Million | 109 | 187 | 238 |
| Commitment in emergency support | Total number of emergency communications support participated | Time | 407 | 578 | 612 |
| | Emergency communications vehicles called out | Vehicle-time | 133,000 | 152,000 | 153,000 |
| | Emergency communications equipment input | Set-time | 94,000 | 119,000 | 180,000 |
| | Personnel used | Person-time | 482,000 | 641,000 | 660,000 |
| Independent innovation | Technological innovation input | Billion yuan | 11.5 | 10.26 | 12.28 |
| | Number of personnel in technological activities | Person | 7,703 | 9,155 | 14,149 |
| | Contributions on international standards | Article | 545 | 500 | 467 |
| | Industry standards | Item | 285 | 280 | 295 |
| | Patents applied | Item | 1,121 | 1,439 | 1,734 |
| | Patents granted | Item | 441 | 658 | 518 |
| Customer service | Monthly average complaint rate in the year | Person-time/Million users | 2.96 | 18.26 | 11.84 |
| | Overall satisfaction rate | Point | 80.42 | 81.11 | 81.32 |
| | Including: Fixed line user satisfaction rate | Point | 85.73 | 87.9 | 87.7 |
| | Mobile phone user satisfaction rate | Point | 81.94 | 82.02 | 82.22 |
| | Fixed broadband user satisfaction rate | Point | 76.17 | 81.51 | 80.49 |
| | Mobile Internet user satisfaction rate | Point | 77.83 | 78.49 | 79.22 |

| Type | Indicator | Unit | 2018 | 2019 | 2020 |
|--------------------------|--|-----------------------|---------|---------|---------|
| People-oriented | Gender proportion of staff | Male:Female | 1.50:1 | 1.53:1 | 1.54:1 |
| | Proportion of minority staff | % | 6.77 | 7.33 | 6.72 |
| | Proportion of females in senior management | % | 11 | 11.9 | 12.5 |
| | Input in staff training | Million yuan | 422.99 | 374.36 | 364.86 |
| | Training length per capita on average | Hour | 66 | 63 | 88 |
| | Network college online learning person-time | Thousand person-time | 11,250 | 18,078 | 51,000 |
| | Network college total online learning hours | Thousand credit hours | 7,040 | 9,163 | 21,782 |
| | Network college total online learning hours | % | 100 | 100 | 100 |
| | Input to help employees in difficulty | Million yuan | 30.22 | 79.00 | 78.80 |
| | Condolence fund input | Million yuan | 28.53 | 28.75 | 42.59 |
| | Employee turnover rate | % | 2.16 | 1.85 | 1.87 |
| | New recruits in the year | Person | 8,565 | 9,831 | 10,281 |
| | Newly recruited male staff | Person | 5,207 | 6,076 | 6,422 |
| | Newly recruited female staff | Person | 3,358 | 3,755 | 3,859 |
| | Staff left voluntarily in the year | Person | 6,636 | 4,521 | 4,692 |
| | Male staff left voluntarily | Person | 3,983 | 2,674 | 2,806 |
| | Female staff left voluntarily | Person | 2,653 | 1,847 | 1,886 |
| | Staff dismissed in the year | Person | 904 | 914 | 1244 |
| | Male staff dismissed | Person | 608 | 560 | 797 |
| | Female staff dismissed | Person | 296 | 354 | 447 |
| | Turnover rate below the age of 30 years old | % | 8.70 | 6.84 | 7.07 |
| | Turnover rate at the age of 30-50 years old | % | 1.82 | 1.07 | 1.18 |
| | Turnover rate above the age of 50 years old | % | 0.21 | 0.14 | 0.13 |
| | Male staff turnover rate in the year | % | 2.64 | 1.78 | 1.88 |
| | Female staff turnover rate in the year | % | 2.75 | 1.95 | 2.02 |
| Low-carbon development | Special investment in energy conservation and emission reduction | Million yuan | 100 | 104 | 123 |
| | Unit information flow energy consumption | Kgce/TB | 3.71 | 3.48 | 2.83 |
| | Petrol consumption | Ton | 42,100 | 41,750 | 40,500 |
| | Diesel consumption | Ton | 13,870 | 13,740 | 11,200 |
| | Natural gas consumption | Million cubic meters | 11.1452 | 7.8585 | 5.423 |
| | Electricity consumption | Billion KWH | 15.066 | 15.81 | 17.22 |
| | Water resource consumption | Million tons | 18.5731 | 18.095 | 14.99 |
| | Water consumption density | Tons/Million yuan | 64.35 | 61.51 | 47.21 |
| | Coal consumption | Ton | 98,500 | 94,000 | 23,000 |
| | Energy saved | Tce | 169,200 | 172,800 | 245,000 |
| | Greenhouse gas emission | Million tons | 13.13 | 13.2 | 14.23 |
| | Total direct GHG emissions (category 1) | Million tons | 0.37 | 0.39 | 0.2 |
| | Total indirect energy GHG emissions (category 2) | Million tons | 12.76 | 12.81 | 14.03 |
| | Carbon emission intensity | Tons/Million yuan | 45.13 | 45.40 | 46.6 |
| | Sulfur dioxide emission | Tons | 70 | 40 | 10 |
| | Recycling upon scrappage and disposal | Million yuan | 621 | 965 | 733 |
| | Disposal of scrapped cables | Ton | — — | 155,000 | 373,000 |
| | Disposal of scrapped storage batteries | Ton | — — | 10,200 | 11,300 |
| | Disposal of general scrapped materials | Ton | — — | 10,900 | 24,700 |
| Compliance management | Legal compliance training organized | Time | 1,920 | 2,514 | 4,580 |
| | Legal compliance trainees | Person | 248,000 | 245,000 | 243,000 |
| | Safe production training | Time | 40 | 87 | 93 |
| | Coverage rate of safe production training | % | 100 | 100 | 100 |
| Community responsibility | Registered volunteers | Person | 43,873 | 47,930 | 55,006 |
| | Participants in volunteer activities | Person-time | 50,412 | 55,004 | 58,095 |
| | Credit rating ¹ | Grade | AAA | AAA | AAA |
| | Total tax paid | Billion yuan | 8.552 | 4.49 | 7.36 |
| | Jobs created | Person | 10,954 | 10,296 | 10,981 |
| | Total donation | Million yuan | 191.96 | 236.72 | 303.679 |

Company Honors

- China Unicom won several Best awards in the "IR Magazine Awards - Greater China 2020", including "Best Overall Investor Relations (Large Cap)", "Best in Communications Sector" and "Best in Hong Kong".
- China Unicom won "Asia's No. 1 Most Honored Telecom Company", "Asia's Best ESG (Telecoms)", and "Asia's Best IR Team (Telecoms)" in the vote organized by Institutional Investor.
- China Unicom was awarded "Most Outstanding Company in Asia - Telecommunication Services Sector" & "Overall Most Outstanding Company in Hong Kong" in the "Asia's Outstanding Companies Poll 2020" organized by Asiamoney.
- China Unicom was voted as "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: "Asia's Best CSR", "Asia's Best CEO", "Asia's Best CFO", and "Best Investor Relations Company".
- The official Weibo and WeChat accounts of China Unicom's customer service won the "2020 Most Influential New Media Second-level Accounts of Centrally-administered SOEs" issued by the SASAC News Center.
- All the counties designated to China Unicom for poverty alleviation got rid of poverty on schedule and China Unicom have obtained the highest level evaluation in the assessment of designated poverty alleviation of central units for two consecutive years.
- China Unicom was awarded the "National Advanced Group for Poverty Alleviation" by the Party Central Committee and the State Council.
- China Unicom Big Data Company was awarded the "National Advanced Group in Fighting against COVID-19 Epidemic" issued by the CPC Central Committee, the State Council and the Central Military Commission; won the "2020 Government Information Products Technological Innovation Award" issued by China Information Industry Association; and won the "2020 Telecom Big Data Innovation Contribution Award" issued by the Big Data Research, Digicn.cn and the Organizing Committee of China Telecom Big Data Industrial Conference.
- China Unicom Cloud Data Company won the First Prize of Science and Technology Innovation in 2020 awarded by the National Internet Data Center Innovation Technology Alliance, and the "2020 Pioneer Award for Operators of New Infrastructure Construction in China's IDC Industry" awarded by the China Communications Industry Association Data Center Committee.
- China Unicom System Integration Company won the "2020 Information Technology Industry Excellent Enterprise Award" issued by the Information Technology Industry Development Conference.
- China Unicom Payment Company won the "2020 Best Financial Technology Innovation Application Award" issued by the Organizing Committee of the 14th China Payment and Scenario Finance (Banking) Congress.
- The "Hope Sent by Books Project" carried out by China Unicom Online Information Technology Co., Ltd. was rated as one of the "2019 Top 10 Digital Reading for Poverty Alleviation Projects" by China Audio-video and Digital Publishing Association.

Description of the Report

| | |
|------------------------------|---|
| Reporting period | From 1 January to 31 December 2020, some sections exceeding aforesaid period. |
| Release frequency | The CSR report of China United Network Communications Group Company Limited is an annual report. |
| Organizational coverage | <p>The report covers China United Network Communications Group Co., Ltd. and its subordinate institutions. For the convenience of expression, "China Unicom", "the Group", "the Company" and "We" are used respectively in the report.</p> <p>Guiding Opinions on State-owned Enterprises to Better Perform Social Responsibilities, SASAC;</p> <p>The Ten Principles of the UN Global Compact;</p> <p>Guidelines for preparation of Report on Performance of Corporate Social Responsibility, Shanghai Stock Exchange;</p> <p>Guidance on Environment, Society and Governance Report, HKEX;</p> <p>Social Responsibility Report Preparation Guidance, ACSIQ and SAC;</p> <p>Guide on Preparation of China Corporate Social Responsibility Report (CASS-CSR 4.0), Chinese Academy of Social Sciences;</p> <p>Guide on Sustainable Development Report (latest edition), Global Reporting Initiative (GRI);</p> <p>Social Responsibility Management System for China Information and Communications Companies, China Association of Communications Enterprises.</p> |
| References | |
| Clarification about the data | 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. |

| | |
|---|--|
| Report 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. |
| Language versions and availability | <p>The CSR Report of the Company is issued in Chinese and English in forms of paper and electronic editions.</p> <p>For the online version of the Chinese report, please visit the website of China Unicom: http://www.chinaunicom.com.cn.</p> <p>For the online version of the English report, please visit the website of Global Compact: http://unglobalcompact.org.</p> <p>Address: China Unicom Corporate Development Department/Legal Department, No. 21 Jinrong Street, Xicheng District, 100033, Beijing, China</p> |
| Contact information | <p>Fax: 86-10-66258674</p> <p>E-mail: yangwei3@chinaunicom.cn</p> |

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Note:

- For detailed data about 102-24, 102-25 and 201-4, please refer to the annual report of China United Network Communications Limited, at <http://www.chinaunicom-a.com/>.
- The ozone depleting substance (ODS), nitrogen oxide (NOX), sulfur oxide (SOX) and other major gases mentioned in 305-6 and 305-7 are not the main emissions of the Company.
- The relevant system or process referred to in 102-28 and 102-56 will be established gradually.

CASS-CSR 4.0

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Note:

1. As China Unicom is large in size and its services have a wide coverage, the total of the waste (including hazardous and non-hazardous waste) referred to in A1.3 and 1.4 has not been counted in classification comprehensively. Through substantive topic identification, we mainly reported the recycling and reuse of the main resources used by the Company in operation such as cables, rechargeable batteries, terminals and general materials. In future, the Company will further complete relevant data statistical system.

2. Since the main business of the Company is telecom service, the packaging material used for finished products referred to in A2.5 is not applicable to the Company's practical business condition.

Feedback

Dear reader,

Thank you very much for reading this China United Network Communications Group Co., Ltd. Corporate Responsibility Report 2020, which is our 14th social responsibility report publicly released to the society. In order to better provide valuable information to you and other stakeholders, facilitate supervision of our work in the field of social responsibility, as well as improve our capability in fulfilling social responsibilities, we sincerely invite you to offer us your opinions and suggestions to this report.

Email: yangwei3@chinaunicom.cn

Fax: 86-10-66258674

Address: China Unicom Corporate Development Department, No. 21 Jinrong Street, Xicheng District, 100033, Beijing, China.

● **You're from:**

A. Customer B. Shareholder C. Government D. Community E. Partner F. Media G. Social group H. Others (please specify) _____

● **Your overall evaluation of China Unicom CSR Report is:**

A. Excellent B. Good C. Average D. Bad E. Very bad

● **What do you think about China Unicom in fulfilling its economic, social and environmental responsibilities:**

Economic responsibility A. Excellent B. Good C. Average D. Bad E. Very bad

Social responsibility A. Excellent B. Good C. Average D. Bad E. Very bad

Environmental responsibility A. Excellent B. Good C. Average D. Bad E. Very bad

● **What do you think about the response to and disclosure of the concerns of stakeholders?**

A. Excellent B. Good C. Average D. Bad E. Very bad

● **What do you think about the information, data and indicators released in this report in terms of clarity, accuracy and completeness?**

Clarity A. Excellent B. Good C. Average D. Bad E. Very bad

Accuracy A. Excellent B. Good C. Average D. Bad E. Very bad

Completeness A. Excellent B. Good C. Average D. Bad E. Very bad

● **Is this report easy to read in terms of content arrangement and format design?**

Content arrangement A. Easy B. Average C. Not easy

Format design A. Easy B. Average C. Not easy

● **Other opinions and suggestions on China Unicom's CSR work and this report:**

Thank you for your feedback and time!



Address: No.21 Jinrong Street, Xicheng District, Beijing
Postcode: 100033
Website: www.chinaunicom.com.cn