



Devoted to
Shouldering

“Corporate Responsibilities”

and Firmly Fulfilling Obligations in
Economic Development



The development of digital information infrastructure and the iterative innovation of digital technology let people enjoy greater sense of reward, happiness and security. China Unicom supports the development of digital economy, and empowers thousands of industries with digital intelligence. It continuously enriched the substance of communication products and services, and vigorously improved network quality and customer experience, in order to provide customers with satisfying high-quality communication services, and contribute to the development of digital economy. As a “pioneer” in the mixed-ownership reform of central state-owned enterprises, guided by the market-oriented allocation of production factors, the Company focused on the deep reconstruction of systems and mechanisms, accelerated the establishment of improved mechanisms to stimulate the vitality of micro entities, so that production relations can be better adapted to the development of productivity. The operating efficiency of the Company has been significantly improved. China Unicom regards its employees as its most valuable assets, attaches great importance to them and helps them achieve success. It provided its employees with a broad development platform and promoted holistic human capital development, forming a good atmosphere for the harmonious development of employees and the Company.



Measures adopted in 2021

- Built core capabilities of cloud computing, Big Data, Internet of things, AI, blockchain and security, and created industrial internet application products in some key industries.
- Launched special services to improve customer perception.
- Deepened the three-year action plan of state-owned enterprise reform and created a process-oriented organisation.
- Built a warm and harmonious labour relationship by effectively protecting employees' legal rights, caring for employees' physical and mental health, and improving employees' sense of reward.



Actions to be taken in 2022

- Comprehensively promoting the “Sailing” action plan for 5G applications, commercialisation of security products, focusing on key regions and industries, and creating “No. 1 supplier of digital services” of digital economy.
- Setting the overall goal of “1 + N + 1” service system to create high quality service.
- Forming a long-term reform mechanism to promote transformation into a digital, intelligent, ecological and platform-based enterprise.
- Deepening the reform of talent development system and mechanism, so that employees could share the achievements of reform and development and grow together with the enterprise.

Boosting the Development of Digital Economy

As an integrator of information and communication technologies and services, China Unicom gave full play to the magnification, superposition and multiplication of digital technologies in economic development. For supply chain, vertical industries, government affairs, people's livelihood and other fields, it cultivated and developed digital application services with certain scale and created application products in the field of industrial integration, sailing in the main channel of digital economy at full strength. It empowered the transformation and upgrade of various industries, and built the “No. 1 supplier of digital services” for the digital economy.

Accelerating Industry Integration

China Unicom is committed to accelerating industry integration. It expanded the innovative applications of industrial Internet and 5G + industrial Internet integration and deepened the innovative application of key vertical industries such as “smart transportation”, achieving the replication and scale expansion of standardised industry products.

Industrial Internet

China Unicom's industrial Internet has formed eight industry solutions, including “5G + smart mine solutions”, “5G + smart steel solutions”, “5G + smart home appliance solutions”, “5G + smart power solutions” and “5G + smart car solutions”, covering more than 10 industrial categories and more than 2,000 benchmark projects, forming a large-scale development model of leading enterprises plus industry clusters.

- For key industries, industrial clusters and enterprises in the region, we built a Yundi industrial Internet platform to enable the visualised, predictable and intelligent management of industrial economy by local governments through the platform, providing support for government decisions.

- By providing a large amount of industrial Internet application resources to local enterprises, we promoted “cloudification and platform-based upgrade” among enterprises and comprehensively improved the level of digitalisation; “Lianqing 5G Fully Connected Factory” realised the comprehensive interconnection of all production factors of manufacturing enterprises, improving the production management. It established a production data middle platform to process and standardise the management of data generated in the production process, realising unified standards of enterprise data interfaces and formats, providing efficient data services for factories, and unleashing the value of data.

China Unicom Jiangxi Branch took smart manufacturing of industrial internet as its key mission. Taking into account the leading textile and garment industry in Qingshan Lake District, Nanchang City, it innovatively created the 5G + smart factory benchmark project of Huaxing Knitting. It empowered the textile and garment industry with 5G + industrial internet, reduced the labour intensity of workers to embody humanistic care, improved the production efficiency and market competitiveness of enterprises, and promoted the development of the local modern textile industry cluster.

Relying on China Unicom Shanxi Branch, China Unicom Industrial Internet Company and other units, China Unicom completed the construction and empowerment application of a total of 170 5G networks in Datang Tashan and Majialiang, and established several joint laboratories with coal groups and universities to develop 5G intelligent applications in coal mines. In 2021, the Company constructed the Tashan Intelligent Dispatch Command Centre and completed the research and application of 5G technology in mines, smart video recognition platforms, wireless sensors and other tests. It realised the full coverage of 5G signals on the ground and underground, building a new mode of intelligent mining.

China Unicom Jilin Branch cooperated with Changchun FAW Group to build a 5G smart automobile factory pilot, providing 5G private network construction technology, equipment, services and other support for Fanrong factory of FAW Hongqi. It worked with partners to jointly verify 5G applications such as high-speed mobile monitoring of overhead cranes, C2C control and computer vision AI quality control, so as to provide support for the digital, intelligent and flexible manufacturing of the factory.

Intelligent transportation

China Unicom focused on information infrastructure construction, industry operation supervision and public travel services, etc. and created 22 industry solutions such as intelligent expressways, intelligent ports, intelligent logistics and intelligent airports. It also executed 2 industry benchmark projects such as Sanya Yazhouwan Intelligent Transportation EPC Project. It served 80+ transportation and logistics customers across the country, continuously empowering the digital transformation of the transportation and logistics industry.

China Unicom (Tianjin) Industrial Internet Research Institute focused on vehicle and road collaborative technology and vigorously promoted the implementation of smart transportation application scenarios. So far, it has successfully developed an application scenario for autonomous buses in Haihe Education Park, Tianjin. At the same time, it has established a “5G + Internet of Vehicles” application demonstration base, setting up a cooperation benchmark for “government, industry, education, research and application”, and driving the rapid development of the intelligent and connected vehicle industry.

Digital village

China Unicom continued to empower rural infrastructure construction, rural governance model innovation, production mode upgrade, and lifestyle improvement by focusing on digital village and leveraging the advantages of digital technology. It built a “model digital village” according to local conditions. The digital applications deployed in rural areas have become a “new agricultural tool” to help rural revitalisation and a “good helping hand” to improve the quality of life of villagers.

Number of administrative villages served by China Unicom Digital Village Platform exceeded

153,000

In June 2021, China Unicom held a digital village promotion conference, officially launched the Digital Village Cloud Platform and its Digital Village brand, and released the China Unicom Digital Village White Paper and a Digital Village product manual to comprehensively serve the economic and social development of rural areas.

For rural governance, industrial upgrade and people's livelihood improvement, China Unicom focused on the implementation of the "Four New Projects" and provided new digital application services with "cloud-network-edge-terminal-business integration". It established a new informatisation paradigm that supported modern agriculture and the integrated development of urban and rural areas, contributing digital power and connected intelligence to rural revitalisation and letting the rural population enjoy digital benefits.

- **Constructing new infrastructure for gigabit connection.** Focusing on building the "One Cloud", "Gigabit Network" and "Universal IoT", we upgraded the "Gigabit Network", promoted the "Smart Large Screen" and built the "Unmanned Farm", promoting the construction of a new generation of information infrastructure in rural areas, and eliminating the digital divide between urban and rural areas. As of the end of December 2021, China Unicom Digital Village covered 153,000 administrative villages, serving 14,363,000 rural permanent residents.

- **Implementing a new platform for rural governance.** Focusing on the last mile of informatisation in rural areas, relying on the Digital Village Cloud Platform, the Company developed a large number of successful applications in rural organisations, online government affairs, village safety, village management and other solutions and services. It injected "smart genes" into basic governance and services to make rural governance more intelligent, granular and professional. By the end of December 2021, it has served over 153,000 administrative villages.

- **Implementing new digital application services.** The Company provided solutions for digital governance services, industrial services, livelihood services and local services, and acted as a digital technology service expert for farmers by implementing digital rural liaison stations and counselors.

- **Implementing the new ecological project of "agriculture, rural areas and farmers" cooperation.** The Company cooperated with various excellent partners to provide smart terminals, smart TVs to rural areas, financial subsidies, trade-in, direct supply and procurement of featured agricultural products, and special training for new farmers to accelerate the digital and intelligent transformation of agriculture, rural areas and farmers.

China Unicom vigorously carried out the construction of model digital villages in targeted villages, and actively developed a number of successful, influential and replicable demonstration projects which could be further promoted to other villages. Currently, 388 projects have been built.

Baer Lake Town is a demonstration town for rural revitalisation in the Sichuan province. China Unicom Sichuan Branch conducted two-way mapping, dynamic interaction and real-time connection for the 20 km² and 8 administrative villages in Baer Lake with due regard to its water characteristics. It applied digital twin technology to rural revitalisation, serving more than 20,000 villagers and approximately 7,000 tourists every day, creating a digital village model with the characteristics of Baer Lake.



New look of Baer Lake Town

China Unicom Guizhou Branch has achieved practical results in serving rural revitalisation. It sorted out more than 17,000 administrative villages in the province and selected 1,757 as the first batch of service areas to be promoted. It built four national demonstration digital villages, namely Guiyang Xifeng, Zunyi Yuqing, Bijie Qianxi and Bijie Jinsha, and three provincial demonstration digital villages, namely Zunyi Huamao, Anshun Shimen and Liupanshui Caoyuan. Focusing on key towns and key scenarios, the Company carried out four major revitalisation actions, namely "Digital Towns", "Hundred Towns and Thousand Villages", "Joint Construction" and "Supporting Spring Cultivation", to drive marketing activities in villages and upgrade rural development models in innovative ways.



Chairman Liu Liehong visiting the Digital Village Platform in Liuchang Township, Qingzhen City



Contract signing of Digital Rural Workstation



Xifeng County Shida Town Qianfeng Village Project



China Unicom Gansu Qingyang Branch cooperated with Zhajiahe Township to build the first digital township platform in the city, so that the public can inquire policy information and handle various businesses online without leaving home.

Deepening livelihood applications

China Unicom is committed to deepening livelihood applications and innovating on high-quality daily life services. It enriched innovative applications such as “smart culture and tourism, smart education, and smart medical care”, promoted inclusive services for people’s livelihood, and developed products such as 5G Messages, promoting the upgrade of new information consumption.

Smart culture and tourism

Leveraging its Big Data, blockchain and AI technology capabilities and focusing on key areas such as industry supervision, scenic spot services and smart culture and museums, China Unicom created 11 solutions such as all-for-one tourism, smart scenic spot and smart culture and museums, serving more than 170 cultural and tourism management institutions at all levels, more than 200 scenic spots and more than 50 cultural and museums venues across the country, facilitating the digital transformation and upgrade of cultural tourism management, cultural tourism services and cultural tourism marketing.



General overview

Based on the local circumstances, China Unicom Hunan Branch innovatively built the command centre platform of the Hunan Provincial Department of Culture and Tourism, which helped the digital upgrade of cultural tourism in the province, and further demonstrated the cultural and tourism industry environment with Hunan characteristics and its innovative development model. It strengthened the industry regulatory means, and provided smart empowerment for the recovery of the cultural tourism market after the pandemic.

Smart education

Focusing on key areas such as general education, high-vocational education and regional education management, China Unicom has built 22 industry solutions such as China Unicom’s 5G future campus and China Unicom’s primary and secondary schools smart campus, and implemented 3 benchmark project cases such as the “Informatisation Project of the School of Experimental Sciences of The Open University of China”, serving 150+ education industry customers nationwide.

China Unicom iCloud Wisdom Technology Co., Ltd. has developed a virtual experimental teaching service system that integrates cutting-edge technologies such as AI, 3D and VR, and integrates modern information technology into the teaching and learning of theoretical knowledge of physics, chemistry, biology and science, as well as experimental operation and examination.

Smart medical care

China Unicom focused on key areas such as smart hospitals, smart health care and smart medical insurance, and developed six medical industry solutions, including China Unicom Smart Hospital, China Unicom 5G Smart Ward and China Unicom 5G Smart First Aid. The Company implemented benchmark projects such as 5G primary smart medical care in Hainan and 5G smart first aid in Ruijin Hospital, serving 100+ medical industry customers across the country. It continuously empowered the medical system reform and promoted the construction of a healthy China.

China Unicom Hainan Branch promoted the construction of a 5G + AI primary medical information platform covering all over 3,000 primary medical and health institutions in the province, innovatively creating a new model of 5G primary medical care in Hainan, comprehensively improving the diagnosis and treatment capabilities of primary medical and health institutions in the province. In 2021, 5G primary medical care services were provided to more than 250,000 people.

5G messaging

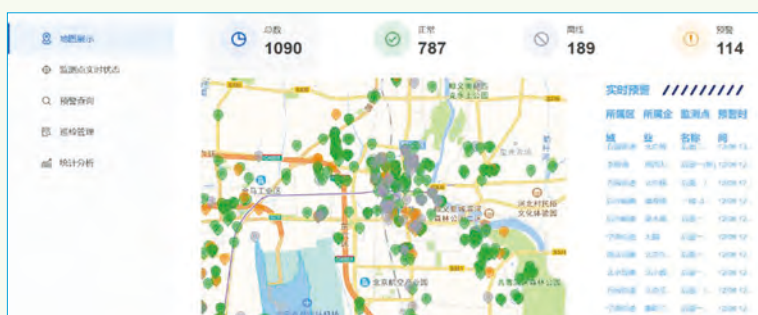
China Unicom completed the pre-commercial trial of 5G messaging and developed China Unicom Winter Olympics 5G messaging application. Currently, the number of 5G messaging users has exceeded 100,000. 5G messaging was put into pre-commercial trial across the country, with a total of 53 customers and 109 CSPs. The Company successfully held the “the Future of Smart Messaging” 5G messaging forum and established the 5G messaging ecosystem alliance.

Strengthening applications in government affairs

China Unicom is committed to strengthening applications in government affairs and deepening high-efficiency governance services. It deeply participated in the development of digital government, smart city, smart ecology, etc., and built innovative application products such as “one-network-office, one-network-management” to help the modernisation of national governance capabilities and governance systems.

Digital government

China Unicom focused on key businesses such as emergency response, public security, Internet + government services, and developed six industry solutions including emergency management, safe production, smart fire protection, city security, smart public security and one-network-office, serving more than 200 government customers such as the Ministry of Emergency Management and the Ministry of Public Security.



China Unicom Beijing Branch Smart Pollutant Monitoring Cloud Platform

Based on the digital needs of local regulatory authorities, China Unicom Beijing Branch created a “Four-Transformation” smart pollutant monitoring platform in Shunyi, Beijing as an example, and a number of smart ecological environment monitoring benchmark projects across the country, which were highly recognised by local government authorities.

Smart city

China Unicom built a new smart city capability system called “City Smart Brain CityNEXT”, launched 10 solutions including China Unicom’s new smart city comprehensive solutions, smart park solutions and city brain solutions, and implemented more than 660 smart city projects in 31 provinces across the country.

By integrating technologies and resources, China Unicom Shenzhen Branch launched online intelligent response to simple and common enquiries to improve the service capability of customer hotline. Through Big Data, it accurately analysed government information and public opinion to improve the timeliness and effectiveness of the government in handling emergencies and comprehensively enhance the service capability of the Shenzhen government service hotline platform, contributing to the development of Shenzhen into a smart city.

Smart ecosystem

China Unicom focused on areas such as comprehensive supervision of ecological environment and Big Data of ecological environment and developed solutions such as “China Unicom Ecological Environment Big Data Platform” and “Classification of Domestic Waste of Urban Residents”. It also implemented comprehensive management systems for ecological environment monitoring and “one-network-management” projects for ecological environment in Xiong’an, Shandong, Zhejiang, Shanghai and other provinces and cities to achieve cross-departmental, cross-level and cross-regional ecological environment data sharing within the provinces and facilitate digital, convenient and accurate management.

Providing Warm and Intelligent Services

“Customer trust” is the foundation for the survival and development of an enterprise. China Unicom is committed to continuously improving the quality of products and services to meet customer needs, creating a high-value smart brand, caring for special groups, and obtaining high trust from customers.

Creating excellent customer service

China Unicom always adheres to the business philosophy of “creating value for customers”, promotes high-quality service projects, promotes the closed-loop mechanism for problem solving, continuously enriches the service brand connotation, deepens customer service, improves service quality, and creates a better, more efficient and more convenient service experience for customers with diversified services.



Improving customer experience and perception

Guided by customer perception, China Unicom launched special service enhancement projects to actively solve customer complaints.

- The Company comprehensively sorted out customer complaint data from four major channels and established a full-scale problem solving system based on “two networks and two businesses”. It strengthened the pre-authorisation and closed-loop operation of all problems, smoothed complaint channels, increased service authorisation and remediation scenarios, and launched customer satisfaction re-visits to continuously improve customer perception.
- The Company innovatively built the China Unicom Complaint Platform, and launched an Internet complaint platform website, WeChat mini program and a complaint portal at the China Unicom APP in 31 provinces across the country to create an excellent customer experience with extensive touch points, transparent process, convenience and efficiency, improving customer service perception.
- The Company carried out the “Special Action for Improving Customer Satisfaction”. Focusing on 23 issues affecting customer experience in ten categories, it continued to implement the service action, and effectively solved the “pain point” problems of the public.
- The Company strengthened the service KPIs and carried out three-dimensional matrix management on the subjects of complaints penetrating “vertically to provincial branches, horizontally to professional departments, and specially to subsidiaries”. It promoted problem solving through monthly analysis and notification, customer re-visits and supervision, so as to achieve the goal of “solving one type of problem by handling one complaint”.
- The Company ensured the stable operation of mobile number portability service. Relying on the advantages of its nationally centralised system, the Company focused on launching services such as “online and cross-region port-in services” and “cross-region refund of tariff balance for port-out users”. It firmly adhered to the red line and bottom line of the policy of mobile number portability, and carried out special rectification on service issues such as “obstructing mobile number portability and restricting mobile number portability with unknowing unbundling” to create a warm and caring service experience.



Innovating on digital life experience

China Unicom provides users with a more intelligent living experience through product innovation. In 2021, the total number of mobile subscribers reached 317 million, the number of 5G subscribers reached 155 million, and the number of fixed-line broadband subscribers reached 95,046,000.

- The Company built an open and shared China Unicom smart home ecosystem. It independently developed culink, a standardised ecological connectivity protocol, and created six integrated systems including gigabit, secondary card, fixed voice, application, video and finance through the digital operation platform to provide users with a smarter, more intelligent and happier new family life experience.
- The Company built a platform-based innovative product system. To create an ultimate experience for 5G users and meet the needs of users for digital and intelligent life, the Company created innovative products such as video ringtones, Unicom assistant and China Unicom cloud disk to release product innovation energy. The number of registered users of video ringtones reached 200 million, and the number of registered users of Unicom assistant reached 181 million.



Building agile service operation

China Unicom leveraged its advantages in smart operation, strengthened centralised empowerment, continued to improve its service operation capabilities, and achieved online and offline integration and service marketing integration.

- Deepening seamless online and offline services to solve customer problems in one stop. For seamless services, the Company strengthened omni-channel service coordination by linking up hotline and offline service points, effectively improving customer perception. For seamless marketing, through insights into customer demands and the strategy of precise service matching, the Company realised all-round and seamless intelligent services.
- Leveraging the advantages of smart operation, the Company improved the ability of one-stop solution to customer problems. The problem solving rate increased by 1.9PP to 88.9%, and the proportion of smart services increased by 56.8PP to 84.03%.



Smoother customer service channels

The Company expanded service channels such as the 10010 hotline and China Unicom APP, extended service coverage and improved service quality and efficiency.

- The 10010 hotline service channel adopted centralised operation to achieve centralised cross-region dispatch and re-use of idle capacity, and the success rate of connecting to human customer service within 15 seconds increased to 92.5%. The Company built an agile and intelligent call centre. Customers can dial directly throughout the country, and they will be matched precisely with suitable services according to their needs. The hotline can make intelligent prediction and offer intelligent response. It knows customers' deeds, understands customers' needs and can solve customers' issues. In 2021, the customer service hotline service volume reached 1,380 million times, and the satisfaction rate of 10010 increased by 2.3PP to 97.5%.
- China Unicom's APP takes leading experience as its goal and has become a preferred one-stop service channel for users with accurate lookup, quick delivery, smooth operation and full service. As of 2021, China Unicom APP served 62.98 million users, representing an increase of over 80%. Self-service accounted for 80.5%. Service satisfaction rate was 9.1 points, improving by over 25%.



In April 2021, China Unicom's Mobile Business Outlet APP was officially renamed as “China Unicom APP”, which was fully upgraded in terms of service, life, entertainment and wealth. It is committed to providing customers with a warmer and smart experience and creating a more convenient and personalised good life.



Scan the code to initiate video connection

"WO Online" customer portal adopts lightweight H5 design. Users do not need to download any App. A video connection request can be initiated by scanning a code or clicking a link. In the process of service sign-up, the customer service representative will push the fill-free form with key content highlighted to the user's mobile phone for confirmation, fully protecting the user's right to know, eliminating induced consumption and billing disputes, and letting users easily and knowingly sign up services.



Establishing experience monitoring system

Adhering to the "people-oriented" principle, the Company established an end-to-end customer experience monitoring system covering all customers, businesses and life cycles.

- We built an end-to-end perception monitoring system to collect and analyse data in real time, and promote the solution of perception depression. Focusing on four major professional aspects and 301 key scenarios, the Company built a full-scenario map of customers, and promoted the fundamental solution of problems through "advance insight and prevention, in-process operation monitoring, and post-event evaluation management".
- Based on the concept of full network service, the Company reconstructed its service standard system, which covered four major professional aspects and aligned with customer-side experience evaluation for integrated operation. It employed digital means to conduct real-time monitoring for early warning and swiftly resolve problems, leading to all-round customer experience improvement in network, business and services.



Shaping internal culture and external reputation

China Unicom is committed to building the influence of high-quality services. Externally, based on the service perspective and focusing on hot topics, pain points and business priorities, it strengthened knowledge dissemination, conveyed its differentiated service advantages, and infused service reputation into people's minds. Internally, we drove the development and integration of service culture, promoted the profound reform of ideological awareness, code of conduct and process system, and instilled the service culture into our staff.

- The Company carried out a service culture season campaign titled "I do practical things for the public – 'all endeavors for three purposes' action again" to forge a new service culture.
- The Company launched a customer word-of-mouth campaign titled "Further upgrade of service experience" to integrate its internal and external publicity resources to build official publicity for China Unicom's promoting high-quality services.
- The Company launched six topics such as cross-region sharing and China Unicom APP service upgrade and "I do practical things for the public" during the year, with over 3.01 billion times of publicity exposure in total. Service reputation and awareness rate reached 50.14%. China Unicom's customer service accounts on Douyin and Bilibili ranked first among central state-owned enterprises in terms of scale and its Kuaishou account ranked first in the industry. The Company created a communication knowledge expert series named "instantly understanding China Unicom", publishing 560 knowledge videos and 168 live broadcasts with a total of 210 million views, thereby educating the public on communication knowledge and tips on usage in a clear and easy-to-understand manner and establishing good customer communication and interaction.



China Unicom Customer Service Operation Account Award

In 2021, the overall satisfaction rating of the Company by the Ministry of Industry and Information Technology showed an improvement trend throughout the year

MIIT Satisfaction rating

81.68 points

Among which, network satisfaction increased year-on-year

0.94 points

Year-on-year improvement in service quality

2.58 points

Continuous improvement of NPS

Annual self-improvement and enhancement of mobile network

16.8 points

Broadband upgrade

9.9 points

5G-specific satisfaction remained

Industry-leading

Building a first-class brand image

Under the macro landscape of digital economy, China Unicom has renewed and upgraded its brand strategy, optimised its brand positioning, built a brand strategy model and improved its brand management system. Under the guidance of the new strategy, it built a high-value smart brand and achieved brand leadership in the digital economy era.

Continuing to enhance brand reputation

Leveraging on the opportunities of 5G and the Winter Olympics, the Company fully coordinated with the internal media matrix to create a “warm” differentiated smart brand image with both internal and external refinement to enhance the overall brand value.

- The Company undertook the “5 + N” brand revamp and internalisation project. Through brand alliance platform, brand education and training, brand image engineering, brand ambassador selection and publicity activities, it continued to deepen its brand substance, enhanced employees’ awareness and sense of identity of the brand, and stimulated the initiative to fulfill the brand commitment.

- Taking advantage of current hot topics, the Company created a brand smart experience in multiple dimensions. Through Hearing King Card, smart cultural tourism, respecting and helping the elderly, industry exhibitions and partner conferences, we conveyed China Unicom’s clear attitude of creating value for customers, the society and the industry, and demonstrated China Unicom’s social responsibility of participating in the digital economy and promoting high-quality development.

- Seizing current hot topics such as the Tokyo Olympics, the Company co-organised online and offline interactive experience activities such as “Going to N Cities”, lighting up the “City Olympic Landmark”, “Life Like This”, “Family Network Testing for People Service” and “Fancy Sports Game Show” with leading media such as Douyin, Bilibili and Sina. Through scenario-based presentation, the Company highlighted product features.

- The Company, together with Beijing Satellite TV, Youth League Central Committee, Xinhuanet, Beijing Satellite TV and other senior units, central media and industry vertical media, jointly produced contents such as “Meeting Winter Dreams” and “Hardcore Young Ice and Snow Season”. It cooperated with benchmark enterprises and experts in the form of “small incidents, big stories” to highlight the advantages of China Unicom’s products and services through differentiation, strengthen the capabilities of China Unicom’s industry solutions, and enhance the brand favourability.



China Unicom and Xinhuanet jointly launched the “5G Pilot, Sailing for the Future” series of programs, which showed the real application experience of China Unicom’s 5G by users and the public and demonstrated the technical strength of China Unicom’s 5G technology. It explained key projects in detail through case studies to shape the smart image of China Unicom’s brand.



Taking advantage of the 517 World Telecommunications Day and the 520 Global Accessibility Day, the Company created a warm short film adapted from three real stories from a special perspective to tell the changes brought by China Unicom’s technologies and wisdom to the lives of special people. It embodied China Unicom’s sense of social responsibility, a technological sense full of profound humanitarian spirit, and the brand’s warmth with human touch.

The video creativity won four awards at the 2021 China International Advertising Festival, including the Gold Award for short video creative advertising in the category of audio-visual game media of the Interactive Creativity Award, the Gold Award for humanitarian care artistic advertising in the category of public welfare advertising, the Bronze Award for brand image public welfare advertising and the Bronze Award for artistic innovation marketing, and won the Nomination Award of the 14th Golden Investment Award for Commercial Creativity.



Standardising brand management

In line with the Company’s brand development strategy, the Company revised and improved the “China Unicom Brand and Advertising Management Measures” to make brand management scientific, standardised, efficient and transparent, enhance the brand concept of all employees of the Company and improve the brand management system.

SASAC brand building capability

Seventh among central state-owned enterprises, first in the industry

2021年中央企业品牌力测评结果：第七名，行业第一

Brand first-mention rate

No. 2 in the industry

2021年品牌第一提及率：第二名

Brand reputation

No. 2 in the industry

2021年品牌声誉：第二名

Strengthening Reform to Enhance Motivation

China Unicom has been consistently promoting reform and innovation, strengthening system integration, and effectively driving the integration and iterative deepening of various special reforms with the Company's strategy, so as to form a long-term reform mechanism and lead the Company's high-quality development.

Promoting three-year action of state-owned enterprise (SOE) reform

China Unicom thoroughly implemented the three-year action plan for SOE reform and organically combined the three-year action plan for SOE reform with comprehensive digital transformation and world-class management improvement actions. It identified 130 reform tasks in 10 aspects, and coordinated the whole Company to systematically implement them. As of the end of 2021, it completed 93% of the reform tasks.

Continuously improving modern corporate system

Boards of directors were established at 100% applicable subsidiaries, and 100% of them had a majority made up of external directors.

Deepening the market-oriented operation mechanism

China Unicom fully adopted tenure-based and contract-based appointment of middle management, and iteratively promoted the reform to stimulate the vitality of front-line responsibility units. Smart Home engineers were 100% included in sub-divided unit management to strengthen grid-based digital empowerment.

Promoting system optimisation and structural adjustment

Based on the reform of professional operating systems, the Company carried out in-depth reform and review of operating systems such as big marketing, network and technological innovation, and continued to optimise the reform plans. The Company successfully completed the clean-up of non-core businesses and inefficient assets and reduction of legal persons.

Deepening the market-oriented reform of subsidiaries

In 2021, China Unicom promoted the restructuring and integration of key businesses in the value chain, and established China Unicom Digital Technology Co., Ltd., which is a major strategic move to actively adapt to the changes in the new productivity of the "cross-domain integration" of the digital economy and reconstruct the new production relationship of "integrated innovation". At the same time, China Unicom Asset Operation Company was established to strengthen the unified planning and operation of real estate and land resources.

On 7 February 2021, the establishment ceremony of China Unicom Digital Technology Co., Ltd. was held in Beijing. At the commencement of "14th Five-Year Plan", the Company vigorously integrated the capabilities of "cloud computing, Big Data, IoT, AI, blockchain and security" and established China Unicom Digital Technology Company. This is not only a move to actively adapt to the changes in the new productivity of the "cross-domain integration" of the digital economy and reconstruct the new production relationship of "integrated innovation", but also a supply-side structural reform driven by the new changes in the demand side of the digital economy. It is a major strategic move of China Unicom to create unique innovative competitive advantages and achieve differentiated breakthrough in innovative racetracks.

With the management model of "integration of transformation and reform", i.e. creating unique digital productivity through comprehensive digital transformation, and building a unique new production relationship through pilot mixed ownership reform of central SOEs, China Unicom was successfully selected as one of the ten benchmark management models of SASAC, serving as a role model of SOE management, empowering the core competitiveness of enterprises, and creating a new model for the transformation and upgrade of SOEs in the new era.

Deepening three-systems reform

Deepening the reform of labour, personnel and distribution system is a key element to enhance the vitality and efficiency of an enterprise. China Unicom continued to deepen the reform of the three systems and fully activated the core elements of human resources. With more flexible promotion and demotion of management personnel, employment and dismissal of employees, and adjustment of income, the vitality and competitiveness of the Company was enhanced.

- The Company focused on comprehensive guidance and formulated the Guiding Opinions of China Unicom on Deepening the Three Systems Reform to clarify the reform tasks and the reform requirements.
- The Company focused on structural optimization. The network department continued to strengthen the construction of the intelligent network engineering team that supports independent operation and fulfilment. The consumer market department promoted the migration of personnel to key positions such as online operation team and middle office production and operation. The government and enterprise department promoted key customer marketing, product management, solutions, and technology R&D team development.
- The Company focused on evaluation and feedback, and established three-systems reform evaluation system. It focused on reform performance indicators, placing emphasis on systemic indicators in regard to the three aspects of "promotion and demotion, employment and dismissal, and increase and reduction". It evaluated the reform results in a closed-loop manner, and strengthened the application of evaluation results.

Strengthening internal process governance

Focusing on value creation, adhering to the principles of “customer first”, “business first” and “front-line first”, the Company transformed the low-efficiency and high-cost traditional processes centred on management and control into a customer-centric digital process with high efficiency and low cost. It built a process-oriented organisation to promote the transformation to a digital, intelligent and ecological platform-based enterprise.

- Focusing on the process framework, the Company established a process management system and a process construction and operation system. Based on the process management platform, the full process view could be visualised, managed and controlled.
- The system operation steps were simplified. Taking as an example the scenario of switching from 4G integration to 5G integration, the number of system clicks were reduced from 88 steps to 68 steps, and the processing time was shortened from 15 minutes to within 10 minutes, creating a streamlined and efficient process.
- The Company compressed process workflows. It reduced the number of steps in the project initiation of government and enterprise dual-line business. The fulfilment time (with resources) was shortened from as long as 15 days to 3/5/7 days, and the average time of fulfilment was reduced by 50%, improving the efficiency of service fulfilment.
- The Company established centralised operation services and promoted the provincial-level centralisation of accounting and invoicing for government and enterprise business, reducing the number of supporting staff by 10%, the time lapse of revenue booking by 20% and invoice printing cycle by 50%. The average efficiency improved by over 30% and labour costs were reduced by 45%.

Exploring operation in the mode of mixed-ownership reform

Deepening the reform of Yunnan branch. In order to ensure the sustainable and healthy development of China Unicom Yunnan Branch, China Unicom studied and issued the Notice on Further Deepening the Comprehensive Reform of “Double-hundred Action” of China Unicom Yunnan Branch. China Unicom increased its shareholding from 5% to 40% to become the single largest shareholder, ensuring the control of state-owned capital in the reform. It completed the integration of two entities to achieve unified operation.

Promoting the reform of Guangxi branch. China Unicom Guangxi Branch implemented social capital cooperation and operational reform in 7 cities and entered the first cooperation period in 2021. The 7 local operating companies have established a market-oriented operation system and a financial control system with profit and cash flow as the focus. The companies in the autonomous region implement integrated operation and management for reform and non-reform areas.

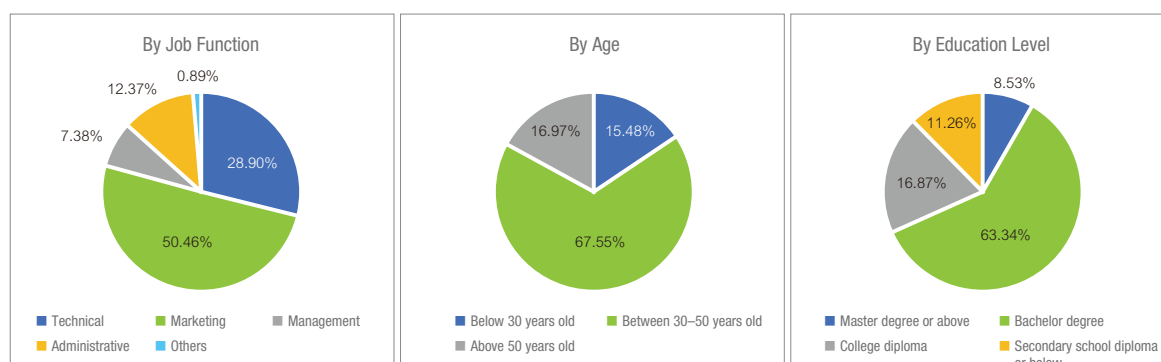
Smart Connection Technology actively preparing for IPO. Smart Connection Technology Company improved its corporate governance system, completed the reform of its joint-stock system, completed the market-oriented selection and appointment of the management team, and formed a new management team comprising the general manager, deputy general manager and CFO. Since the reform, the valuation of the Company increased from RMB100 million at the time of establishment to RMB1,039 million before investment and RMB1,500 million after investment, effectively realising the preservation and appreciation of state-owned assets. Through the organic integration with automobile manufacturers and other strategic investors in the industry ecology, it achieved rapid improvement in value creation capabilities, maintained a market share of over 70% in the factory-installed market, and consolidated its leading market position.

Creating a Pool of Innovative Talents

China Unicom adhered to the strategy of talent-led development, deepened the reform of the talent development system and mechanism, deeply implemented talent-oriented corporate development and created the comparative advantages and competitive advantages of talents. It comprehensively cultivated, introduced and used talents to promote the fundamental change of talent structure. At the same time, the Company effectively safeguarded the legitimate rights and interests of its employees, gave full play to their enthusiasm and creativity, and let them share the achievements of reform and development and grow together with the Company.

Optimising talent structure

China Unicom adhered to strengthening the enterprise with talents, improved the talent management system and mechanism, and optimised and adjusted the talent structure in response to strategic requirements. The Company focused on identifying outstanding young management talents at the front-line acting in major events, and continuously improved the whole chain mechanism of education, selection, management and use of talents. The age structure of the middle management team continued to improve. The Company has built a four-level professional talent pool of 19,000, including 950 leading and expert talents, 6,100 backbone talents and 12,200 new talents. The “Digital Elite” program was implemented to achieve full coverage of digital training certification for four-level professional talents.



Total number of employees		Employees in Mainland China	Employees in Hong Kong, Macau and Taiwan	Employees overseas
243,381		242,497	598	286
New recruits	Gender proportion (Male/Female)	Proportion of ethnic minority employees (%)	Number of resigned employees	Temporary labour hired on market-oriented basis in Mainland China
13,038	1.62:1	6.8	4,009	12,606

Four-level talent pool

19,000

Turnover rate of four-level talents

12.8%

Number of industry experts in the field of technological innovation introduced

more than 40

Protecting employees' rights

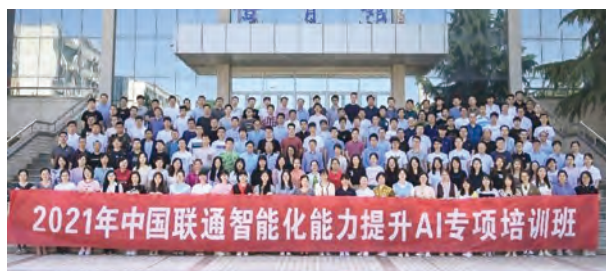
China Unicom insisted on regarding employees as its foundation. It promoted the spirit of endeavours and innovation and respected labour, knowledge, talents and creativity. It safeguarded the legitimate rights and interests of employees and served its staff with full efforts. It promoted the “win-win” situation where employees and the Company grew together through the market-oriented reform of human resources, and continuously improved the sense of happiness and achievement of employees.

Adhering to fair employment

- Strictly abiding by the Labour Law, the Labour Contract Law and other relevant laws and regulations, the Company signed labour contracts with 100% of employees, and implemented dismissal policies in accordance with relevant national requirements.
- The Group has formulated the “Human Resources Risk Prevention and Control Manual”, adopted strict inspection and control procedures in recruitment and promotion and strictly prohibited any discrimination against employees in terms of age and gender. It complied with the “Provisions on the Prohibition of Using Child Labour”, strictly prohibited the use of child labour, and provided training to main contractors providing manpower or services. In 2021, there were no incidents of discrimination, child labour and employee abuse.
- The Company implemented the national policy of “stabilising employment and expanding employment” and expanded the scope of recruitment to graduates in the past two years who were unemployed. It actively promoted employment assistance, provided 396 targeted recruitment positions in Xinjiang, Tibet and Qinghai, and recruited a total of 39 Tibetan graduates.

Protecting democratic rights

- The Company implemented the national regulations on working hours management, strictly implemented the special working hours declaration system, and protected the rights of employees to rest and leave. There was no forced labour.
- The Company implemented paid leave system and retained 100% of job opportunities after maternity leave. It actively supported and implemented childcare leave and single child care leave. It implemented the paid companion leave system for employees whose children were enrolled in the high school and college examination, and provided guidance services for 3,700 employees' children to fill in their choices for colleges.
- Workforce development was reported to the employee representative congress and the formulation and implementation of human resources policies was disclosed, providing smooth information communication channels.



China Unicom AI Special Training Course



China Unicom “Digital Elite” four-level professional talent training

Innovating on talent incentives

- The Company optimised the total salary management measures and continuously released the bonus of mixed-ownership reform. The Company improved the labour cost allocation rules of provincial branches and subsidiaries, optimised the incremental income sharing mechanism, and realised the coordinated growth of labour cost and benefit. Labour cost increased by 7.6% year-on-year. The average adjustment ratio of labour cost of each unit reached 10% in order to break the rigidity of the existing system.
- The Company improved the framework of long-term incentive system and optimised the flexible welfare system to meet the diversified needs of employees.
- The Company regularly carried out employee rank and salary promotion, with a rank promotion rate of 14.3% and a salary promotion rate of 38.4% in 2021.

Helping employees grow

China Unicom adhered to the people-oriented principle, cherished the value of each employee and attached great importance to the capacity building and career development of employees. It continuously promoted the construction of education and training system with emphasis on improving the digital capabilities of all employees, so as to facilitate the career development of each employee and promote the communication with and growth of employees.

Reconstructing training system

The Company continued to improve the training management system and mechanism and deepen the reconstruction of the education and training system. It increased the training organisation support and training resource allocation, and promoted the implementation of the education and training system in all units.

- We established training programs for key groups and set up a professional competence standard system. Focusing on the training objectives, development paths and capability requirements of different groups, we built digital capability standards and curriculum systems to enable digital empowerment.
- We promoted the construction of certification systems for various professional departments and promoted capacity transformation through position certification. We completed the update and iteration of capacity standards for 63 professional aspects, and professional talents passed the certification 93,056 person-times.
- Focusing on digital empowerment, network intelligent operation, network information security, intelligent network independent fulfilment, technological innovation and other aspects, the Company carried out the development of technical professional courses, and developed a total of 223 courses and 360 teaching hours during the year.
- Making full use of the resources of various online education platforms, the Company held a series of training sessions such as “China Unicom Lecture Hall”, “Smart Talks” and “WO Sharing”, with a total of 1,260,000 person-times of participation. It held 33 live broadcast training sessions with 53,000 viewers. It set up a special zone for online college, with over 9,970,000 people studying online.
- We carried out IT/DT technology capacity training for all employees, with 19,000 people trained online. The Company implemented the digital piloting and digital elite projects to achieve full coverage of second-level managers, third-level managers and fourth-level professionals. We carried out the “apprenticeship” for four-level talents to enhance the digital capabilities of other professionals.

Training participants	Training Content
Company-wide managers and employees	The Company carried out 11,402 sessions of learning and education on Thought on Socialism with Chinese Characteristics in the new era, with more than 897,000 participants.
Management	The Company continued to carry out professional ability improvement training. 340 people participated in the rotation training class for headquarters personnel, and 47 general managers of local branches participated in the transformation training demonstration class. 26 management personnel were selected to participate in the training of the Organisation Department of the Central Committee of the CPC.
Outstanding young cadres	The Company held the “Young and Middle-aged Cadre Training Class” and “Young Management Talent Demonstration Class”, and 122 outstanding young management talents participated in theoretical learning and ability training.
Professional talents	Focusing on key tasks, the Company carried out regular and multi-level transformation and empowerment training for four-level talents and professional staff, organised demonstration classes at the headquarters to empower all professional teams persistently. The Company carried out more than 84,000 professional skill training sessions for employees of various professional ranks, with a total of more than 5,160,000 participants.
Front-line employees	For front-line sales, call centres and installation and maintenance employees, we built digital capability standards and curriculum systems, and conducted more than 58,000 training and certification sessions throughout the year, with over 2,290,000 participants.

RMB **340.99** million
was invested in employee training

5,390,000
people-times participated in
the training

Average training time

94 hours



At the opening ceremony of the training class for young and middle-aged cadres and the demonstration class for young management talents, Liu Liehong, chairman of the Company, attended and personally presented flags for the two classes.

Training rate of
senior management

100%

Average training time

203 hours

Training rate of
middle management

100%

Average training time

104 hours

Training rate of
general employees

99%

Average training
time

94 hours

Training rate of male
employees

98.87%

Training rate of female
employees

98.87%

Average training time of
male employees

94.31 hours

Average training time of
female employees

94.31 hours

Building a training platform

China Unicom is committed to building a team of talents for digital transformation. It actively carried out various skill competitions such as 5G innovative applications, Big Data innovation, solutions, and smart Winter Olympics. It drew cases from real production scenarios, real customers, and real cases to substitute training, spur learning and achieve empowerment through competitions, and continuously improved the technical capabilities of employees.

- The Company carried out 502 labour and skills competitions in 2021, covering subdivided marketing, customer operation, financial rights, network AI, network support for the Winter Olympics, network security. We selected 233 “China Unicom Technical Experts” and the number of competitions, number of participants and participation rate reached record high.

- The Company jointly held a competition on the practical digital operation skills for government and enterprises with the China National Defense Posts and Telecommunications Union and co-organised a network co-build co-share labour competition with China Telecom.



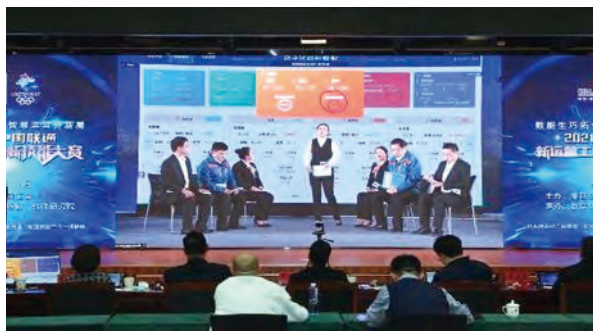
China Unicom Innovative Product Labour Competition

16

first- and second-class labour and skill competitions at the Group level were held in 2021

30

third-class skill competitions at the Group level were held



China Unicom New Operation Project Innovative Skills Competition

Improving democratic management

China Unicom has established a robust democratic management system based on the labour union, coordinated and promoted the three-in-one democratic corporate management comprising “labour union, open corporate affairs, and employees’ advice and suggestions”. It guaranteed the right to know, participate, express, and supervise of employees at all levels, and encouraged employees to contribute their wisdom to the development of the Company.

- Throughout the year, the Company held about 500 labour union meetings at all levels. Over 1,700 items of various matters were discussed at the provincial company level, over 10,000 items were discussed at subsidiaries and municipal companies, and there were over 3,000 items of various proposals.

- The Company set up channels for collecting opinions such as “all endeavors for three purposes” “discussion, the whole committee online, employee satisfaction survey and front-line survey, etc. It held special employee participation activities such as process governance, authorisation and delegation, China Unicom APP user experience, and work style improvement. In 2021, the Company received a total of 13,400 employee requests, with a resolution rate of 97.61%.

- The Company carried out the service culture season activity of “I do practical things for the public” to collect experience and feelings of touchpoint service, product business, network experience and other aspects. A total of 26,668 questions and suggestions were collected.

- The Company kept smooth channels for reasonable suggestions, and ensured that all employees’ demands and feedback were responded to through various reasonable suggestions activities such as “General Manager Online”. Throughout the year, the Company carried out more than 150 “General Manager Online” meetings, conducted two rounds of selection of outstanding proposals by employee representatives, and collected 85 proposals.



Listening to the voice of our employees and collecting feedback from the front-line. China Unicom organised “General Manager Online” events for employees at all levels to actively contribute to the development of the Company.

Caring for employees' life

Adhering to the concept of serving employees, China Unicom fully understood the thoughts of employees at the front-line, continuously innovated on various measures to serve employees, helped employees balance work and life, created an efficient, relaxed and caring working atmosphere for employees, and enhanced employees' sense of belonging, security and mission to the Company.

Strengthening pandemic prevention and control

As the pandemic prevention and control has become a new normal, the labour unions at all levels continued to carry out pandemic prevention and control, and continuously optimised and implemented employee care measures on the premise of implementing pandemic prevention and control measures, so as to better serve enterprises and employees in special periods.

- The Company established a pandemic prevention mechanism, required the labour unions at all levels to strengthen their awareness of pandemic prevention, organised pandemic prevention activities according to local conditions, reasonably reserved pandemic prevention materials, formulated emergency response measures, and coordinated the promotion of pandemic prevention and control and the Company's business development.

- During the COVID-19 pandemic, the Company arranged employees to stay put during the Spring Festival and visited the families of overseas employees. The Company provided various forms of care for employees who stayed put during the Spring Festival, and relieved the worries of employees who were unable to return home during the severe pandemic overseas. The labour union organised care visits for overseas employees and their families, and distributed care gifts and money to the families of overseas employees.

Ensuring production safety

The Company strictly abides by the Production Safety Law of the People's Republic of China and other relevant laws and regulations. It further implemented production safety responsibilities, improved basic systems such as the Measures for the Supervision and Administration of Production Safety and the Fire Safety Management Regulations, improved the safety supervision mechanism, strengthened personnel protection, and fully implemented production safety.

- The Company improved the production safety quality of all employees, organised theme activities such as Production Safety Month, Fire Safety Day and Production Safety Law Publicity Week, carried out fire practice and theoretical training, and organised fire and emergency evacuation drills and accident handling drills.

- In 2021, there were no general or above production safety accidents in the whole system. The Company achieved zero fire in the whole system and zero fatality rate per thousand people. There were no lost days due to work-related injuries, and the safety sense of employees has been significantly improved.

- We promoted the construction of employee health management system, and provided employees with health examination, health lectures, critical illness insurance and other services.

- We protected the mental health of employees, extensively carried out a series of activities such as "mental health of employees" and "public sports for front-line", innovatively promoted the construction of "psychological station" on a pilot basis, and actively provided psychological care during special periods such as the pandemic in Hebei and overseas as well as the flood in Henan. In 2021, the Company was awarded the honor of "Healthy Enterprise" by People's Health Network.

119

training sessions held on
production safety

100%

coverage on production
safety training



In order to conscientiously implement the Three-year Action Plan for Special Rectification of Production Safety of China Unicom, popularise fire safety knowledge of the headquarters personnel, improve fire safety awareness, and enhance safety knowledge and necessary skills, the administrative service centre of the headquarters invited Tian Siyu Police Officer of the Fire Rescue Branch of Financial Street, Xicheng District to conduct fire safety knowledge training in the office.

Caring for female employees

By signing a special collective contract for female employees, improving the construction of "breastfeeding room" and holding a series of special activities on "March 8 Festival", we protected the rights and interests of female employees and provided targeted and considerate services to them. In 2021, China Unicom selected 120 "Heroines' Civilised Positions" and 125 "Heroines' Meritorious Models" to stimulate the entrepreneurial vitality of female employees.

Enriching cultural and sports activities

China Unicom earnestly implemented the national strategy of "Healthy China" and "National Fitness", organised various cultural and sports activities, participated in various competitions organised by the National Defense Posts and Telecommunications System, Communications Sports Association of China, etc.. In 2021, trade unions at all levels organised nearly 6,000 cultural and sports activities with 600,000 participants. China Unicom Shandong Branch was honored as an advanced unit of national mass sports by the State General Administration of Sports. Hu Mingrui of China Unicom Guangdong Branch and Qu Fengxia of China Unicom Hebei Branch were honored as advanced individuals of national mass sports.



Flowers and handicraft themed activities for female employees on International Women's Day



China Unicom carried out a series of sports activities such as badminton competition and balloon volleyball competition for employees under the theme of “Celebrating the Winter Olympics and Writing a New Chapter”. Chairman Liu Liehong came to watch the competition and encouraged employees to actively participate in various cultural and sports activities of the Company.



2021 China Unicom Employee Table Tennis Competition

Deepening assistance and care

We are dedicated to solving difficulties for employees, and have established an assistance mechanism, including files of employees in difficulties, insurance cover for major diseases, and mutual assistance funds for employees. We have built a “Trinity” assistance system of critical illness insurance, mutual assistance fund and supplementary medical care. In 2021, more than RMB70 million assistance funds were distributed to employees in difficulties, 2,273 claims were made for critical illness insurance, and mutual aid funds were provided 3,700 times. After the severe flood disaster in Henan, the labour union of the headquarters immediately went to the site to visit the front-line rescue personnel and raised RMB 1,000,000 to support the post-disaster reconstruction.

We set up special funds for “five small” construction, raised RMB6,685,000 in 2021, improved the working and living environment for 100 front-line units in red old areas, supported the post-disaster reconstruction of front-line units in Henan, Shanxi and Sichuan, and improved the working and living environment for cadres and employees working in remote areas due to poverty alleviation and stability maintenance work.

Hohhot Branch in Inner Mongolia organically combined home-building work with the construction of employee teams and employee culture. When the office building was relocated, it fully considered the needs of employees, built a “reading corner” full of books and energetic “fitness corner” for employees, and improved employees’ sense of happiness and gain through the construction of “employee home”, and enhanced employees’ sense of identity and belonging to the Company.



We carried out the activity of “I do practical things for the public”. For heroic models, families of a martyred soldiers, national model workers and other groups, we carried out the “sending a piece of care” activity. A total of 2,306 people were visited and RMB2,570,000 were provided as care money by labour unions at all levels.

RMB **70.22** million
spent on aiding employees
in need

RMB **42.10** million
spent as care money

Caring for employees’ children

In order to overcome the difficulties caused by the pandemic, the Company continued to carry out the “Employees’ Children Custody during Leave” and provide custody services for employees’ children in innovative form. Among them, the employees’ children custody class of China Unicom Fujian branch was rated as “National Custody Class with Love” by the All-China Federation of Trade Unions.