



Digitally Improved Governance Efficiency with Focus on Fundamentals

Persistence in compliant and lawful operations

Deepening corporate reform

Promoting green low-carbon development

DIGITALLY IMPROVED GOVERNANCE EFFICIENCY WITH FOCUS ON FUNDAMENTALS

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

Measures adopted in 2020

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

Actions to be taken in 2021

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

Persistence in compliant and lawful operations

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

Persevered in compliant operations

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

Lawful operations

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

Risk prevention and control

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

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

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

Training in legal compliance
4,580 times

Number of people trained in legal compliance
243,000

Focused on combating corruption and promoting integrity

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

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

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

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

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

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

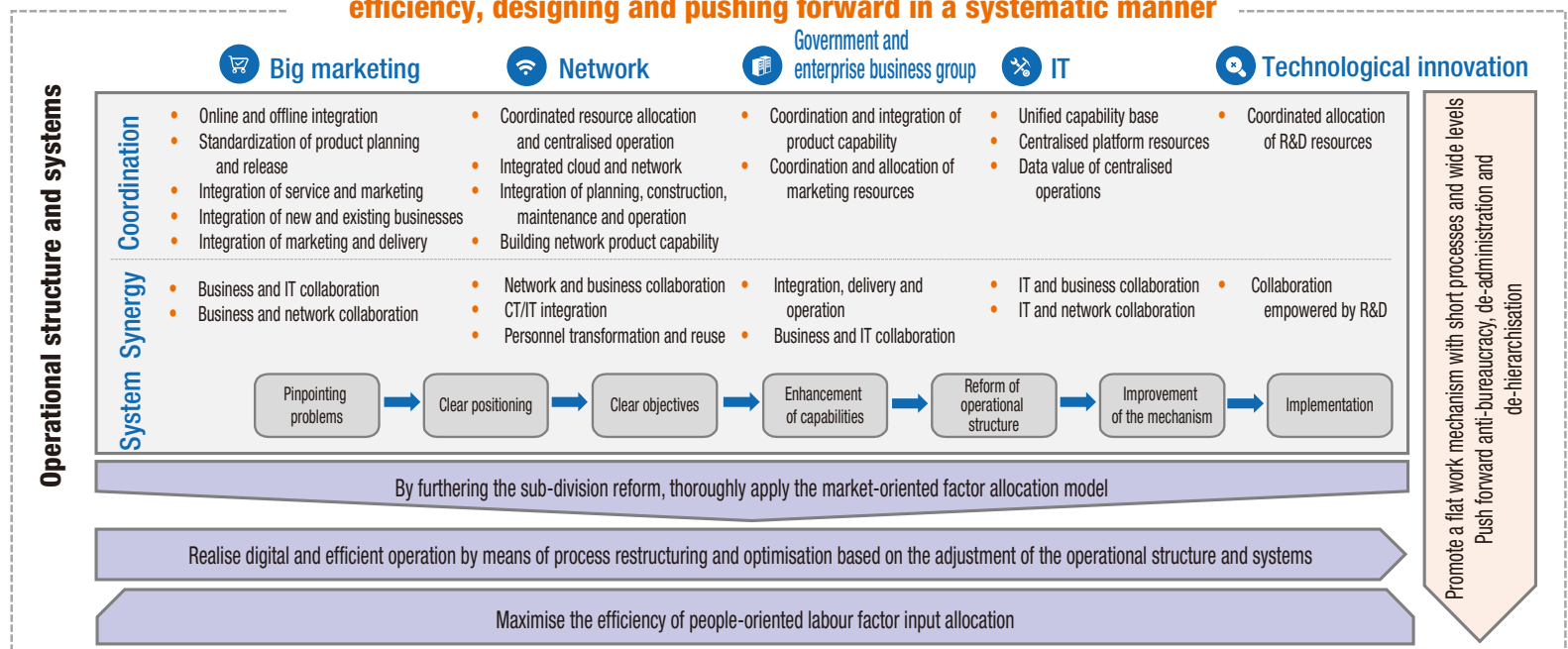
- The Company investigated into the misappropriation of general expenses of base station ancillary facilities as well as the leasing fees, electricity fees and agency maintenance fees in network maintenance since November 2015. It identified a total of 98 cases of suspected violations of disciplines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

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

Deepening corporate reform

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

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



Reform blueprint of China Unicom's comprehensive digital transformation

Promoted reform of operational systems

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

Strengthened process reconstruction and optimisation

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

Focused on three-system reform

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

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

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

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

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

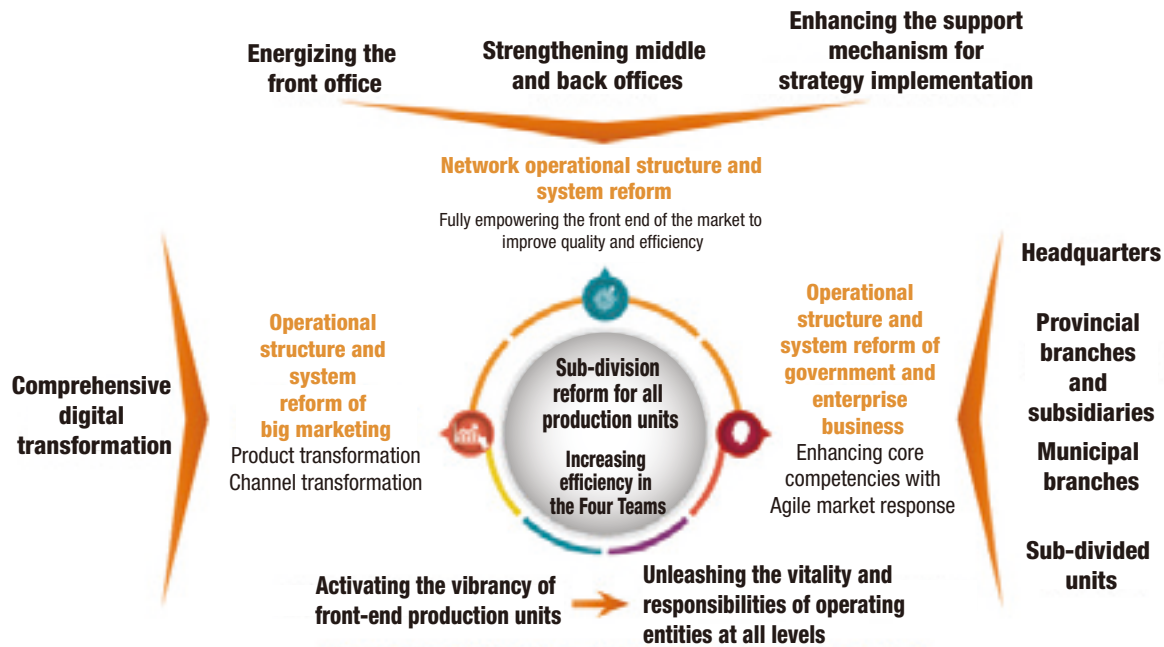
The Company promoted a director-based accountability system focused on management affairs. Directors changed from “judges” into “leaders”. Directors do not have corresponding internal institutions so as to break the barrier between departments. Direct reporting and coordination breaks the traditional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



China Unicom Directors Appointment Ceremony

Activated the vibrancy of sub-divided units

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



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

Deepened the reform of special projects

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

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

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

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

Promoting Green Low-carbon Development

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

Enhanced green management

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

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

Deployed green network

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

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

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

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

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

Energy-saving technology coverage rate of base stations

59%

Energy-saving technology coverage rate of core equipment rooms

87%

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

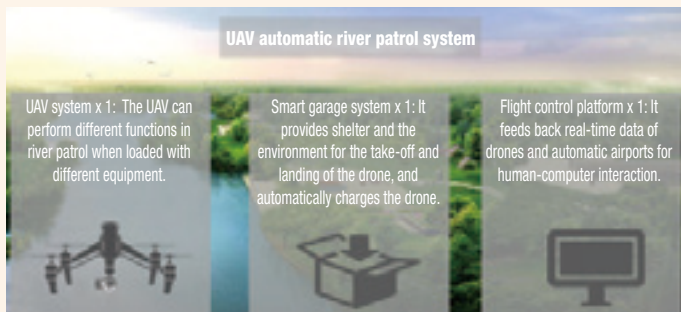
Employing Internet of Things and AI technology, the jointly developed 5G DC load intelligent shutdown equipment and self-developed software platform with proprietary intellectual property rights could intelligently shut down redundant equipment and reduce the energy consumption of main equipment. If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

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

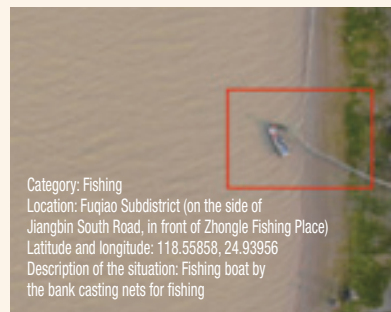
Promoted green applications

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

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



The composition of the UAV intelligent river patrol system



Service desk video surveillance

Deepened green operation

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

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

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

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

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

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

Disposed of waste materials worth

RMB733 million