



CHINA UNICOM (HONG KONG) LIMITED
HKEx : 0762 | NYSE : CHU



CORPORATE SOCIAL RESPONSIBILITY REPORT 2016

Connect the World to Innovate and Share a Good Smart Living

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INTRODUCTION

FOCUS DEVELOPMENT



Concerns of stakeholders

Uninterrupted, secure and quality network
Favorable, applicable and user-friendly product
Effective protection of client rights
Convenient and highly effective service channels

INNOVATIVE DEVELOPMENT



Concerns of stakeholders

Market-oriented innovation system
Rich and diversified innovation services
Focused technical innovation
In-depth reform promoting development

COOPERATIVE DEVELOPMENT



Concerns of stakeholders

Open and synergistic cooperative platform
Diversified and mutually-benefited partners
Prosperous and symbiotic industry ecology
Responsibility-sharing cooperation environment



GREEN DEVELOPMENT



Concerns of stakeholders

Energy-saving and environmental-friendly communication network

Low-carbon and low energy-consumption service operation

Green practices beautifying life

HARMONIOUS DEVELOPMENT



Concerns of stakeholders

Coordinated and equal access of widely available information

Share and grow with the employees

Sustainably return to the public

Harmonious and mutually-beneficial atmosphere in the community

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Note: Please refer to our 2016 Annual Report for the details of Corporate Governance Report.

FORWARD-LOOKING STATEMENTS

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





MESSAGE FROM CHAIRMAN

2016 is the first year of the “13th Five-Year Plan”. It is also the first year for China Unicom to comprehensively implement the Focus Strategy and innovative and cooperative development. China Unicom carefully followed five development concepts of “innovation, coordination, greenness, openness and sharing” and strives to push forward the supply-side structural reform such as “creating a 4G+ quality network, popularising all network access terminals, and innovating the Internet consumption service experience”. During the course of a new round of information supply and demand rebalancing process, China Unicom helped transform and upgrade the information consumption of billions of customers and made positive contribution in transforming the nation into a network superpower and in developing informatisation for the domestic economy and society.

Adhering to the initial aspiration and forging ahead. Being a member of the United Nations Global Compact and a state-owned enterprise under the central government, China Unicom strictly complies with the 10 principles of the Global Compact, conscientiously understands and assumes its important responsibilities, insists on incorporating social responsibilities into corporate governance, integrating social responsibilities into company strategy and implementing social responsibilities in production and operation. We carefully implement national strategic measures such as network superpower, broadband China and “Internet+” action plan, insist on “all for customers, all for front-line and all for market”, continuously improve the abilities of enterprise value creation and service support, and help achieve a harmonious development of the economy, society and environment via new information consumption services.

Improving quality based on craftsmanship. In 2016, we kept improving our network construction, and deployed 4G network upgrades in 341 cities and also achieved all fibre networks in 139 cities to enable our customers to enjoy quality network experience with “faster speed, more extensive coverage and better experience”. We intensively carried out specialised actions for the prevention of and fighting against communication information fraud, adopted multiple technical and management measures to prevent and deal with junk SMS, nuisance calls and fraudulent information, and strengthened the management of wholesale phone numbers to effectively protect the security of the information and property of our customers. By continuously enhancing our service experience, we achieved a continuous improvement of customer satisfaction and strived to offer more pleasant user experience, more relieved consumption and more dedicated services. We focused on improving our global service capability and securing a leading position in terms of the total bandwidth of the international marine and land cables in Asia Pacific. In 2016, we strengthened our interconnection with countries along the “Belt and Road Initiative”, developed new relationship with 22 operator clients and achieved full coverage of operator services in ten ASEAN countries. We have practically fulfilled the underlying mission delegated under the “Belt and Road Initiative” of China.

Insisting on transformation and upgrade driven by innovation. We strived to seek breakthrough in stretching the boundaries of the new Internet economy, seized new opportunities for integrated innovation brought by “Internet+”, provided a basket of information-based application services in fields of Internet of Things, cloud computing and big data, etc. We also focused on eight key industries such as education, transportation and logistics, and formed our own product system to create more possibilities for living smart life. We wholeheartedly and prudently promoted the reform and innovation of our mechanisms and systems, and conscientiously followed the requirements in preparation for the state-owned enterprise reform. We improved operating efficiency and activated corporate vibrancy by motivating junior staff, streamlining administration and delegating power and building a strategic talent pool. In addition, we took the lead to become the pioneer of reform by further deepening the reform through a number of measures, including setting up a market-oriented mechanism for the innovative service field and carrying out board of directors pilot programmes among subsidiaries. We actively explored opportunities in promoting mass

entrepreneurship and innovation. We rolled out the “WO Maker” programme and created an “incubation base with innovative supply, innovative gene and innovative talents”. The incubation base gathered together talents from China Unicom and incubated 35 projects in total, creating a favorable atmosphere for internal innovation and intrapreneurship within the enterprise.

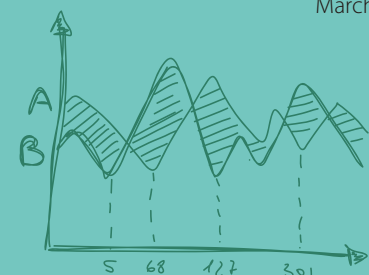
Cooperative development for mutual sharing and success. We closely cooperated with partners from the value chain to create an industry landscape of “innovation, vibrancy, joint efforts and mutual success”. We carried out an intensive cooperation with China Telecom under the theme of “co-building and co-sharing of resources, enhancing customer service quality”. Through such cooperation, we took concrete actions to push forward structural supply-side reform of the network in order to provide high-quality and highly efficient information communication service to the general consumers and enterprise customers. We commenced comprehensive cooperation with Internet companies such as DiDi, Baidu, Alibaba and Tencent, etc. in the fields of mobile Internet, artificial intelligence, big data and basic telecommunication services to let the community share the new variety of Internet development. China Unicom shares its growth with its employees by comprehensively implementing employee promotion and incentive systems. It perfected its dual-channel mechanism in relation to the promotion of talents, encouraged employees to provide suggestions for company development, helped employees enhance their own values and shared the achievements with the employees resulting from corporate development. China Unicom co-exists harmoniously with the environment. We facilitated the phase-out of old equipment and the recycling of materials, reduced network energy consumption, carried out green operation and promoted green concepts. We proactively provided assistance in developing the western part of China, participated in the universal service pilot programme and commenced targeted poverty alleviation initiatives, strengthened the network coverage and construction of service channels in remote areas with an aim to narrowing the digital divide among different regions and effectively generating more benefits to the general public.

In 2017, China Unicom will continue to make progress and accomplish our missions. We will firmly implement the Focus Strategy, uphold scale and profitable development as the principle and accelerate the pace of reform and innovation. We will also fully strengthen our development capability, cooperate with relevant parties to jointly create a new industry landscape in an open and practical manner and providing assistance in transforming China into a network superpower and constructing an information society in order to start a new chapter for achieving a healthy development and also to jointly create a new environment for smart living.

China Unicom (Hong Kong) Limited



Chairman
March 2017



ABOUT US

China Unicom (Hong Kong) Limited (“China Unicom”) is a Hong Kong-listed red-chip company of China United Network Communications Group Company Limited (“Unicom Group”). The substantial shareholders of China Unicom are China Unicom Group Corporation (BVI) Limited (“Unicom Group BVI”) and China Unicom (BVI) Limited (“Unicom BVI”), which jointly hold in aggregate 74.36% of the total issued shares of China Unicom and the remaining 25.64% shares are held by public shareholders. Unicom Group BVI is a wholly owned subsidiary of Unicom Group. Unicom Group and its subsidiary China United Network Communications Limited jointly hold 100% shares of Unicom BVI.

China Unicom provides a full range of telecommunications services, including mobile broadband (WCDMA, LTE FDD, TD-LTE), fixed-line broadband, GSM, fixed-line local access, ICT, data communications and other related value-added services. As at the end of 2016, China Unicom had 66.65 million fixed-line local access subscribers, 75.24 million fixed-line broadband subscribers and 264 million mobile billing subscribers.

DIRECTORS AND SENIOR MANAGEMENT



WANG XIAOCHU

Chairman and
Chief Executive Officer



LU YIMIN

Executive Director and
President



LI FUSHEN

Executive Director and
Chief Financial Officer



CESAREO ALIERTA IZUEL

Non-Executive Director



CHEUNG WING LAM LINUS

Independent
Non-Executive Director



WONG WAI MING

Independent
Non-Executive Director

**CHUNG SHUI MING TIMPSON**

Independent
Non-Executive Director

**LAW FAN CHIU FUN FANNY**

Independent
Non-Executive Director

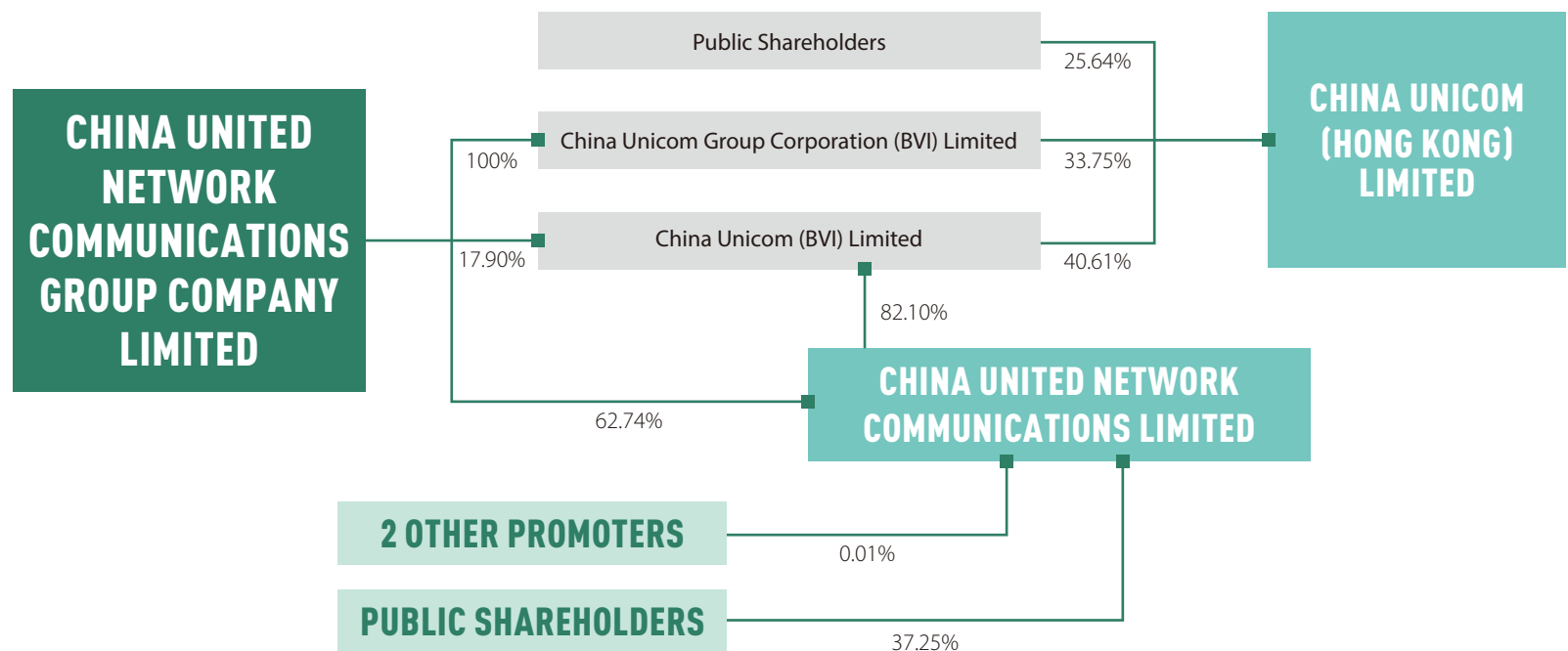
**JIANG ZHENGXIN**

Senior Vice President

**SHAO GUANGLU**

Senior Vice President

SHAREHOLDING STRUCTURE



(Updated on 31 December 2016)



STABLE AND ORDERLY BUSINESS OPERATION IN COMPLIANCE WITH LAWS AND REGULATIONS

Anti-corruption and integrity advocacy	11
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Risk management and control	11



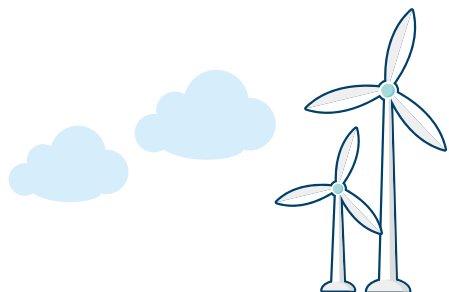


STABLE AND ORDERLY BUSINESS OPERATION IN COMPLIANCE WITH LAWS AND REGULATIONS

Business operation in compliance with laws and regulations is an intrinsic requirement for promoting the stable and healthy development of the enterprise. China Unicom insists on implementing the compliance operation in all aspects of work within the enterprise. In 2016, we further pushed forward the building of an ethical Party and administration and the adoption of the anti-corruption practice, thoroughly implemented a laws and compliance management, improved legal awareness of the employees, enhanced risk resistance ability, perfected the audit and supervision mechanism and assured the long-term sustainable operation of the Company under an effective compliance management mechanism.

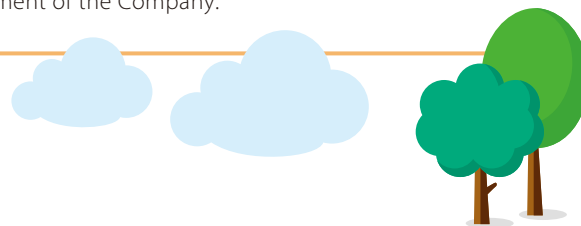
Measures adopted in 2016

- Strengthened the construction of a enterprise with rule of law, perfected the risk management system, developed innovative audit and supervision methods, and engaged in market competition in an order manner.



Actions in 2017

- Strive to build the system of "dare not to, no intention to and not allow to commit corruption", insist on focusing on discipline and rules and preventing "formalism, bureaucracy, hedonism and extravagance"; strengthen cadre selection and supervision, and intensify the efforts on cases investigation;
- Continuously improve corporate governance in accordance with the law, business operation in line with laws and regulations, normalised management and risk management and control ability; strengthen audit and supervision on the effective control over the operating performance and internal control, and promote the healthy development of the Company.



ANTI-CORRUPTION AND INTEGRITY ADVOCACY

Deepen the reform of discipline inspection and supervision system and mechanism

China Unicom thoroughly implements the requirements of Central Committee for Discipline Inspection and deepens the reform of discipline inspection and supervision system and mechanism.

- Implement nomination, investigation, appointment/dismissal and assessment of secretary and vice secretary of discipline inspection committee primarily by the superior disciplinary inspection committee in conjunction with the human resources department, with allocation of full-time secretary of discipline inspection committee to 38 provincial branches (subsidiaries) and affiliated organisations of the Head Office;
- Formulate the *Measures on the Management of Disciplinary Inspection and Supervision Personnel of Provincial Branches (Subsidiaries) of China Unicom (For Trial Implementation)*, implement the separate responsibility sequence management in respect of discipline inspection and supervision cadres, and link up the dual access for management sequence and professional sequence;
- Cancel the provincial branches (subsidiaries) supervision office system and the discipline inspection committee will take over the functions of the supervision office.

Carry out the in-depth anti-corruption initiatives

By heightening the “sense of politics awareness, overall situations awareness, core awareness and conformance awareness”, China Unicom carries out various in-depth anti-corruption measures. It insists on taking discipline as priority and strives to create an environment of integrity. In addition to intensifying its efforts in preventing corruption risks, it also focuses on creating a clean corporate political environment. Further, it tightens up its position in respect of implementing anti-corruption measures through coerced means and encourages tackling both the problems and their causes.

- Set up an annual report system for leaders, cadres and members to follow six disciplines, and issued two sets of disciplinary regulations and governing documents such as the “Guidelines on the Prevention of the Corruption Risks in Key Fields”;
- Inspected and supervised eight provincial branches, carry out spot check of issues relating to the violation of the rules and regulations, discipline rules and laws;
- Established discipline inspection and supervision report platform and multiple reporting channels such as correspondences, mails and phone calls; created rigorous and normalised management procedures to ensure that the reporting clues are controllable in the entire process;
- Launched the China Unicom discipline inspection and supervision website, which offers the functions such as discipline education, work-related communication and visits and whistle-blowing;
- Leaders of China Unicom at all levels, particularly the “highest leaders”, signed the *Commitment on Accountability System Governing the Implementation of Building an Ethical Party and Administration* to make open commitments on implementing such system on the part of the entity in building an ethical Party and administration.

In 2016, China Unicom cooperated with the procuratorial authorities to conduct investigation upon 3 key responsible persons of its provincial branches and handed over 13 staff suspected of violating the law to the judicial authority.

NUMBER OF COMPLIANCE TRAINING SESSION: **1,591** TIMES

NUMBER OF PARTICIPANT ATTENDING THE COMPLIANCE TRAINING: **254,628** TRAINEES

LAWS AND REGULATION ENFORCEMENT

China Unicom further promotes putting in place the law and compliance management for state-owned enterprise under the central government, and strives to position itself as a state-owned enterprise under the central government that has developed a well-established governance structure, conducted business operation in compliance with the regulations and regularised its management and acts in a law-abiding and trustworthy manner and that is also subject to the rule of law.

- The Group established the “Legal Construction Promotion Committee”, and all affiliated units set up legal construction group leading system under the leadership of “highest leader”; formulated the “Implementing Proposal for the Development of State-owned Enterprises under the Central Government Subject to the Rule of Law” and the “Five-Year Plan for Legal Education”;
- Conducted stringent legal review over the rules and regulations, economic contracts and important decisions; prepared the *China Unicom Compliance Manual*, and drew red lines on laws and regulations that cadres and employees must abide by;
- Strengthened the protection of patent, trademark, copyright and business secrets, set up incentive mechanisms in respect of scientific and technological innovation and the conversion of scientific achievements and at the same time developed a strict verification process to avoid infringing intellectual property rights of other parties;
- Set law learning as a mandatory course for the Party committees central groups at all levels; invited experts to give lectures on the rule of law, propagandised laws and regulations and enhanced the law awareness of all staff of the Company personnel by internal training, created the “Law Popularisation Corner” and organised law popularisation contest;
- Conducted in-depth research on the telecommunication market supervision policies and provided guidance to branches of each province in implementing and fully utilising the policies; proactively prevented and curbed irregular competition so as to protect the interests of the enterprise and to promote a healthy and orderly development of telecommunication market.

RISK MANAGEMENT AND CONTROL

China Unicom ceaselessly perfects audit and risk management system and effectively prevents operating risks to ensure a steady operation of the Company.

- Sufficiently use networking audit information system, and perform the responsibilities of supervision, evaluation and service; explore to establish a “three-tier collaboration” working mechanism among professional departments, units subject to audit and supervision system and human resource and disciplinary inspection departments to improve the audit quality and efficiency;
- Set up comprehensive risk management system for the purpose of integrating management of day-to day general risk and spontaneous critical risk, and protect company operation by formulating risk prevention and control measures, performing risk evaluation and upgrading internal control regulations. During the year, China Unicom has not been suffered from any material event associated with risks and also has not identified any material defect and substantial loopholes in respect of the construction and implementation of internal control.

China Unicom Beijing Branch spent 8 months to study and publish *Discussion on Internet+ Legal Thinking and Hot Legal Issues*, which comprehensively summarises the main points of Internet + legal risk prevention. The book relates to the research of legal risks covering six major fields, namely the Internet medical, education, finance, transportation, big data and e-commerce. This is the first kind of book relating to the Internet+ sector in China introducing the prevention of legal risks by businesses, and has been awarded the 2016 “Internet+ laws” Excellent Innovation Project Award.



FOCUS DEVELOPMENT TO IMPROVE QUALITY AND EFFICIENCY

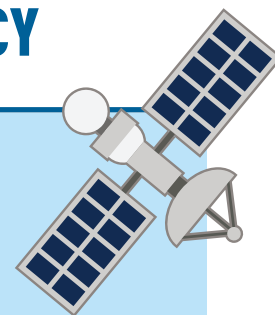
Deploy quality network	14
Develop quality products	18
Commit to quality services	21
Enrich supply of terminals	25





FOCUS DEVELOPMENT TO IMPROVE QUALITY AND EFFICIENCY

Quality is the core competitiveness of an enterprise. China Unicom is dedicated to providing quality network and product offerings. In 2016, we focused on the construction of 4G premium network and “all fibre network” cities, and intensively developed our high-bandwidth video business striving to enhance customer experience. We made joint efforts to facilitate sales and marketing of high-quality terminals, optimised multi-channel development on an ongoing basis, actively participated in the “Belt and Road Initiative” to expand overseas markets, and provided better information communication services to customers with craftsmanship quality, thereby contributing to the rapid development of the industry.

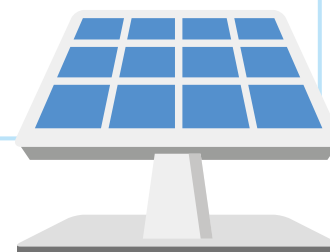


Measures adopted in 2016

- Had a total number of 740,000 4G base stations, achieved 4G network speed and latency which were on par with the industry average, accelerated fibre network upgrade, and achieved all fibre network in all ten provinces in Northern China;
- Successfully completed significant events such as the launch of Shenzhou Spaceship, G20 Summit, and Internet of Things Conference, and provided emergency communication services at the time of natural disasters such as typhoon and flood;
- Intensively carried out specialised actions for the prevention of and fighting against communication information fraud, prevented junk SMS, nuisance calls and fraudulent information, strengthened the management of wholesale phone numbers, and prevented to the fullest extent users suffering from property loss;
- Launched “WO+ TV”, a 4K video-based family video application product, optimised tariff policy with the average fixed-line broadband tariff down by 67%, and the average mobile handset data tariff down by 47%.
- Carried out terminal “Crowd Funding” events, held Crowd Funding Conferences 3.0 and 4.0, and sold about 70 million terminals through crowd funding.
- Optimised the construction of diversified channels, strengthened Internet e-services, promoted professional e-commerce operation, built digital stores, carried out specialised actions to “shorten over-the-counter servicing time in stores” with the average servicing time shortened to 6.2 minutes for ordinary services and no more than 13 minutes for integrated services.
- Set up a “listing/delisting” mechanism to effectively improve complaint resolution capability, pushed forward self-improvement in business, network and services with customer word-of-mouth NPS as the benchmark, achieving a sustained improvement in customer satisfaction.

Actions in 2017

- Focus on business demand in order to precisely improve mobile network capacity, accelerate the increase of the resource utilisation rate for broadband access network, and achieve excellent customer network experience in focus areas;
- Implement autonomous reform in operation and maintenance, create an extremely convenient service response system, better serve customers and front line staff to safeguard smooth communication;
- Improve information security management system, and intensively carry out specialised actions for the prevention of and fighting against communication information fraud;
- Enrich family Internet contents, popularise 4K ultra high definition video, introduce consumer financial service and service contents which resolve the difficulties encountered by the customers and improve customer perception;
- Improve channel capacity and expand into new touchpoints to provide new experience to customers, build O2O operation system, promote paperless service sign-up and “mobile APP + sales tools” light touchpoint services, establish eSIM service system, and realise a single-point access to full network service;
- Continuously carry out the NPS customer satisfaction evaluations and Internet service surveys, strengthen the improvement of touchpoint services, intensively develop the “listing/delisting” mechanism, and improve customer perception by means of encouraging the solution of key issues;



DEPLOY QUALITY NETWORK

Build a 4G premium network

China Unicom proactively implements the network superpower national strategy and speeds up the building of a high quality 4G network with emphasis on customer perception and market demand. By focusing on key businesses, key regions and indoor coverage, we strive to build a quality network with “faster speed, more extensive coverage and better perception”, so as to let our customers enjoy more pleasant experience, more relieved consumption and more dedicated services. In 2016, China Unicom invested RMB25.9 billion in its 4G network with a net increase of 340,000 4G base stations, bringing the total number of 4G base stations to 740,000. We completed coverage construction in the urban and county areas. Our campus coverage rate reached 95%. Our coverage over the towns and villages in Eastern China reached 95% and that over transport lines such as trans-provincial high-speed railways and airport expressways reached approximately 90%.

China Unicom has built a sizable 4G+ network. Downlink and uplink network speeds are 1.4 times and 5 times of the industry average respectively. Communication latency has been lowered to 10ms-ish level, and the quality of voice calls is on par with the industry average. China Unicom ranked top in the performance tests conducted by China Broadband Development Alliance, Deutsche Bank, SOHO China, Thunder and China Railway, etc.

A TOTAL OF
740,000 4G
BASE STATIONS IN
OPERATION



China Unicom Shijiazhuang Branch conducted independent research and development of APP and cloud application system and built a network optimisation system platform for crowd funding. Customers sent their feedback on the network experience and quality to a cloud database via the client APP. Through the system, the company could collect information about network utilisation, data and voice service quality, etc. with accuracy up to within 10 meters. With the information, the company carried out in-depth and detailed evaluation on the quality of network, to optimise network in a timely fashion and to enhance the perception of the mobile customers.

China Unicom Shandong Branch continuously explores new opportunities for network planning and construction. It adopted the most advanced 6D-ASP accurate planning method in the industry, and used big data analysis to accurately locate the indoor and outdoor service demand within the network. It also adopted high-precision 3D digital maps to carry out planning, calibration and simulation of wireless propagation model, which substantially improved the matching between network deployment and user demand. While fully ensuring network quality with a downlink rate of 300M and uplink rate of 75M, it further brought the 4G speed to a new record of 375M via frequency and capacity reduction, three-carrier aggregation and other technologies.

(Note: 6D-ASP is a method for accurate base station planning based on a six-dimensional data evaluation of capacity distribution, user distribution, terminal distribution, income distribution, complaint distribution and coverage distribution).

In recent years, the scale of Beijing subway has been expanding. The present network covers an aggregate of 18 lines, involving 341 stations with a total tunnel length of 555 kilometers, and its daily average passenger traffic amounts to 12.21 million person-time. In order to further improve the 4G network download speed along the subway, China Unicom Beijing Branch conducted a series of 4G network speed enhancements based on different scenarios such as subway entrances, tunnels, platforms and station halls so as to address issues such as high passenger traffic density and limited troubleshooting time for indoor distribution systems in subway, and comprehensively applied artificial intelligent network and big data to increase the 4G network speed of Beijing subway to 35.8Mbps.



Accelerate the construction of fixed-line network

China Unicom upholds the craftsman spirits and strives to create a high-quality broadband network for customers with good coverage and fast connection speed. It implements differentiated broadband construction strategies for Southern and Northern China, strengthens social cooperation and pays attention to the improvement of the port utilisation rate. The quality and capability of its broadband network have improved through meticulous construction and optimisation.

Speed up "all fibre network" construction

In 2016, the Company recorded a net increase of broadband access ports of 15.27 million, and achieved "all fibre network" in all 10 provinces in Northern China, with the number of "all fibre network" cities reaching 139. 89% of ports in urban areas have access speed of 20M or above and 99% of ports in rural areas have access speed of 4M or above. There was a significant improvement in customer perception.

We also accelerated free broadband speed upgrade. The nationwide average fixed-line broadband access speed amounted to approximately 30Mbps, and broadband users with an access speed of 20M or above accounted for 75% of the total number of broadband users and the proportion of broadband users with an access speed of 50M or above reached 36%. More than 20 million users enjoyed free speed upgrade.

A NET INCREASE OF **15.27** MILLION
BROADBAND ACCESS PORTS

NUMBER OF "ALL FIBRE
NETWORK" CITIES REACHED **139**

PERCENTAGE OF BROADBAND USERS WITH AN
ACCESS SPEED OF 20M OR ABOVE REACHED **75%**

NUMBER OF USERS ENJOYED FREE
SPEED UPGRADE MORE THAN **20** MILLION

Strengthen backbone network construction

The Company deployed in scale 400G platform routers and 100G high-bandwidth circuits, continuously pushed forward the construction of directly-connected nodes in the backbone network to enhance interconnection, and proactively expanded its broadband capacity. In 2016, the Company's domestic backbone bandwidth reached 170T, its domestic interconnection bandwidth reached 2,881G, and its international gateway bandwidth reached 1,711G.

Implement transmission system capacity expansion

During the year, the Company expanded the capacity of the transmission system by 100T and accordingly added 490 new 100G end-to-end circuits to support the high speed service for our customers. The network speed and other technical performance indicators of the 169 Backbone Network were further improved with intra-network latency ranking the first among operators in an evaluation by MIIT. The 600G expansion for the International inbound and outbound capacity has been completed, resulting in a significant improvement in the international inbound and outbound network capability. The Company pushed forward the construction of international data cache system and became the first among the three operators to complete the construction, take delivery and commence operation of the system. As a result, it achieved an international data cache capacity of over 180G.

China Unicom Shangqiu Branch invested over RMB900 million to build the first GB "all fibre network" in China. 177 nodes at the township level, 4,338 administrative villages, 1,790 communities and 8,121 private lines of enterprises and major customers received fibre upgrade. More than 500,000 broadband users are fully covered by fibre. Based on its fibre network, China Unicom Shangqiu Branch worked in conjunction with the municipal government of Shangqiu and Alibaba Group to jointly build the Alibaba (Shangqiu) Industrial Belt with an aim to promoting and selling the featured products of Shangqiu online. 1,206 enterprises have joined the Alibaba (Shangqiu) Industrial Belt, and the online trading volume has exceeded RMB1.6 billion.



Smooth emergency communication support

In 2016, China Unicom established three key emergency communication support principles of “quality network, innovative support and focused cooperation”, formulated and implemented an emergency communication big data mining plan and also a communication emergency scenario protection plan. By promoting the emergency communication in an innovative manner, all emergency communication support tasks were completed successfully.

Communication support for Shenzhou Spaceship launch

On October 17, 2016, “Shenzhou XI” manned spaceship was launched successfully. China Unicom initiated a joint communication support programme involving four provincial branches, inspected optical cables, node machine room and equipment, conducted real-time network monitoring, and constantly inspected underground pipelines. Nearly 400 technicians and over 200 communication vehicles provided peripheral support and a number of supporting officers were stationed on site at Jiuquan. The communication support task was completed successfully.

Communication support for Internet of Things Conference

In October 2016, World Internet of Things Exposition, the most prominent and largest national conference in the field of Internet of Things – was held in Wuxi, Jiangsu Province. China Unicom Jiangsu Branch entered into a 7*24h standby mode, sent over 100 persons to inspect power, cable lines, machine rooms and equipment on a daily basis and to carry out troubleshooting. Over 50 staff members were despatched to test, optimise, regulate, build and maintain both the expo venue and surrounding area as well as the traffic lines. Two emergency communication vehicles were used to provide on-site support. Jiangsu Branch fulfilled the tasks of ensuring smooth network, full coverage and failure-free maintenance, and ensured a perfect network experience during the conference.

Communication support for G20 Summit

In September 2016, the 11th Group of Twenty Summit (G20 Summit) was solemnly held in Hangzhou, Zhejiang Province. In order to ensure the smooth communication during G20 Summit, China Unicom invested RMB330 million to build 497 new 4G base stations for G20 Summit, despatched maintenance personnel for 8,652 person-time and mobilised emergency vehicles for 1,731 vehicle-time. During the Summit, Zhejiang Unicom set up dedicated service zones for the Summit in stores, service hotlines and online stores, and created dedicated G20 service support hotlines under the 10010 and 116114 hotlines to provide bilingual service for international roaming users and domestic roaming users in China. A featured section for G20 Summit was added in e-service channels to allow users to easily check the agenda of G20 Summit, nearby scenic spot and gourmet recommendations, and travel information so as to let foreign guests appreciate the beauty of Hangzhou with just a click.



Communication support during natural disasters

In 2016, while serious floods occurred in some areas in China, and there were torrential flood, debris flow and landslide in certain areas. Typhoons “Nepartak”, “Nida”, “Meranti” and “Megi” landed in mainland China one after another. Facing the serious disasters, all employees of China Unicom took full responsibilities, overcame dangers and difficulties to provide full support for the communication of important customers such as the Party, government and the military as well as flood control and drought relief command departments and to reduce loss of the Company to the minimum. During the flood season, China Unicom contributed RMB282.06 million in total for disaster relief and mobilised rescue personnel for 272,620 person-time, rescue vehicles for 100,701 vehicle-time, emergency equipment 23,648 unit-time, emergency oil engines 119,696 unit-time, and sent 541.33 million community care and emergency SMS.

Maintain the security of network information

Protect the security of network operation

China Unicom focuses on national security and long-term development, always bears in mind the importance and significance of network security and its responsibilities in safeguarding it, and sturdily assures network security. A series of measures were adopted to further improve the capability of our network infrastructure and business systems to defend such threats as cyber attacks, viruses, network invasion, network meltdown and information thefts so as to safeguard the security of our network infrastructure and important business systems.

- Carried out control measures such as network safety protection management, communication network unit grading registration, conformance (benchmark) evaluation, risk assessment, network data security and user information protection;
- Increased investment in network security technology, reinforced the network security protection foundation by following the principle of “simultaneous planning, phased construction, operational feasibility and self-controllability”, and achieved the objective of “network-wide perception, intelligent analysis, centralised control and open network capacity”;
- Strengthened the building of network security protection and supporting team, conducted over 50 sessions of network safety protection training in various forms with more than 1,000 participants so as to improve technical capability of our network security protection personnel;
- Built an security and emergency work system for the entire network, formulated an Internet emergency plan, set up network security emergency team, and handled over 56,000 security incidents of various types throughout the year.

China Unicom Network Technology Institute launched the “Enterprise User-oriented Security Integrated Protection Platform”, which is a set of product solutions which are equipped with highly integrated features, resource flexibility calculation, customisable services, flexible and open interface, and are developed by combining the technologies of SDN/NFV and cloud computing to accommodate the security protection needs of enterprise users. Meanwhile, by leveraging on the relevant capabilities of the platform, the Company created a series of security value-added service products such as China Unicom dedicated security lines, security data centres and security ICT products to provide more efficient and convenient security protection support to users. The project is selected as “Telecommunication Industry Network Security Pilot Demonstration Project” of MIIT.

Ensure a stable information system

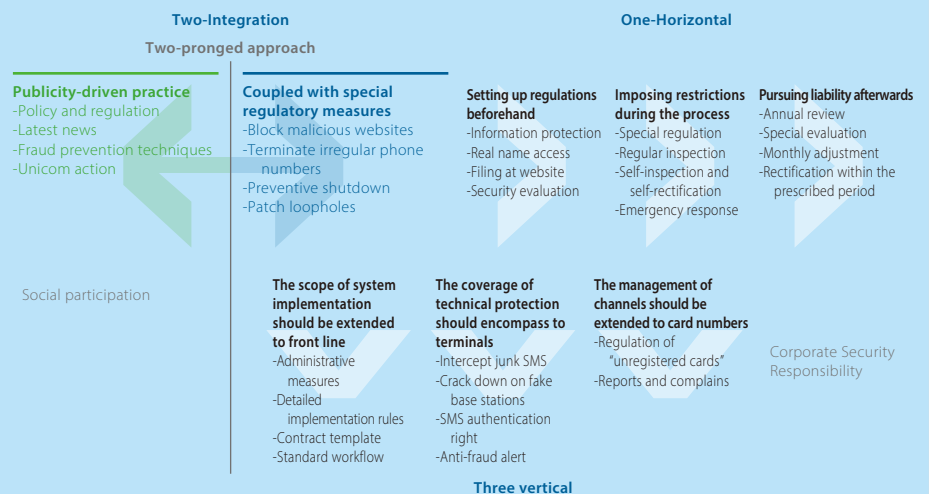
- Strengthened information system security construction; deepened transformation from security control to security service; centering around data security and business security, carried out security protection of centralised system, integrated and perfected the security system and ensured the security of information system and information assets;
- Strengthened control over information security risks; strengthened security system construction, and ensured that all safety risks are identifiable, controllable and manageable, and that the results of the security efforts are assessable; enhanced security management regulations and safe operation guidance of the proprietary systems of provincial branches. No serious security incident occurred in head office and provincial branch system during 2016.

Perfect information security system

- Conducted website security inspection with specialised actions for fraud prevention;
- Took the initiative to assume responsibility, and launched a nationwide nuisance call alert service with 2 million alerts sent per day on average;
- Continuously addressed the issue of junk SMS resulting in a decline in user reporting rate by 41.3% as compared to the beginning of the year;
- Included wholesale numbers into our own system for regulating junk SMS, nuisance calls and communication information fraud;
- Provided anti-fraud public service covering all mobile phone users within the network, which saved users from suffering material economic losses and was granted written recognition by the Joint Office of the State Council.

When technicians of China Unicom Sichuan Yibin Branch carried out routine voice business analysis, they found the daily call volume of two base stations in Guandou Town, Gong County, Yibin City was hundreds of times higher than the normal level. After conducting an in-depth analysis on call signaling and base station environment, technicians deduced that it was very likely due to malicious calls. They helped Yibin Criminal Police Team to precisely locate and proactively crack down on the malicious calls, and successfully seized 14 calling devices and 9 laptops.

China Unicom Beijing Branch established a “one-horizontal, two-integration, three-vertical” communication information fraud prevention system under which the term “one-horizontal” means focusing on “process control” and achieving the goal of “setting up regulations beforehand, imposing restrictions during the process and pursuing liability afterwards”; the term “two-integration” means generating an “overall effect” that results from a “publicity-driven atmosphere coupled with special regulatory measures”; and “three-vertical” means focusing on the “degree of enforcement” and emphasising that “the scope of system implementation should be extended to front line, the coverage of technical protection should encompass terminals and the management of channels should be extended to card numbers”. The fraud prevention work of China Unicom Beijing Branch was widely recognised by the society. Followers of its official Weibo account wrote that “fraud prevention is surprisingly complicated”; “good job, Unicom”; “to give China Unicom Beijing Branch a “like””; “thanks for your alert (to fraud)”.



Strictly prevent user information leakage

- Perfected user information protection and management system; implemented the real-name registration system for all users by strictly requiring all new users to use their real names for registration and accelerating the follow-up registration of existing users; while placing close attention to four key areas, i.e. the collection, storage, use and destruction of user information, set up protection initiatives and specific measures which cover the entire course of business operation; strengthened the management of user registration data in various channels such as stores and agents, enhanced user information protection in e-commerce, and implemented a reporting system for incidents relating to the leakage of user information. There was no incident of serious information leakage during the year;
- Regulated the access of user information by mobile APPs; revised “WO store APP Regulations”, implemented a full-lifecycle safety verification mechanism on mobile APPs; prohibited the retrieval of personal information unrelated to the features or without the permission of users, and ensured that APPs accessing personal information of mobile users in violation of the regulations cannot be listed; for APPs that have already been listed, increased the frequency of safety reviews to ensure that users were thoroughly protected from APPs which involved illegal and irregular acts such as illegal retrieval of users’ personal information, malicious charges and bundled download, etc. The WO store APP platform rejected all the 35 illegal APPs which were found to have violated the regulations, and suspended or terminated the relevant developer accounts to protect the legal interests of users.

DEVELOP QUALITY PRODUCTS

Optimise product tariffs

In order to implement the national “Broadband China” strategy and the requirements of “Speed Upgrade and Tariff Reduction”, China Unicom continuously optimised product packages, and launched multiple preferential tariff policies to achieve “tariff reduction for the benefit of the people”. Meanwhile, in order to rapidly respond to the needs of customers in different regions, China Unicom earnestly implemented simplification of administration and delegation of power. Clearly pointing out that provincial branches have the main responsibilities for operation, the Group’s head office delegated the power of approving products and marketing activities to provincial branches to fully unleash their operating vibrancy.



Reduce mobile broadband tariff

- Lowered the data tariff exceeding RMB0.27/MB to RMB0.27/MB;
- Offered discounted sales of mainstream 4G packages, benefiting over 40 million users;
- Increased the data allowances of existing 4G packages by adjusting the data allowance of the RMB76 package from 400MB to 800MB and that of the RMB106 package from 800MB to 1GB, benefiting over 20 million users;
- Launched an upgraded version of the “Data Usage at Ease” package, which carried a progressive tariff system – RMB10 for 100MB and up to RMB60 for 1GB;
- Cancel long-distance and roaming charges in Chengdu-Chongqing regions, benefiting over 20 million users.

China Unicom Yunnan Branch further reduced tariffs. The tariff for 10M fixed-line broadband dropped by 18.8% YoY, 20M by 27.3% YoY, 50M by 26.2% YoY and 100M by 21.3% YoY. As for mobile broadband, with the launch of daily card, users could enjoy 500M of data at a price of RMB1. Products such as monthly data packages, daily data packages and holiday data packages were also launched. Long-distance and roaming charges were cancelled in Central Yunnan region. Campaigns were launched to offer monthly rebates of local data up to a total of 2GB.

In 2016, China Unicom Beijing Branch implemented the fifth broadband speed upgrade. Regarding fixed-line broadband, it offered to existing public broadband users who subscribed to unlimited monthly and annual packages of 20Mbps or above a free upgrade to the next speed band. For new users, the latest broadband tariffs were implemented, which resulted in a tariff reduction by 16.9% at the maximum. The fifth broadband speed upgrade benefited nearly 3.92 million broadband users in the city; nearly one million of China Unicom broadband users could enjoy free IPTV.

Lower international roaming charges

Under the current adjustment of international roaming charges, adjustment related to voice call charges involved 130 countries and regions with an average drop of 48% and that related to data charges involved 116 countries and regions with an average drop of 72%. Meanwhile the number of areas covered by the RMB5 data package was expanded from 87 to 112, covering 33 territories and regions along the “Belt and Road Initiative”.

AVERAGE REDUCTION IN INTERNATIONAL ROAMING CALL TARIFF

48%

AVERAGE REDUCTION IN INTERNATIONAL ROAMING DATA TARIFF

72%



China Unicom reached a consensus with Nepal Telecom in respect of reducing international roaming charge and network interconnection. Nepal is one of regions with high mobile roaming costs in the world and has been generating a considerable amount of mobile roaming income from the inbound roaming business for a long time. Through visits and discussion, the two parties signed a new roaming cost settlement agreement to lower voice and data settlement cost by about 60% vs before.

Improve data service

Leveraging its fast and smooth broadband network, China Unicom intensively improved its data operation capability, and laid equal emphasis on both the forward and backward data traffic operation.

Diversify product offerings for forward data traffic operation

- On top of the various existing monthly data packages, made available additional products such as monthly top-up data packages, daily data packages, holiday data packages and half-yearly data packages, and continuously enriched various special offers of dedicated data packages for data-intensive videos, music and games;
- Activated “Data Usage at Ease” feature beyond package data allowance, launched an upgraded version for the “Data Usage at Ease” data package, and implemented progressive “Data Usage at Ease”.

Expand backward data traffic operation business

- Established an integrated data distribution platform under a unified policy, unified access, unified support and decentralised management, and supported the innovation of the business model of data operation; explored an external cooperation mode combining backward data + commission by making use of key projects and the group-based marketing policies of the Company; in 2016, the Company had a total of 57 partners for its backward data operation;
- In respect of dedicated data traffic operation, adopted an integrated product mode with third-party applications and continuously diversified value added services. Ten major products, such as WO+ video, WO+ music and Sina Weibo, were developed under WO+APP.

Enrich video experience

With the fibre upgrade of broadband network, high-speed video service has become an information consumption hotspot. China Unicom has positioned video as a strategic core business among the Group's innovative businesses.

Launch TV video services

China Unicom extensively developed video products leveraging its broadband network, and launched a 4K video-oriented family video application product "WO+ TV", which covered multiple contents such as video, games, music, education, shopping and healthcare, and curated over 100,000 hours of video, over 1,400 games and over 50,000 songs.



In order to promote information consumption driven by video service, China Unicom set up the "4K Ultra High Definition Industrial Alliance", jointly formulated the technical specifications of 4K smart set-top boxes with China Telecom, signed a 4K Joint Innovation Agreement with Huawei, published a white paper on IPTV technology, and actively promoted the healthy development of 4K ultra high definition industry.

Leveraging on its own technical advantages, China Unicom Tianjin Branch has developed a series of brand new services such as time shifting, replay, VOD, OTT HD video on IPTV in addition to offering conventional live broadcasts. Under its cooperation with Tianjin Broadcast & TV Network, China Unicom Tianjin Branch successively launched a range of innovative programmes such as "find me pretty anchors" and "seafood feast". At the same time, it made substantial efforts in developing value added services based on IPTV. The recently developed "WO+ video" can even allow video calls between a cell phone and a TV.

Upgrade Smart WO Family service

The Company extensively developed the Smart WO Family integrated services, with integrated package users of 19.67 million, and bundled cell phones of over 32 million, which effectively promoted a coordinated growth of both the fixed-line and mobile users.

- Adjusted package structure so that the fixed-line and mobile product systems were fully covered by integrated services;
- Enriched the product offerings of Smart WO Family packages, developed WO+ video, WO+ housekeeper and other innovative family Internet products;
- Optimised regulation of Smart WO Family business, reduced the restrictions on sign-ups and package start dates, and shortened the average servicing time from 20 minutes at the beginning of the year to no more than 6 minutes.

Smart WO Family of China Unicom Shandong Branch – WO+ IPTV has 140 live channels and 27 local channels. It offers over 50,000 hours of on-demand programmes such as HD movies and hot TV series (with 2,000 hours of content updated every month); there are also other 4K applications such as daily life information, online education, quality music, game and entertainment. The Smart WO Family package of China Unicom Shandong Branch combines broadband, mobile data, voice calls and SMS services at the option of the customers to enable the sharing of all services by the whole family through multiple terminals. Customers commented that "while the package seems to be rather expensive, it is indeed cheap because I have selected China Unicom's Smart WO Family service". Once a family member pays the bill, the whole family can share the package, enjoy mobile phone service, watch TV and access broadband. Smart WO Family gives them all!

In light of the high demand on mobile video, China Unicom Nanchang Branch made use of products such as the dedicated data packages for Tencent Video and Youku Video to launch a one-month free trial of the "Video Storm" campaign. Users can enjoy a free trial in the first month by subscribing to those data packages. The campaign generated tremendous responses from users after launch. The online reservation page of the WeChat public account received over 50,000 clicks. Within one month after the campaign was launched, 15,000 users subscribed to such packages successfully. The average monthly data usage volume increased from 889MB to 1085MB. The campaign was also well received by the youth.

Expand international video service

China Unicom Global Limited signed the Letter of Intent for Strategic Cooperation of China Unicom International Video Services with senior management representatives of outstanding Chinese-language new media services providers such as ICNTV, Oriental Pearl, Nanguang Media, Mango TV and Wasu Media to jointly build an Internet TV overseas content distribution base and OTT video service global distribution centre so as to explore room for Chinese cultural exchange and cooperation and strengthen the international transmission capacity construction. By contributing their respective strengths and resources, both parties jointly foster, develop and share market results in promotion of global Internet TV market.



China Unicom Global Media Strategic Partners
Signing Ceremony

Transparent product pricing

Simplify package tariffs

- Packages were designed according to the principles of simplifying tariff structure, regulating tariff advertising, improving tariff transparency and protecting user demand to ensure simple structure and easy understanding, forbid obscure tariff structure and conditions of use, and eradicate unreasonable charges;
- Focused on promoting packages with simple and clear tariff structure and unified standard for the convenience of users to understand and select;
- Regulated tariff policies and related advertising, ensured that the tariff packages are easy to understand, open and transparent so that customers can purchase on a knowing basis.

Clearly specify data tariff billing

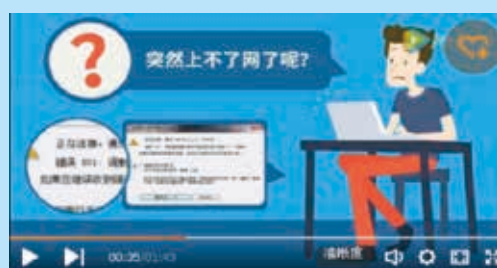
- Strengthened data tariff billing system scrutiny, and improved compliance, standardisation and transparency of data tariff billing;
- Strengthened data tariff billing monitoring, focused on monitoring the rate of timely collection of the payment of half-year data packages, detailed day-to-day changes of data traffic, data price approval time difference fluctuation, high amount phone bills and other key customer concerns, and issued warnings for high data consumption and abnormal SMS;
- Set up a mechanism for handling abnormal data traffic, communicated and analysed abnormal traffic fluctuation in time, and properly handled abnormal international data traffic and capped abnormal traffic.

Strictly control over unclear charges of value added services

- Revised *Value-added Service Management Method*, further clarified the double confirmation requirements for subscription of value-added services, and focused on fighting against the acts of coerced subscription, induced subscription and falsified subscription of value added services and the charging malpractice targeted at end users;
- Strengthened technical protection, and for business subject to multiple complaints, assure double confirmation and clear tariff instructions by adding verification code and other means;
- Tightened punishments on illegal behaviours, and imposed a fine of RMB54 million for irregular value-added subscription behaviour;
- Enhanced the internal accountability of the proprietary services, and circulate notices of criticism for operating units which have imposed charges on a compulsory basis.

Perfect consumer alerts

- Optimised the consumption alert scenarios, and set up a full life cycle alert system;
- Sent data usage alerts by product to enable customers to understand the specific usage of each data product easily;
- Implemented an early warning system for suspension of service under which early warnings in respect of account balance, credit limit and service suspension will be given during the entire process;
- Optimised the system for sending batches of SMS, and improve the rates of successful, timely and accurate delivery of SMS;
- Regulated the announcement of service information, and assure the consistency of service information, both online and offline, such as type of service, term of service, tariff standard and service scope.



In order to help customers more easily understand communication policies and knowledge, and correctly understand communication services and common malpractices, China Unicom Tianjin Branch produced a series of "Let WO show you" videos and uploaded them onto well-known video websites such as Youku, Tencent and iQIYI. Such series of videos presented the relevant communication policies, safety instructions, recommended products, new technologies, convenient services and practical skills by way of Internet transmission means which were easily understood. So far, 45 videos in eight categories have uploaded online, with over 660,500 visitors viewed the pages.

COMMIT TO QUALITY SERVICES

Improve brand image

China Unicom establishes a full-service brand framework system under its corporate brand. "WO" is a full-service brand of China Unicom, and also a core brand for communication with users that is endorsed by the corporate brand of China Unicom. In 2016, China Unicom made intensive efforts to build its 4G brand image by creating "quality network", "quality products" and "quality services". NPS survey in the fourth quarter showed that the Company experienced a substantial improvement in terms of brand recognition and word-of-mouth awareness.

Brand Framework of China Unicom



Improve service capability

In 2016, China Unicom had 20,700 self-operated stores, in which 15,000 were operated in form of chained operation of terminals covering 436 cities, prefectures and districts in 30 provinces, which is the largest terminal retail chain channel with the most extensive coverage in China. By improving in-store digitalisation in terms of hardware and software and optimising the business process, the store efficiency and foot traffic improved significantly. The business volume increased by 10%, foot traffic increased by 30% and the number of in-store brands increased by 50%.

Improve store service capability

The Company intensively promoted "joint construction and joint operation" mode between stores and terminal suppliers, improved terminal outlet atmosphere and sales capacity by making use of the resources of the terminal suppliers in order to create an "information terminal retail experience" outlet store with "good quality and best price". Special zones and special counters for terminal brands were set up in stores to enable users to enjoy an immersive experience through the scenario-based marketing services of the salesmen.

The Company successively marked its nationwide self-owned stores on Baidu map so as to provide LBS services based on the locations of users and at the same time offer mainstream products to users through a third-party Internet platform and also guide users to make their ways to outlets accurately.

(Note: Location Based Service is a location-based value added service provided to users by obtaining information relating to the position of mobile terminal users through the radio communication network of operators or external positioning mode to offer the related services to the users with the support of geological information system platform.)

Build digital stores

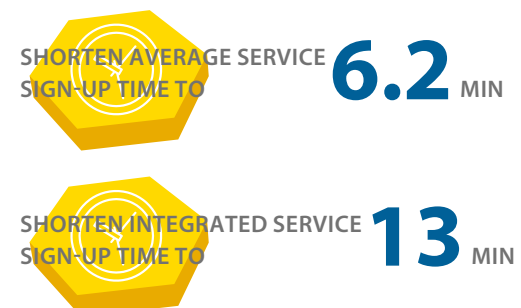
In order to create a marketing mode of "regulated management, standardised layout, modernised equipment, digital operation and paperless sign-up", China Unicom set up a special project to build "digital stores" under the themes of intelligent stores and modernisation of sales tools.

- Integrated various hardware devices in stores to form an integrated tool in order to reduce maintenance costs;
- Provided "APP light touchpoint + slim device" professional sales devices to sales personnel, which is convenient to operate without the need to use any paper;
- Adopted digital means such as paperless sign-up and payment via scanning to save costs and improve efficiency.

Shorten the in-store servicing time

In order to effectively save the waiting time of customers, the Company carried out a special action to "shorten the servicing time at store counters".

- Promoted connected queuing machines, and let customers check real-time queuing status and make reservations on mobile APP and online store;
- Reduced the customers' queuing time by means of giving consultants' recommendation, setting up express window for handling issues relating to bill payment/invoice, on site ad hoc staff arrangement and setting pre-acceptance/bill counter;
- Promoted the commitment of "hundred times of credits reward for overtime queuing" in which pilot operations had been carried out in certain self-owned stores;
- Launched the WO sign-up platform nationwide to simplify the operation of the front desk operation.



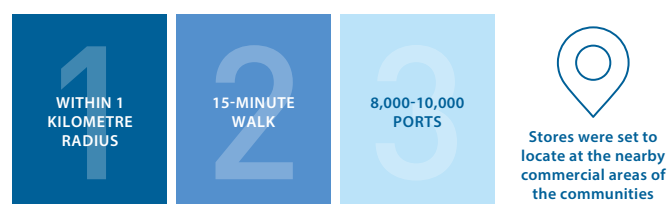
Promote open channel transformation

Intensively promoted the transformation and development of open channels to improve service capabilities of the open channels.

- Focused on cooperation with channels with capacity to sell terminals, and achieved mutual development with Gionee, OPPO and VIVO.
- Centring at strategic channels of Gome, Suning, D-phone, and FunTalk, adopted different cooperative strategies aiming at different entities, and as a result 21,000 community channels were set up during the year;
- Established an end-to-end evaluation system, "one form for one channel", and carry out efficiency evaluation on store-by-store basis;
- Improved the operating ability and support ability of the two major platforms, Woego and WO Retail, and built a differentiated "one body with two wings" platform serving to expand channels; innovated on a "first-come-first-served" online order model. Over 20,000 channels have participated in pre-order activities.

China Unicom Fuzhou Branch launched "small but quality" community WO stores which were located in the centre areas jointly built with agency contractors and each served an area within a 1 kilometre radius with a 15-minute walk according to the principle of "approaching the community and users". Each community WO store covers about 10,000 broadband ports. The community WO stores integrate the functions of installation, maintenance, service and sales, and are dedicated to provide fast sales, fast service and fast response. The completed community WO stores cover 418 communities.

Distribution of community WO stores



Under the principle of "approaching the community and users", stores of approximately 30 square meters each were selected and an evaluation model would then be built.

Expand online channels

China Unicom strives to provide better online services and also better enhance its value, continuously improves e-commerce service ability, strengthens online channel development and social e-commerce cooperation, accelerates expanding service touchpoints and boosts online and offline integrated operation.

- Comprehensively coordinated internal and external online touchpoints, and set up an Internet touchpoint marketing system which comprise its own stores (including online stores and mobile stores), JD flagship store, Tmall flagship store, WeChat public account, WeChat store together with other external contacts; sustainably promoted O2O business platforms such as online WO store, Buy by Code, and OTA sign-up, and provide online/offline integrated marketing ability in the offline stores;
- Explored centralised order verification mode, and offered 7x24h uninterrupted order verification services;
- Take advantage of physical stores to carry out the "salesperson+ users" bilateral incentive initiative, resulting in a significant increase in the number of new APP users.

By rolling out mega online marketing activities such as "Purchases for Spring Festival", "517 Online Shopping Festival" and "Singles' Day Carnival", and through cooperation with JD, Tmall and Tencent, the Company achieved a remarkable result in e-commerce development and its e-commerce turnover during the year reached RMB84.77 billion.

China Unicom Guangzhou Branch held an e-commerce festival under the theme of "Top of Internet, Cloud Time of Guangdong". Guangzhou Branch WO TV cooperated with well-known e-commerce corporations to start new mode of "WO Purchase", and strived to create online shopping environment with fast purchase and good quality for users. During the Singles' Day, Guangzhou Branch developed a total number of 24,280 customers across all Internet products and generated RMB7.5 million in IDC revenue. When all citizens were enjoying the nationwide shopping event, Guangzhou Branch provided a series of cloud safety solutions to protect network security of e-commerce corporations and Internet financial enterprises.

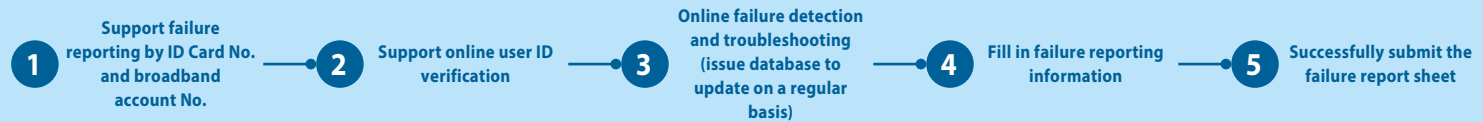
Strengthen Internet e-services

- Promoted the sharing of the Internet service capability, and expanded the Internet services portal. Online customer service touchpoints amounted to 116, and primary touchpoints included online store, mobile store, WeChat store, WO Window, WO mailbox, WO music, WO TV, and WO Fortune etc.;
- Integrated the Internet knowledge base which has the capability to conduct unified distribution integrating the online channel, robot and hotline channel. We preliminarily realised "a single compilation available for all channels" to offer support to various service channels;
- Expanded the new media publicity matrix of customer service on a continuous basis; by positioning a new media matrix centring at "China Unicom Customer Service" account, managed 129 WeChat and Weibo accounts, gathered 207 members of the Post Bar Alliance such as Xiaomi, CITIC Octopus Card and Meitu, and developed Internet new media resources with 25 partners from different industries, such as UC, 360, LeTV and Huawei;
- Strengthened the opening and operation of service capacity such as online customer service and Baidu Zhidao, explored big data, and scenario-based knowledge marketing, and enhanced the centralised operation of online customer service.



Online Store of China Unicom

China Unicom Shanghai Branch strives to build up omni-channel Internet service ability to “serve the customers wherever they are in the world”, and provides new functions in online stores, mobile stores and local WeChat account, including broadband self-service troubleshooting, reporting of failure and making enquiry on the quality of mobile networks, and complaint resolution progress inquiry.



China Unicom Beijing Branch comprehensively promoted smart customer service, introduced the technologies of intelligent voice navigation, pre-set customers labels, and big data analysis, enriched Weibo and WeChat channels, and improved service efficiency. Customer service at Weibo and WeChat public accounts of Beijing Branch won the honour of “2016 Most Influential Second-tier New Media Account of Enterprises under the Central Government”.

Improve hotline service level

- Pushed forward special rectification of irregular service, and achieved zero complaints on the irregularity of hotline service;
- Carried out international roaming customer perception improvement programme to improve ability to accept online international roaming service sign-up;
- Provided convenient smart service, and activated intelligent voice navigation service in seven provinces;
- Pushed forward the integration of services, sales and relationship maintenance, and served customers online;
- Strengthened the basic operation and management of hotlines, and improved the hotline service capability and level.

Pay attention to the maintenance of customer relationship

China Unicom continuously enhances customers’ value and pays attention to customer feedback, and this makes the value of the usage history of the customers become more apparent so that the longer the usage history, the more privileges a customer would be entitled to. The user retention rate of mobile users in 2016 increased by 3.7 percentage points compared to 2015.

- Launched deposit-free and 50%-deposit tariff rebate/free service contracts for existing users. Users with a usage history of over two years are entitled to tariff rebate/free service contracts on a deposit-free basis and users with a subscription length of more than one year are entitled to tariff rebate/free service contracts with a 50% discount on deposit;
- Launched special handset contracts with discounted deposit for existing users. Users with a usage history of over 5 years are entitled to handset contracts on a deposit-free basis, users with a usage history of over 2 years are entitled to handset contracts with a 70% discount on deposit and users with a usage history of over 1 year are entitled to handset contracts with a 40% discount on deposit;
- Launched a promotional contract of RMB99 deposit for iPhone6 and iPhone6S particularly for exiting users with a usage history length of over 2 years.

Since China Unicom formed a strategic partnership with the Chinese Table Tennis Association in 2005, it carried out plentiful customer relationship activities by utilising such table tennis resources. In 2016, China Unicom held the “Linking the World, Sharing Glories” event in head office building for its fans and customers and table tennis stars such as Liu Guoliang, Zhang Jike and Ma Long attended this event. The event was live broadcast by many Internet media, and was warmly responded by fans on site and online. By this activity, China Unicom effectively showed its gratitude towards the long-term trust and support of its customers.



China Unicom Held a Social Event with Chinese Table Tennis Team

China Unicom Hainan Branch set up a synergic maintenance system centring at customers’ big data around touchpoints and the consumption behaviours of customers, and provided “clear, comfortable and assured services” to customers. Care upon service sign-up and clear tariffs: established call-back team to introduce tariff package and voice and data inquiry methods for new customers; care for use and comfortable services: set up a communication system for customers to understand their demands and solve their difficulties at any time; business response and assured experience: identified the characteristics of existing customers and segment them into groups, provide recommendation on service products by call-back whenever the customers are in need. In 2016, the customer hotline made contacts for 500,000 person-times each month on average, with satisfaction of 98% and approximately 58,000 online contract sign-ups.

Optimise service perception

China Unicom strives to improve customer service level aiming at enhancing customer satisfaction. It streamlines the after-sales service channels by means of perfecting store and e-service to facilitate communication with the customers. In 2016, the Company focused on dealing with customers' concerns around key services, key channels and key dispute issues, conducted monthly analysis on customer service, sets up a key issue listing/delisting mechanism, and compelled internal departments to effectively resolve those issues. In 2016, 36 issues were listed, and 13 of them were rectified and delisted tracing back to the source of such issues systematically, facilitating the thorough solution of similar issues.

China Unicom Shandong Branch, based on the principle of "diligent service and sincere operation", dealt with customers sincerely with true dedication and diligent work and gained the confidence of customers through its quality services. It made three commitments, namely "free and unconditional speed upgrade, genuine speed and 480 service time limits", in connection with its broadband services to the public. In order to assure the fulfilment of such commitments, Shandong Branch deployed service outlets and professional maintenance service teams covering different parts of the urban and rural areas, and set up 7×24h broadband expert hotline, WeChat customer service account and other comprehensive service sign-up system to achieve the goal of "rapid reaction, fast solution and responsive to every issue".

(Note: 480 service time limit: repair and maintenance within 4 hours, installation/removal within 8 hours and 0 service sign-up blind spots in the event of any breakdown occurring in an urban area or county within the province; and repair and maintenance within 8 hours and installation/removal within 8 hours the event of any breakdown occurring in the rural (towns and lower) area of the province).



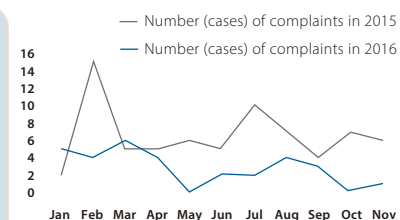
Improve complaint solution ability

The Company is committed to properly handling user complaints well and duly solving service disputes. It built a nationwide first tier service support platform, and formed a large service operation and management system with a three-tier Group-Province-City organisational structure covering eight major segments. It intensively promoted complaint classification and grading management, continuously traced and handled unsolved complaints and problems by making use of work orders, and carried out strict evaluation and certification of the outcomes to guarantee the quality and results in resolving problems, so as to compel on an end-to-end basis back office departments to resolve issues encountered by the customers.

The Company set up a complaint early warning model which relies on its big data platform, developed user characteristic profiles in six dimensions, including user's loyalty, character traits, user's social circle, natural property, complaint process and complaint business scenario, identified the groups that are prone to grievance so as to help customer service representatives to provide differential services and in turn to improve customer satisfaction.

In 2016, the nationwide 10010 customer service hotline handled in aggregate 17.86 million complaints, with a complaint solution rate of 95.6%, and the monthly average complaint rate during the year was 3.61 person-times/million users, representing a decrease of 1.6% on a year-on-year basis.

China Unicom Shanxi Changzhi Branch constantly strengthens its complaint management and control, and perfects closed-loop treatment. Firstly, it clearly specified the time limit and requirements on handling a complaint in each stage, streamlined the handling process and assigned the relevant responsibilities. Secondly, it formulated solutions and contingency plans aiming at addressing common problems, hotspot issues and difficult service problems of complaints, and urged the implementation of such solutions and plans. Thirdly, it focused on analysing the cause of a complaint and defects of a service, and proposed solutions and rectification requirements. Fourthly, it traced and handled unsolved and unsatisfactory work orders, analysed the underlying reasons and formulated the relevant measures. In 2016, the number of complaints dropped by 57% on a year-on-year basis, and the number of complaints at the provincial level dropped by 8% year-on-year.



Carry out customer's word-of-mouth evaluation (NPS)

On the basis of the customers' demands and perception, the Company persistently carries out NPS evaluation and pushes forward the self-improvement of business, network and services. In 2016, the Company successively carried out a comprehensive group-wide customer word-of-mouth NPS evaluation on its mobile and broadband operations. Samples covered cities and counties, and the performance indicators were delineated to different specialised teams to monitor dynamically the self-improvement of customer word-of-mouth and the change in the gap with industry peers, and pushed forward the internal management improvement work of each specialised team

centring on the word-of-mouth of the customers. The overall NPS for 4G users improved by 5.5 points and that for broadband access improved by 4.5 points.

Customer Satisfaction in 2016

Evaluation subject	2014	2015	2016
Overall satisfaction (Score)	76.4	76.5	77.5

In order to effectively understand the perception of customers, China Unicom Heilongjiang Qiqihar Branch documented, recorded, analysed the service sign-up process and customers' perception covering from the point a user arrived at the store until he left. Through such comprehensive experience, Qiqihar Branch formulated targeted improvement measures, including setting counters for "simple services" to handle simple services such as invoice printing, card reissuance, suspension/resumption of service. Ushers in a store actively guided users to use self-service payment terminals to reduce lining up. Smart WO Family experience special zones and counters were set up to handle Smart WO Family service specifically. Qiqihar Branch also revised the code of conduct of store service personnel and strengthened the salesperson training.

	Before improvement	After improvement	Average waiting time shortened
Queuing time	There were altogether 10 customers and the average waiting time was 10 minutes	There were altogether 10 customers and the average waiting time was 8 minutes	2 minutes
Counter service time	There were altogether 10 customers and the average waiting time was 12.7 minutes	There were altogether 10 customers and the average waiting time was 10 minutes	2.7 minutes

ENRICH SUPPLY OF TERMINALS

China Unicom insists on customer demand orientation, and strives to provide timely, diversified and affordable terminals to customers.

- Cooperated with China Telecom to turn “all network access” terminals into an industry standard. Currently “all network access” terminals have become the mainstream in the market.
- Held terminal crowd funding campaigns twice and sold 64.51 million 4G terminals, helping 46 million users upgrade their terminals to 4G.
- Continuously upgraded the terminal crowd funding campaigns. At the 2016 Terminal Crowd Funding 4.0 Partners Conference, there were 1,500 participants and the transaction volume of the terminals reached 51.35 million, which generated a turnover of RMB54.5 billion.
- Effectively met the market demand for low-price terminals as the number of participating low-end brands increased to 24 while their market share increased to 28%.



2016 Intelligent Terminal Industry chain Industry-wide Strategic Cooperation Summit & China Unicom Terminal Spring Trade Fair



China Unicom Communication Information Terminal Autumn Trade Fair & Crowd Funding 4.0 Conference

China Unicom has created three “new cooperative modes” for terminal industry chain cooperation, promoted the acceleration and enhancement of cooperation in the 4G terminal industry chain, and facilitated industry-wide cooperation of the communication industry.

New ecological cooperation mode: China Unicom + LeTV= “Network + Data + Terminal + Contents”

China Unicom cooperated with LeTV in respect of network, data, terminal and innovative contents. Both parties strived to develop, service and maintain users, and formed a new terminal-based and user-oriented ecological cooperation model.

New special market cooperation model on terminals for universal adoption: China Unicom + Partners = “in-depth customisation + scale entrustment + dedicated implementation + comprehensive support”

This is a cooperation model conducted by China Unicom to centralise resources for low-price terminal operation, optimise the diversified supply of terminals and customisation policies. By sharing and building resources with manufacturers, this model helps boost the low-price customised terminal industry.

New comprehensive cooperation model: China Unicom + Gionee = “all products + all channels + all marketing + joint action”

This is a new model of comprehensive cooperation between China Unicom and offline channels. China Unicom will fully upgrade its network, products, channels and services and will achieve a mutual sharing of brand resources with its partners for the benefits of each other; as a representative of offline channels achieving strong business recovery in the market, Gionee will cooperate with China Unicom’s new offline system to achieve a win-win situation.



DRIVE REFORM BY INNOVATIVE DEVELOPMENT

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DRIVE REFORM BY INNOVATIVE DEVELOPMENT

Innovation is the primary power to promote development. China Unicom always places innovation in the core position of overall business development of the Company. In 2016, the Company comprehensively implemented “Internet +” action plan, sought for breakthrough in such new fields as cloud computing, big data and Internet of Things, focused on eight key industries to push forward industrial Internet development, actively promoted network evolvement and restructuring, innovated commercial mode for Internet enterprises, and vigorously advanced system and mechanism reform and management innovation. We also set up the “innovation and venture” platform, and provided powerful support to promote public venture and innovation.

Measures adopted in 2016

- Focused on pushing forward the reform to motivate junior staff in fundamental businesses, and promoted classified management of subsidiaries and market-oriented reform in innovation businesses;
- Set up an “innovation and venture” platform, initiated “WO Maker” programme to support employees to start business; 35 projects entered incubator;
- Implemented simplification of administration and power delegation, and checked, sorted out and optimised rules, systems and powers;
- Provided packaged informatisation application services in fields such as ICT, IDC and cloud computing, Internet of Things and big data;
- Set up 7 industrial Internet bases and 9 incubators in eight hot industries, and acquired a batch of large-scale “Internet+” projects.
- Achieved leading position in total bandwidth of international marine and land cables in Asia-Pacific, newly developed 22 operator customers in countries along the “Belt and Road”, and achieved full coverage of operator business in ten ASEAN countries.
- Carried out forward-looking technology research with focus on 5G, SDN/NFV and IPV6, released five ITU-driven standards, and launched into applications of a series of technological innovation achievements.

Actions in 2017

- Sustainably deepen reform to motivate junior staff, explore system and mechanism reform in innovative businesses, and build lean and efficient management team;
- Leveraging specialised subsidiaries and application bases, improve R&D ability for products in Internet of Things, cloud computing, big data and “Internet+”, and launch more diversified informatisation application services.
- Enhance the integrated operation of the international business, strengthen the effective synergy between international and domestic businesses to improve overseas market expansion ability and serve the development of the “Belt and Road Initiative”;
- Closely monitor 5G standard and industrial development, and gradually carry out technical experiments and network tests in key cities.

BUILD INNOVATION SYSTEM

Push forward market-oriented reform of subsidiaries

China Unicom implements classified management, authorisation and evaluation for subsidiaries with innovative business. We apply different management modes according to the different circumstances of each subsidiary in the innovative business, and promote alignment of responsibilities, power and rights. We not only provide innovative business subsidiaries with adequate nurture, but also offer space for them to grow, so as to help them become real market participants. We procure that Zhiwang Technology Co., Ltd. and WO Store Technology Co., Ltd. uphold the governance of the board of directors, and established operation and management decision-making mechanism centring at “(general meetings of) shareholders – board of directors, (board of) supervisors – operation and management level”. Meanwhile, the Group delegates special powers in investment, financing, employee compensation and marketing, and gradually establishes a market-oriented operation mechanism which features distinct ownership, clear powers and responsibilities, independent operation and self-financing of profits and losses.

Explore the PPP mode

In order to achieve competitive advantages in the industrial Internet market, China Unicom tests the implementation of the PPP mode. The core purpose of PPP mode is to seek business franchise rather than pure participation in market competition, to seek actual control over operation rather than pure gain from financial investment, and to seek long-term operating income rather than short-term profits from projects. By building a national “Internet+” top level project design team, focusing on project implementation demand in third- and fourth-tier cities, and establishing an integrated team of “top level project design + implementation solution + system integration + service provision”, China Unicom can meet differential demands of various local governments. In the future, pilot tests will be carried out in some provincial regions gradually.

Note: PPP (Public-Private Partnership) refers to the long-term partnership between the government and social capital where profits and risks are shared by means of franchise, service procurement or equity cooperation, etc. in order to enhance the ability to supply public goods and services, and to increase supply efficiency.



Set up an “innovation and venture” platform

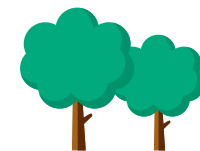
Under the guidance of the national strategy of innovation-driven development and “innovation and venture”, the Company has established an “innovation and venture” system that focuses on its main business, is based on its innovative capability platform, centres on cooperation and mutual benefits, and is interconnected both internally and externally. It includes three core platforms:

- Internal innovation incubation platform: the Company launched a “WO Maker Plan”, and set up special zones to support the ventures of employees relying on the open resources of the incubation platform. There were a total of 416 employee-initiated project applications in the first batch, among which 35 projects successfully entered incubators.
- External capital investment platform: the Company carried out external cooperation through a “incubation services + investment platform” mode established by China Unicom Innovation & Venture Investment Co., Ltd. Investments in 11 projects have been completed and settled, among which two have been listed on NEEQ, six have completed a new round of financing with unrealised gains of 1.5-9 times, and two have reached exits with an average annualised return of 100%;
- Open platform for innovative ability: various innovative resources were pooled together by the platform, which was fully open to social entrepreneurs. It greatly lowered innovation costs and provided support to public innovation.

“WO Maker” Plan of China Unicom

Full-time innovation during a six-month incubation period	Continue to be paid and retain position during the incubation period	RMB50,000-200,000 of support by the incubation fund	Open resources of China Unicom	Free to decide as to whether to stay or leave after the incubation period

35 EMPLOYEE PROJECT APPLICATIONS HAVE ENTERED INCUBATORS



PAVE WAY IN KEY BUSINESS AREAS

China Unicom persists in innovation-driven development, continues to make endeavours in innovative businesses such as Internet of Things, cloud computing and big data, and achieves cross-over integration with traditional industries. Targeting the eight key fields of medical care, education, manufacturing, agriculture, environmental protection, tourism, transportation and logistics and public administration, China Unicom provides a lot of specialised and centralised information communication services with focuses on ten hot applications such as public e-services, education informatisation, auto informatisation, wearable equipment and mobile media, etc., making positive contribution to the implementation of the national “Internet+” action plan.

Expand new space of cloud computing/IDC

China Unicom continuously bolsters the resource investment and development in cloud computing, achieves improvement of cloud data/IDC resource ability and platform development, and enhances fundamental core abilities such as management, research & development, innovation and cooperation, etc. Business volume doubled.

- Improve resources ability: China Unicom implements a “M+1+N” resource deployment scheme in the nation (M means national level and international core nodes; 1 means one core node for each province; N means local edge nodes). It has deployed 35 public resource pools and 13 dedicated private cloud resource pools with 160,000 cores of computational power, 10 PB of storage, and 820G of network bandwidth.
- Perfect platform loading capacity: China Unicom has established a CDN network covering the entire country with provincial capital cities and key cities as edge nodes. The network covers overseas accelerated nodes through cooperative operation, with more than 40 nodes and more than 1Tbps of bandwidth reserve.
- Strengthen R&D ability: China Unicom has acquired 30 software copyrights, passed CMMI3 software certification, and obtained trusted cloud certification for two new products.
- Enrich product system: China Unicom has set up 5 product lines, i.e. IDC, cloud computing, CDN, big data and cloud safety. The Wo Cloud platform has been upgrade to version 4.0, covering 16 cloud computing products in four major categories, namely computing, storage, network and application. We also developed five key products including efficient block storage, cloud backup, full flash block storage, cloud cache and cloud database.

Establish “China Unicom Wo Cloud + Cloud Ecology Alliance”

China Unicom initiated to establish the “China Unicom Wo Cloud + Cloud Ecology Alliance” which is participated in by over 30 industrial leaders such as global chip manufacturers, hardware manufacturers, database vendors, software application service providers and integration service providers. This industry alliance aims to gather the edges and resources of each part in the cloud computing industry chain, build a complete cloud computing industry ecosystem, and promote prosperous development of cloud computing ecosphere in China. Meanwhile, the Company has pushed forward the upgrade of standards, industrial applications and industrial services in cloud computing.



Inaugural Meeting of “China Unicom Wo Cloud + Cloud Ecology Alliance”

Awards and certifications received by China Unicom Cloud Data Company

- Cloud China Award, Best Practices for Cloud Computing Award, Most Influential Cloud Industry Company Award, and Excellent Cloud Computing Product Application Award granted by MIIT;
- “Most Innovative Award” granted by China International Big Data and Cloud Computing Expo;
- Green Data Centre Award, Prominent Contribution of Data Centre Award, and 2016 Excellent Operator Data Centre Award granted by China Data Centre Alliance;
- ISO9001 certification, ISO27001 certification, trusted cloud (cloud desktop and block storage) certification.



Shao Medicine Health Cloud 2.0, to which China Unicom Wo Cloud platform provides technical support, was officially announced in the 3rd World Internet Conference in Wuzhen. The platform is the first mobile intelligent medical care cloud platform with graded treatment as the core and physical hospitals as the carrier in China. It has undergone comprehensive cloudification upgrade, and is capable of integrated operations in respect of citizen medical insurance and medicine logistics and distribution through a hybrid cloud mode.

China Unicom Beijing Branch established an “Innovation and Venture Cloud Service Platform”, addressing the government’s innovation and venture management departments as well as small and medium enterprises. The Company has established a nationwide innovation and venture service network through channels such as government’s innovation and venture management departments, industrial alliance, public venture spaces and incubators. It has achieved national innovation and venture service connection and implementation. In order to encourage innovation and venture, Beijing Branch of China Unicom allows quality venture enterprises to use its platform resources for free within a limited period. The platform now has gathered a number of innovation and venture enterprises such as SOHO China, Tsinghua SEM X-elerator, Zhongguancun Intelligent Hardware Dreamworks, which make joint effort to build up a healthy innovation and venture ecosphere.

Expand new space of big data

In 2016, China Unicom engaged in the promotion of big data sharing and open capability cooperation, and continuously deepened industrial applications and perfected its service system.

- Perfect big data platform: China Unicom has built a big data platform with a hybrid architecture based on Hadoop, achieved scale application of open source technologies such as Hadoop, Spark, Storm and Redis in actual production and service, and integrated container technology to enable unified operation and services at resources, data and application levels.
- Strengthen data processing ability: China Unicom’s big data platform can collect five categories of data, including those on IT production system, business platform, communication network, external Internet and cooperation partners, covering 400 million customers, with a daily processing capacity of over 400 billion pieces of data, and high value resultant data sedimentation reached over 17PB. This platform supports multi-layer capacity output through a primary platform, internally covering refined management, marketing, customer relationship maintenance, customer service, network planning and network optimisation, and externally providing big data services for over 300 partners in over 10 industries.
- Enrich product system: China Unicom proprierly developed six major data products, including user labels, credit rating products, targeted marketing platform, WO index products, location-based services, and open capability platform.
- Improve operating system: China Unicom has established informatisation-oriented head office and provincial pre-sales teams, and a national sales system for corporate customers, and provides external big data cooperation service support to subsidiaries.

Launch big data products

China Unicom has announced personalised big data solutions in various industries such as transportation, finance, automobile and Internet, and will focus on applications in three main industries, namely tourism, advertising and transportation as well as “small data” personal applications targeting the general public. We will continue to provide full-range solutions to industries and individuals ranging from data collection, data mining to business operation leveraging more diversified products, more open platforms and better operating system, so as to help enterprises and the entire society to add new value.





China Unicom and over ten partners in the video industry such as Baidu and Tencent jointly published the *China Internet Film and TV Big Data White Paper*. This is the first big data white paper in the industry. By integrating high quality data resources, comprehensively analysing and judging on the fluctuation trace of the Internet film and TV industry, and predicting the future development trend of the Internet film and TV industry in a scientific way, it provided references to regulating government departments, Internet video platforms, film and video industry practitioners and investors.

Smart Steps Digital Technology Co., Ltd. is a joint venture company established by China Unicom and Telefonica. The big data platform of Smart Steps links up with data cooperation channels of partners such as China Telecom, Baidu, Union Pay and GPS. It uses the world leading location big data product "Smart Steps" to develop an industrial product model of location data after dozens of upgrades and localisation. As a location big data product of China Unicom, Smart Steps has formed core abilities in location labelling, API interface, data set/reporting and urban perceptual system. It can comprehensively analyse time-space and preference characteristics such as urban residency, points of interest, routes of interest, and travel modes. Through anonymous, integrated and push data processing application methods, it can provide the highest level customer data security guarantee, and at the same time provide top-tier big data insights and relevant services for the government's public administration and social governance, and enterprises' commercial intelligence, transformation and upgrade.

Unicom System Integration Limited Corporation of the Heilongjiang Branch has developed a "targeted marketing platform", which can analyse user behaviour and characteristics so as to understand the user's behaviour and preferences, and through personalisation algorithm and based on the preferences and interests of users, recommend different commodities and products. In this way, targeted services to users are effectively achieved, and the results obtained from the analysis "understand users even better than themselves".

Expand new space of Internet of Things

China Unicom takes Internet of things as a key area of development in its innovative strategy, and has made great efforts to develop the technology and applications of Internet of Things, so as to accelerate the establishment of an industrial system with international competitiveness, deepen the integrated development of Internet of Things and the economy and society, and provide support to the development of the country into a manufacturing and network superpower.

Develop the Internet of Things platform

China Unicom and Jasper, the global leader of Internet of Things platform, cooperated to build a world leading Internet of Things platform.

- We have built dedicated network elements and a dedicated platform for Internet of Things with nationwide M2M service support ability, and created a standardised, open and centralised Internet of Things operation and support system;
- We have adopted BIP over-the-air card activation technology in China. It can link a SIM card directly with worldwide operators, so as to truly enable "one-point access and global deployment";
- With real-time network accessibility, self-diagnostic services and automatic engine, the platform can provide outstanding visibility and controllability. By monitoring equipment behaviour, setting up rules and real-time operation, it can actively prevent problems, and improve stability and reduce costs at the same time.

Research and develop all-in-one service solutions

Through cooperating with all parties in M2M industry chain, China Unicom has developed all-in-one Internet of Things service solutions, covering chips, modules and applications. The Company has launched, in cooperation with other parties, a platform for remote contracting management, and focused on developing a Global SIM service model. In conjunction with international operators, we have provided global Internet of Things solutions for multi-national clients in automobile, transportation, consumer electronics and engineering equipment. Meanwhile, we shortlisted candidates through centralised Internet of Things communication module tests, and formed a list of partners to build up our ability in communication modules service. In 2016, China Unicom had a total of 43 million Internet of Things connections. China Unicom's Internet of Things M2M basic platform won the 2016 Internet of Things Solution Award by MIIT.

China Unicom Taizhou Branch has developed "Bianque First-aid System" on the Internet of Things platform. Users can measure blood pressure, conduct electrocardiogram, measure pulse and blood oxygen in the real time with the system, display the results on mobile phones and send them to the personal electronic health archive in the call centre through Internet of Things services, or to the mobile phones of family members and friends. Based on "Bianque First-aid System", the Chest Pain Centre of Jiangsu Taizhou People's Hospital has established a regional cooperative chest pain first-aid network with a number of basic hospitals. It has reformed the treatment workflow for critical illnesses relating to chest pain, and has significantly improved treatment efficiency and quality.

Aiming at solving parking lot shortage in downtown and busy areas, China Unicom Tianjin Branch has developed an "Intelligent Parking System". After the geomagnetic vehicle sensor has detected the vehicle information, the system will send the relevant information such as parking lot occupation, parking time and fee payment to the POS machine of the parking staff through the 4G network. People can perform "parking lot map inquiry, quick stored value top-up, overdue fee payment, parking inquiry and bill inquiry" through an APP. Currently, the system has covered over 20,000 parking lots in 500 car parks in Tianjin, which facilitates the achievement of "fair and transparent parking charges and avoid manual handling of money". The parking management company can also use this platform to strengthen its supervision on parking staff.



Expand new space of industrial Internet

China Unicom focuses on eight key industries, and plans to set up 16 bases. Each base conducts R&D on application products aiming at a certain industry. As of 2016, China Unicom had built seven product operation bases and nine product incubation bases, and has completed R&D of 56 products. Such bases have promoted over 219 projects in total. The number of base partners reached over 101, and an industrial alliance focused on the products of such bases is gradually formed.



- China Unicom won “Outstanding Contribution Award of the 16th China Education Informatisation Innovation & Development Forum” granted by the Ministry of Education.
- The “Internet + Logistics Localisation Project in Jilin” of China Unicom won “Third Prize of Science and Technology Progress Award” granted by China Federation of Logistics & Purchasing.

Internet + agriculture

Targeting problems such as low utilisation of agricultural machinery resources and difficult issuance and management of government subsidies, China Unicom has applied BeiDou Navigation Satellite System to Internet and agriculture and has developed the BeiDou Agricultural Machinery Informatisation Management Platform. Through this platform, the agricultural machinery terminal carries out positioning and data collection in respect of agricultural machinery and information is processed through the Internet of Things platform of China Unicom, so as to achieve refined management of positioning, dispatching and real-time measurement. It not only improves agricultural machinery operation efficiency greatly, but also helps the government more conveniently issue and manage subsidies.

Internet + tourism

China Unicom has launched a tourism big data platform, which shows the relevant information of domestic scenic spots through “scenic spot dashboard”, “tourist source dashboard”, “scenic spot analysis” and “tourist analysis”, and serves scenic spot management and tourism marketing. The “Scenic spot dashboard” can show analytics such as scenic spots’ crowdedness and tourist flows, and mark the positions of scenic spots on a map. The “tourist source dashboard” can show tourist source information at national, provincial and scenic spot levels in real time. “Scenic spot analysis” can show information on food, hotel, transportation, sightseeing, shopping and entertainment in the region through analysis of popular keywords and tourists’ Internet behaviours. “Tourist analysis” provides analytics by tracking tourists’ travel routes, their APP usage and where they stay.

Internet + medical care

China Unicom Smart Medical Care Cloud Platform adopts the mode of “Internet + hospital alliance + doctors” to disseminate medical resources, and provide higher quality, more convenient and safer medical care services to the public. The platform can provide medical assistance services for medical institutions, provide early warning services in respect of medical regulation and decision making for healthcare authorities, provide services to patients such as health consultation, making doctor appointments and report inquiry, and provide services to doctors such as two-way and transparent referral, mobile doctor consultation, medical coordination and information exchange among doctors. The medical cloud platform has also launched cloud image system, which may receive medical image reports such as ultrasonic and ECG examination reports, and allow real time inquiries. Through mobile terminals, doctors can conduct remote diagnosis based on such medical images.

Internet + environmental protection

China Unicom and Institute of Atmospheric Physics, China Academy of Sciences has signed a strategic cooperation agreement, whereby the two parties established strategic partnership in air pollution forecast and early warning model, air pollution intensity monitoring, environmental protection big data and value-added services, and nuclear pollution forecast model, for the purpose to increase the informatisation level for air pollution management, and thus provide scientific technology and information services for environmental protection and treatment in China.

Internet + education

In 2016, China Unicom made a great breakthrough in the education informatisation industry, and in total acquired 2.275 million mobile users, increasing by 120% year-on-year. 3iKids APP served 20,000 kindergartens. 3iKids WO card mobile users reached 888,000. Class-Access covered 301,000 classes, and mobile users of everyone-access cards reached 1.038 million. China Unicom is honoured by the Ministry of Education as the “only operator which systematically provided informatisation solutions in the main battlefield of education in China”.

China Unicom Guangdong Zhaoqing Branch has launched the “Interactive Smart Class”, an all-in-one solution which integrates cloud, pipelines and terminals, and centres on “education resources cloud platform + class-access/everyone-access application platform + intelligent terminals + wireless network”. Zhaoqing Branch provided 34 free “Smart Class” demos, high-quality and affordable wireless broadband service and smart learning terminals to secondary and primary schools and kindergartens of the city, and opened “China Unicom Tiny Class”, a learning management platform, to secondary school and primary school students for free. Meanwhile, China Unicom Zhaoqing Branch, in cooperation with Zhaoqing Education Bureau, made great efforts to integrate quality education resources on “China Education Cloud” and “Guangdong Education Cloud”, and developed local Internet courses and incorporated them into “China Unicom Tiny Class” learning management platform, so as to provide quality education resources for secondary school and primary school students and children.

Internet + public administration

China Unicom, based on a series of new technology applications such as mobile Internet, cloud computing, big data and Internet of Things, has launched a series of new "Internet + public administration" industrial application products, covering smart fire control, food traceability, safety mobile phone, ocean access, Internet of videos and Lanxin. These public administration industrial applications will bring innovation to the government's service mode, improve scientific decision making ability and management capability of the government, and effectively improve the government's working efficiency and service ability.

China Unicom Jilin Branch has developed an online public administration and services platform for the provincial government of Jilin Province, which integrates features such as transparent public administration, convenient public services and open data, and coordinates the services at the provincial, municipal and county levels. Through the development of an "integrated network" for public administration and services, China Unicom Jilin Branch has helped push forward the centralisation of public administration data in the entire province, enabled "online acceptance", "one-stop handling" and "whole-process" efficiency supervision of provincial public administrative authorities and convenient public services, and promoted centralised authorities, on-line services, disclosure of public administration information and data resources sharing.

China Unicom Zhejiang Taizhou Branch has developed "ESHIAN" platform for the purpose to achieve Internet+ supervision for food. Market supervision officers can use a mobile client to take photos on site and upload them, and register basic food safety supervision information so that evidence relating to food safety supervision can be collected on site and inspection information can be reported immediately. Taizhou Branch has also developed an "ESHIAN" APP to enable maintenance of routine inspection records, convenient information reporting and accurate enforcements against breaches.

Internet + transportation

Through its subsidiary Zhiwang Technology Co., Ltd., China Unicom provides differentiated products and comprehensive services for auto industry customers, mainly including information services, platform operation, call centres, online stores, content services and ICT. In the OEM market, the Company integrated auto manufacturers' original supply chains. In the aftermarket, the Company promoted a bundled service mode combining "platform + hardware + data + operating service". For new energy vehicles, the Company promoted comprehensive services combining "vehicle monitoring platform + data + storage + operating service" in leveraging the state's policy on mandatory monitoring of new energy vehicles. In the vertical industry market, the Company focused on the key fields such as bus rental, online taxi appointment and industry fleet management, and provided comprehensive solutions for vertical industries. In 2016, Zhiwang Technology Co., Ltd. cooperated with 38 international and domestic auto manufacturers.

- Zhiwang Technology Co., Ltd. of China Unicom won "Best China Telematics Enterprise of the Year" Award granted by the Society of Automotive Engineers and Telematics@China Organising Committee
- Zhiwang Technology Co., Ltd. of China Unicom won "Innovation Award of China Internet of Vehicles" granted by Internet of Vehicles Conference

China Unicom Xinjiang Branch has developed "safety management and control system for dangerous and heavy vehicles" targeting large vehicles such as construction vehicles, passenger vehicles, buses and trucks carrying dangerous goods. Relying on mobile communication technology, the system can identify driver's identity, accurately position driving routes, devise electronic fences and remotely control dangerous driving vehicles. In this way, it can strengthen the safety supervision on dangerous and heavy vehicles, and help to solve the problem of insufficient safety supervision personnel in regulatory authorities, the difficulty in vertical interaction of information on stability maintenance and horizontal expansion of stability control, so as to effectively prevent outbursts of terrorist attacks caused by vehicles. Currently, the system has been installed on 1,815 large vehicles, and the project has become a benchmark stability maintenance industry application in South Xinjiang.

Internet + manufacture

Targeting manufacturing enterprises, China Unicom brings its network coverage advantages into full play, and provides safe and reliable communication modules and fast and stable networking ability to help enterprises carry out Internet-based online value added services such as early warning for malfunctions, remote maintenance, quality diagnosis and remote process optimisation, so as to increase product value.

Help "Smart City" construction

In 2016, China Unicom launched a series of application solutions covering industry, agriculture, medical care, tourism, communication and services leveraging new technology applications such as mobile Internet, Internet of Things, big data and cloud computing, so as to provide powerful support to "Smart City" construction and the development of digital economy.

China Unicom Yinchuan Branch made great efforts to cater for government planning, helped "Smart Yinchuan" construction, built up the overall framework of "one cloud, one network and one map", and deployed 13 sub-modules in 10 systems covering smart public administration, smart community, smart transportation and smart environmental protection. It also completed the construction of over 4,000 nodes, such as security monitoring, smart transportation, electronic station boards, wireless WIFI, and RFID data collection. Yinchuan is the only smart city in China with top-level planning covering the whole city. Therefore, it has achieved city-level data sharing and generated real value from the data, benefiting municipal administration, citizens' daily life, industrial development, energy conservation and environmental protection, etc.



Improve ICT ability

- **Integrated implementation ability:** relying on its communication network, China Unicom has set up a “grand integration” service system and developed an integrated implementation framework serving key national projects;
- **Application development ability:** China Unicom has set up an R&D system combining basic R&D in the head office and application R&D in various bases;
- **Service outsourcing ability:** China Unicom has optimised the development of its outsourcing support system, improved automated monitoring and onsite inspection capability, set up a unified operation and maintenance command system based on ITSM (IT service management), and explored how to establish a service outsourcing system which meets the requirements of IAAS (infrastructure as a service) and PAAS (platform as a service).

Expand new space of international market

In order to strengthen coordination and planning of international business and more effectively expand overseas business, China Unicom established China Unicom Global Limited (hereinafter referred to as “Unicom Global”) in 2015. Unicom Global is responsible for the operation of all global businesses of China Unicom catering to all customer bases. Unicom Global is committed to being a leading service provider in information communication among global enterprises and in the Asia-Pacific region, so as to make contributions to the implementation of the national “Belt and Road Initiative” and “Internet +” action plan. Unicom Global has set up 29 sales offices around the world in line with its overall development concept of “focusing on key markets, based in Asia-Pacific and optimising its global network”. Its operator business is distributed all over the world while its corporate business mainly focuses on Asia Pacific, the Americas, Europe and Australia. Its mobile MVNO services have expanded into Europe and the Americas with Hong Kong as the headquarters.

Improve overseas network ability

- International basic transmission bandwidth increased by 9.3T, and total bandwidth reached 19.7T.
- 16 POPs were added in the transmission network, and the global total number of POPs reached 44.
- For data networks, AS4837 reached 15 POPs, AS9929 reached 35 POPs and AS10099 reached 35 POPs.

Innovate overseas product system

- Basic IDC products include resource-based services such as host service, Internet access service and IP address lease service. IDC value-added products include network security, data application and IT operation and maintenance services.
- Launched new cloud computing products, mainly including virtual private servers (VPS), CloudPRTG, cloud desktop and DDoS data cleaning.
- Launched comprehensive information solutions, covering informatisation infrastructure development, software/hardware application services, and one-stop maintenance outsourcing for enterprise informatisation software/hardware, etc. serving hundreds of overseas enterprise offices, including Union Pay International, ICBC International, China Merchants Bank and SPD Bank.

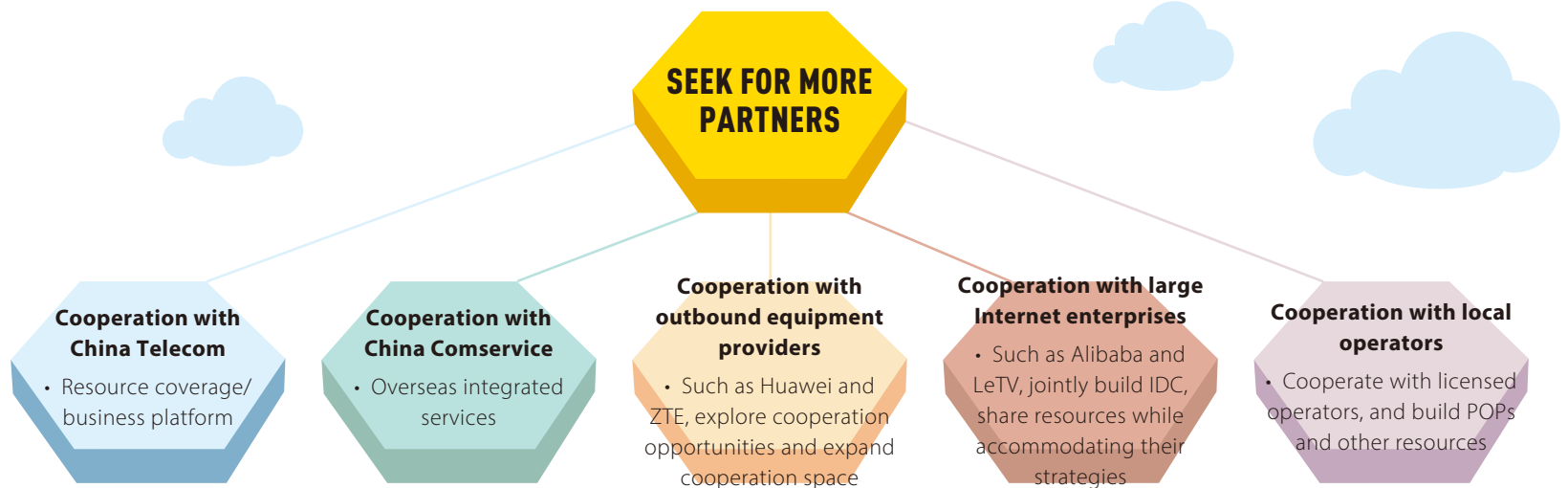
Unicom Global released CUniq-branded overseas multiple-numbers-in-one-card MVNO service in London, UK. After subscribing to the service outside China and selecting telephone numbers of UK, Hong Kong and Mainland China, users can enjoy shared voice services in China, UK and Hong Kong, shared data in 45 countries and regions, 24-hour Chinese-English bilingual customer service and inquiry service via online shop CUG Store.

Note: CUniq multiple-numbers-in-one-card service: CU refers to China Unicom, Uniq means unique (exclusive, quality and unique), i.e. one SIM card can carry three mobile numbers in UK, Hong Kong and Mainland China at the same time.

Carry out global business cooperation

Unicom Global has actively cooperated with global operators, and enhanced its own resources and abilities through developing cooperation organisations and joining cooperation alliances.

- It has developed good relationship with over 400 operators worldwide, promoted cooperation with Telefonica in South America, improved Brazil-Cameroon submarine cable network, and pushed forward Hong Kong-America new submarine cable cooperation.
- It has cooperated with over 200 overseas operators or communication groups on voice and data international roaming. China Unicom’s outbound LTE roaming connects with 132 operators, and inbound roaming connects with 147 operators.
- It has, jointly with China Telecom, promoted a new overseas expansion mode of “sharing, competition and cooperation”, and has made progress in various aspects such as joint negotiation with foreign parties on international roaming IOT, reduction in international roaming costs, joint construction of overseas POPs, and joint investment in cross-border land cables and international submarine cables.
- It has established global cooperation organisations for ICT, cloud service, CDN and other businesses, to promote cross-industry resource integration, achieve industrial cooperation and win-win, and push forward overseas business through industrial cooperation.
- It has joined global alliances in the fields of M2M and mobile services, so as to rapidly acquire global resources and capabilities.



Innovate international operation mechanism

The Company has made great efforts to push forward GAM mechanism, so as to transform from horizontal management to vertical management. As a result, GA customer satisfaction keeps improving, and the service is acknowledged and praised by customers including Telefonica, Vodafone, BT and AT&T.

Note: GA (Global Account) refers to a kind of large-scale customers with branches globally. GAM (Global Account Manager) is a customer sales service team particularly serving GA customers. GAM mechanism is an innovation in management model, which transforms the original horizontal management to vertical management. Through flattened, centralised and vertical and unified management by the head office, a global team is set up to take care of customer demands, projects and customer service management during the whole life cycle before, during and after sales, so as to improve operating efficiency.

Serve the development of the "Belt and Road Initiative"

China Unicom has accelerated its improvement of global network deployment and product system, emphasised improvement in global service ability, and actively participated in the "Belt and Road Initiative" development.

- China Unicom has accelerated the network coverage in areas along the "Belt and Road", participated in constructing AAE-1 (Asia-Africa-Europe -1) submarine cable system and SMW-5 submarine cable system to form double-route and double-system capacity in Europe-Middle East-Africa-Asia Pacific area, and improved the resources deficiency in Europe, South Asia and West Africa by taking advantage of the network strength of Ngwe Saung of Burma, Hong Kong and Shanghai.
- China Unicom has actively promoted Central Asia cross-border land cable project construction, so as to improve the network coverage on the Economic Belt of the Silk Road.
- China Unicom has greatly expanded operator customer base, and provided better product offerings and channels in areas along the "Belt and Road". In 2016, China Unicom developed 22 new operator clients in ASEAN, India and Russia and other "Belt and Road Initiative" countries, and achieved full operator business coverage in ten ASEAN countries.

China Unicom (Hong Kong) Global Centre came into operation in 2016. It is the largest data centre that China telecommunication operators have planned and built overseas. Moreover, it connects to domestic and international backbone networks, and is an international independent data centre, a global cloud service centre in Asia-Pacific and a service base for international financial customers. It will become the important hub for connecting the "Belt and Road Initiative" information infrastructure.

China Unicom (Hong Kong) Global Centre is located in Tseung Kwan O Industrial Park, a high-end data base of Hong Kong, with a site area of about 14,900m² and a construction area of about 37,000m². It has 4,000 cabinets, and adopts environment standards for international data centre construction and certification. Its service level reaches international Tier III standard.



China Unicom engaged in the construction of the international submarine cable in South Atlantic Ocean, and provided a landing station in Brazil. After the construction of the South Atlantic Ocean international submarine cable is completed, it will form China Unicom's global international communication network along with AAE-1 submarine cable, SME-5 submarine cable, New Central America and Asia-Pacific direct international cable, and provide infrastructure support to the implementation of China's "Belt and Road" strategy.

CARRY OUT PROPRIETARY RESEARCH AND DEVELOPMENT

Promote technological innovation

China Unicom is among the first batch of innovative enterprises recognised by the Ministry of Science and Technology, State-owned Assets Supervision and Administration Commission and All-China Federation of Trade Unions. It has always focused on technological innovation in its development, and has established strong technological innovation bases and sound technological innovation mechanism, and has launched into applications a series of technological innovation achievements.

Improve technological innovation system

The Technology Department of the Group takes charge of technology management, and is responsible for setting technology development strategy and network evolution plan for the Company. It centrally manages standards of communication technology, new technology development, and communication network resources. Research and development institutions include three main R&D bases, namely China Unicom Research Institute, Network Technology Research Institute and Software Research Institute, one post-doctoral workstation, as well as various professional subsidiaries and provincial branches such as the system integration company, the broadband online company, the cloud data company and Small Waugh Technology Co., Ltd.

China Unicom Post-doctoral Workstation has recruited and cultivated over 40 post-doctoral researchers up to now. In the comprehensive appraisal of post-doctoral work stations carried out by the Ministry of Human Resources and Social Security and National Post-doctor Regulatory Commission, China Unicom Post-doctoral Workstation is ranked “Excellent”, becoming the only “national level excellent” post-doctoral workstation in the communication industry.

China Unicom attached high importance to building up its IT talent pool. Currently, two experts recruited by “Recruitment Program of Global Experts” are working and conducting researches in relevant professional positions, and have made certain achievements in the fields of big data, cloud computing and wireless network, and have made their contributions to the promotion of technological business transformation of the Company and supporting sustainable and healthy development of enterprises.

In 2016, China Unicom revised six technological management measures including “Incentive Measures for Technological Innovation”, “Enterprise Standards Management Measures” and “Radio Frequency Management Measures”, to further standardise the workflow of technology management and stimulate vitality for technological innovation.

Apply technological innovation achievements

The “SIM-based and password-free one-point security certification system and scale application” is a convenient and secure certification service provided to mobile Internet users. It can effectively solve problems such as corporate information thefts and leakage of user privacy. Currently, the service has 2 million users. This project won the 2016 second prize of science and technology award granted by China Institute of Communications, and the GSMA Vision 2020 best innovation award of 2016 Mobile World Congress.

The project of “Research on Key Technology and Large-scale Application of TD-LTE and LTE FDD Integrated Networking” solved a number of key technical difficulties about TD-LTE and LTE FDD network application and deployment, proposed a systematic solution for integration of networks, and provided guidance for China Unicom to build the largest TD-LTE/LTE FDD integrated networking in the world.

Develop network in a looking-forward way

China Unicom, in line with technological development trend and business demands of the Company, has carried out technical research in a looking-forward way with priorities, and gradually drove forward technology pre-research, technical tests and pilot commercial use.

Research and develop 5G network

China Unicom has actively carried out R&D on 5G network architecture and relevant key technologies and services. We have cooperated with a number of manufacturers on equipment R&D, and participated in the formulation of 3GPP international standard, the promotion of national IMT-2020 and 5G frequency spectrum planning.

China Unicom has actively conducted SDN/NFV research, carried out tests and trial runs in different fields, and actively participated in activities of standard organisations and open-source organisations.

Promote IPv6

China Unicom has completed IPv6 upgrade in the China169 backbone, and has carried out four-star and five-star IDC machine room upgrade in pilot cities. As a result, 13 platforms including WO store and central music platform can support IPv6, and IPv6 upgrades in the backend support systems of Metropolitan Area Networks in pilot cities have been completed. LTE core network equipment can support IPv6, and small scale tests on existing networks have been conducted.

Make achievements in technology research

In 2016, China Unicom made arrangements to undertake 51 national technology research projects, including “New Generation Wireless Broadband Mobile Communication Network 03 Project” of MIIT, “863 Project” of the Ministry of Science and Technology, national key research and development plan, “New Materials R&D and Industrialisation Project” and “TD-LTE Project” of National Development and Reform Commission, involving such fields as 5G, cloud computing and big data, mobile Internet service and smart mobile terminals. China Unicom also took the lead to complete the national SDN/NFV industry alliance project, and displayed a series of important achievements such as 5G network structure, 5G air interface technology, 5G virtual base stations and 5G Internet of Things business applications at the 2016 Mobile World Congress.

Participate in standard formulation

China Unicom has actively participated in industrial standard revision to promote the development of communication industry. In 2016, China Unicom took the lead to prepare or participated in preparing 226 industrial standards in total. Four persons from China Unicom serve as TC Chairman/Vice Chairman and 18 persons serve as group leader/deputy group leader of China Communications Standards Association (CCSA). The Company has participated in standard tracing, research and meeting of 21 international standard organisations, submitted 614 articles on international standards, and led the development of 31 new standards (including 11 on ITU), co-led the development of 18 new standards (including 13 on ITU). In addition, the Company led the release of 19 standards (including 5 on ITU), and co-led the release of 14 standards (including 8 on ITU). Persons from China Unicom take various posts in important international organisations such as ITU-T, GSMA and ONOS. The Company has completed a series of standard deployment in certain standardisation fields such as carrier aggregation, user experience of smart terminals and cloud computing, and has been heavily involved in open-source community activities in emerging fields such as cloud computing, SDN and NFV. In 2016, China Unicom was granted over RMB 1 million of international and industrial subsidies for standards in total.

SUBMITTED
614 ARTICLES ON
INTERNATIONAL STANDARDS

TOOK THE
LEAD TO
RELEASE **19** STANDARDS,
INCLUDING **5** ON ITU

Attain achievements in patent applications

In 2016, China Unicom applied for 621 patents, of which 232 are granted. We also submitted 6 applications for international patents. Four projects of the Company obtained the second prize and four projects obtained the third prize of Science and Technology Award of China Institute of Communications. Four projects obtained the second prize and four projects obtained the third prize of Science and Technology Award of China Communications Standards Association. One project won the first prize and one won the third prize of Science and Technology Award of Chinese Institute of Electronics.

APPLIED FOR
621 PATENTS
GRANTED **232** PATENTS

DEEPEN CORPORATE REFORM

China Unicom has actively adapted itself to changes in environment and explored how to change the traditional operation mode through the application of Internet thinking and methods, so as to deepen the enterprise reform and address the issues concerning the vibrancy and momentum of development.

Promote mechanism reform

- China Unicom has set up a marketing system divided by channels under the overall market planning, strengthened professionalised sales, development and maintenance of different channels, unified the support to various channels and terminal operations, and optimised and adjusted relevant business processes.
- China Unicom has engaged in the reform to motivate junior responsible units, and build an “inverted triangle” service support system to transform management functions of the Group, provincial branches and municipal branches into service support, and thereby to promote the building of small CEO teams.
- China Unicom has made great effort to promote the reform for integrated operation and maintenance. We have streamlined levels and achieved vertically penetrating management. The head office has strengthened supervision over the overall network operation and production and operation ability. Provincial branches implement differentiated strategies in the south and the north with categorised development: the branches in the north are required to reduce management layers and provide comprehensive support and branches in the south are required to focus resources to provide key support in key areas for key businesses.
- China Unicom has improved the matching between the power and responsibilities in resources deployment, and strengthened efficiency-orientation. We emphasised precise and efficient resources investment. By considering objective variances such as different fields, different resource conditions and different operating capabilities, we focused resources to support network construction in key areas and substantially reduce investment.
- China Unicom has established a robust e-procurement system by means of informatisation, so as to exceed the limitations of traditional procurement functions and rebuild the material procurement management model.
- China Unicom has systematically pushed forward human resources reform, whereby labour costs allocations are associated with output levels, and a mechanism which links total wages and senior management wages with profit budget accomplishment has been improved. We have also innovatively established a comprehensive employee incentive system, sustainably pushed forward the “Internet + talent operation” mode, and deepened human resources structure adjustment, so as to optimise personnel allocation in innovative businesses and strengthen the building up of talent pools.

China Unicom Chongqing Branch has made the first move for employee ventures. It contracted out fixed-line network business to employees on a trial basis in Liangjiang New Zone, and experimented with independent operations by small CEOs. It has set up four teams, identified four small CEOs, and employees may make a two-way selection, achieving the transformation from “want me to do” to “I want to do”. After such contracting, the business development and employee remuneration were both improved substantially.

Accelerate downsizing

In line with the “business downsizing” planning of the State Council and SASAC, China Unicom has actively reduced its legal entity count, downsized its organisational institutions and functions of the head office, separated management function from production function, strengthened reasonable work division, and clarified responsibilities and powers so as to drive the formation of an efficient organisational management structure. We also strived to clean up “zombie enterprises”, accelerated liquidation, write-off and loss reduction, made great efforts to rectify enterprises facing great difficulties, and strived to revitalise existing real estate resources. In addition, the Company has started full separation and handover work for “water, electricity and gas supply and property management”, and actively promoted the reform of large collective entities sponsored by its plants.

Establish a list of powers

In order to simplify the approval process, scientifically deploy powers and resources and effectively prevent risks and loopholes, China Unicom has comprehensively reviewed, sorted, optimised and rectified existing rules and matters involving authorities, and has abolished, retained, revised and improved a batch of rules and systems. As a result, 32% of the rules were abolished or voided, and optimisation rates of head office approval processes and reporting processes were 39% and 30% respectively. The Company, leveraging the review, sorting and optimisation of rules, systems and list of powers, has established a top-down rules management mechanism which is beneficial to development, efficiency guarantee and risk prevention, as well as a management mechanism in respect of matters covered by the list of powers which serves the junior level in a standardised, transparent, streamlined and efficient way.



COOPERATIVE DEVELOPMENT TO ACHIEVE WIN-WIN

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COOPERATIVE DEVELOPMENT TO ACHIEVE WIN-WIN

Open cooperation is a driver to the development and growth of enterprises. China Unicom has always held an open mind and actively cooperated with partners to achieve mutual benefits and win-win. In 2016, China Unicom carried out in-depth cooperation and innovation with telecommunication operators, Internet enterprises and various parties in the industry chain, and achieved synergetic development, building a prosperous and co-existing industry ecosystem.

Measures adopted in 2016

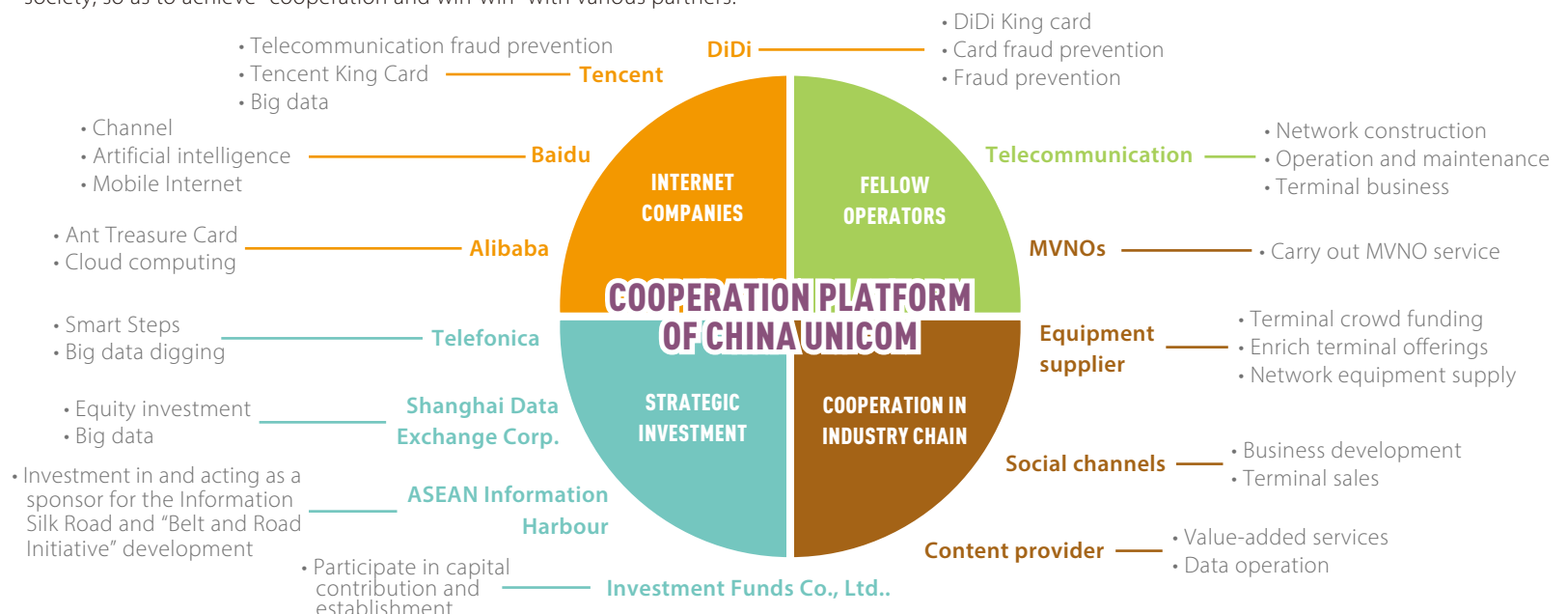
- Carried out in-depth cooperation with China Telecom in respect of resource sharing, mutual assistance during emergency, saving RMB3.3 billion in CAPEX and RMB350 million in OPEX; promoted “all network access” terminals as an industry standard;
- Carried out full cooperation with Internet enterprises such as DiDi, Baidu, Alibaba and Tencent in mobile Internet, artificial intelligence, big data and basic communication service, and launched products such as DiDi King Card, Tencent King Card and Ant Treasure Card;
- Promoted synergetic development of enterprises in the industry chain including equipment manufacturers, content providers, terminal suppliers, virtual operators and social channels; provided supporting services for industrial development; and procured enterprises in the industry chain to properly perform their social responsibilities;
- Explored capital cooperation in innovative businesses; invested in Shanghai Data Exchange Corp. and helped boost big data industry development in Shanghai; invested in and sponsored China-ASEAN Information Harbour Co., Ltd., and helped the development of the “Belt and Road Initiative”.

Actions in 2017

- Continue to drive the implementation of mobile Internet, transmission network, operation and maintenance cooperation with China Telecom, and improve the network abilities of both parties.
- Strengthen social cooperation, actively explore cooperative operation mode, expand network coverage and improve marketing ability;
- Strengthen cooperation in the industry chain, and conduct cooperation in aspects such as family terminals, STB, and Internet of Things terminals.
- Continue to actively explore business and capital cooperation in innovative businesses such as mobile Internet applications, mobile finance, big data, cloud computing, Internet of Things and Internet+.

ESTABLISH COOPERATIVE PLATFORM

In order to implement the development strategy of “focus, innovation and cooperation” and make new progress in “co-development, mutual benefits and win-win” under the background of “Internet+”, China Unicom cooperated with China Telecom, Internet companies, capital partners and enterprises in the industry chain to explore models of shared economy, cultivated industry ecosystems, and, through setting up information sharing platform, reduced communication costs, provided direct support to large-scale cooperation, promoted information exchange, resource sharing and healthy interaction, and shared with the entire society, so as to achieve “cooperation and win-win” with various partners.



In 2016, China Unicom for the first time integrated “Channel, Terminal and Application” meetings, and held a large scale conference of cooperation partners, which has greatly promoted comprehensive upgrade of 4G+ network and provided the industry with strong innovation impetus. Over 5000 persons from 1500 partner organisations attended the conference, and site visits reached 150,000 person-times, Internet broadcasts reached 100 million person-times. Altogether 51.63 million terminals were sold on site, with the amount of transaction reaching over RMB50 billion. The conference promulgated five programmes, including terminal star programme, user phone replacement programme, card slot operation programme, ten thousand chain stores programme and contents operation programme, as well as two white papers about video phone development and Internet film and TV, which received good responses and feedback from the industry chain. During the conference, China Unicom held high-level forums with Tencent, Baidu and Qualcomm, at which all parties had a discussion and preview of the comprehensive in-depth cooperation going forward. China Unicom will take this partner conference as an opportunity to gather industry strength, push forward technological innovation, build up a new cooperative and resources sharing landscape, and jointly promote the implementation of national information and communication strategies such as “network superpower” and the “Belt and Road Initiative”.



2016 China Unicom Partners Conference

PARTNER WITH FELLOW OPERATORS

In 2016, China Unicom continuously promoted the in-depth cooperation with China Telecom to comprehensively implement the “customer service quality upgrade plan”. In addition, the two companies built up a new industry development landscape by opening and sharing various resources including network, business and services, jointly propelled the structural reform on supply-side such as network and terminal, so as to reduce costs and increase efficiency, and improve operating efficiency of state-owned assets.



SAVED RMB
3.3 BILLION IN CAPEX

SAVED RMB
350 MILLION IN OPEX

Unified standards	Jointly released <i>Broadband Service White Paper</i> and <i>4K Intelligent STB White Paper</i>
Network construction	Jointly built 4G wireless networks, sharing 39,000 outdoor base stations, and 34,000 indoor buildings;
	Jointly built 16,000km of optical cable for transmission networks, 19,000km of pole lines and 2,700km of pipelines;
	Saved RMB3.3 billion in CAPEX and RMB350 million in OPEX.
Operation and maintenance	Cooperated in aspects such as mutual assistance during emergency, basic resource sharing, optimised mobile cooperation, network operation linkage, maintenance system linkage, sharing of existing base stations, spare supplies and parts sharing and mutual maintenance cooperation;
	Revamped 99 emergency base station vehicles, carried out 37 joint drills, jointly provided emergency support for 41 times, and conducted 9 joint emergency operations;
	Exchanged network optimisation test data in 31 provinces, and shared 32,908 items of existing base stations and indoor distribution system resources;
	Concluded cooperative agreements on spare parts in 8 provinces, and carried out maintenance cooperation in 9 provinces;
IDC business	The two parties will establish interconnection channels for IDC in ten main interconnection nodes in China, and optimise cross-network visits of IDC users of either party. We have already completed the formulation of the detailed technical implementation plan, and have commenced early trial runs in Beijing;
International network and business	The two parties signed a joint negotiation agreement with Telus Canada on international roaming;
	China Unicom purchased 500G international network bandwidth from China Telecom;
	China Unicom entered into a memorandum of understanding on optical cable resource exchange for domestic section of China-Kyrgyzstan optical cable;
	China Telecom invited China Unicom to join in the construction of HKA submarine cable, with the confirmation of the intention to cooperate in Singapore POP.
Terminal cooperation	Conducted studies on how to facilitate the terminal industry chain to accelerate the release of L900 and L800 terminal products.

China Unicom Jiangsu Branch and China Telecom Jiangsu Branch carried out in-depth cooperation in operation and maintenance.

- **Mutual assistance in emergency:** mutual cooperation and coordination for major disasters, emergencies and important events;
- **Basic resource sharing:** improvement in maintenance mechanism of shared resource to ensure proper maintenance of shared resources;
- **Optimised mobile cooperation:** push forward cooperation, exchange and sharing in maintenance and optimisation for jointly built LTE outdoor base stations and indoor coverage, and joint provision of satisfactory mobile network quality to users;
- **Network operation linkage:** work closely to implement connected operation of various specialised networks;
- **Operation and maintenance system linkage:** strengthen exchange and sharing of maintenance management experience and innovation, so as to jointly improve the overall maintenance level and customer service ability.

China Unicom Qinghai Branch signed strategic cooperation agreement with China Telecom Qinghai Branch to carry out in-depth cooperation in aspects such as mobile network construction and optimisation, maintenance service and pole line maintenance service. In 2016, in terms of 4G network construction, China Unicom Qinghai Branch shared the use of Qinghai Telecom’s 54 outdoor base stations and 16 indoor distribution buildings; and Qinghai Telecom shared the use of China Unicom Qinghai Branch’s 54 outdoor base stations and 32 indoor distribution buildings. As a result, China Unicom Qinghai Branch saved RMB70.48 million in network construction and maintenance in the year.

China Unicom Payment Co., Ltd. conducted in-depth cooperation with Bestpay Co. Ltd in aspects such as “opening up of resource capacity, joint construction and sharing of channels, and joint expansion of customer base”, so as to achieve the purpose of “maximum resource utilisation efficiency, rapid and healthy business development, and expanded user base”.

COOPERATE WITH INTERNET COMPANIES

China Unicom has actively explored cooperation with Internet companies, and has signed strategic cooperation agreements with Tencent, Baidu and Alibaba respectively. Each party can exploit its technology, resources and ecosystem advantages in the Internet industry, seize opportunities in the new round of technology revolution, and deepen cooperation to achieve win-win development on the basis of "mutual sharing of capacity, joint expansion and joint innovation". The parties also carry out in-depth cooperation in basic telecommunication service, mobile Internet and industrial Internet, so as to accelerate supply-side structural reform for mobile Internet.



China Unicom signed a strategic cooperation agreement with Baidu



China Unicom signed a strategic cooperation agreement with Alibaba



China Unicom signed a strategic cooperation agreement with Tencent

In 2016, China Unicom, in cooperation with other parties, launched DiDi King Card, Tencent King Card and Ant Treasure Card, which gained favourable social responses.



DiDi King Card: Tailor-made for DiDi drivers



Tencent King Card: with dedicated data



Ant Treasure Card: for Alipay users

DEVELOP INDUSTRY ECOSYSTEM

In the Internet era, communication and collaboration are essential for success. China Unicom has always held the belief of "cooperation, openness and win-win development", and has developed in a synergetic way with various parties in the industry, so as to provide proper support to the development of the industry and urge enterprises in the industry chain to properly perform their social responsibilities.

Promote industrial cooperation

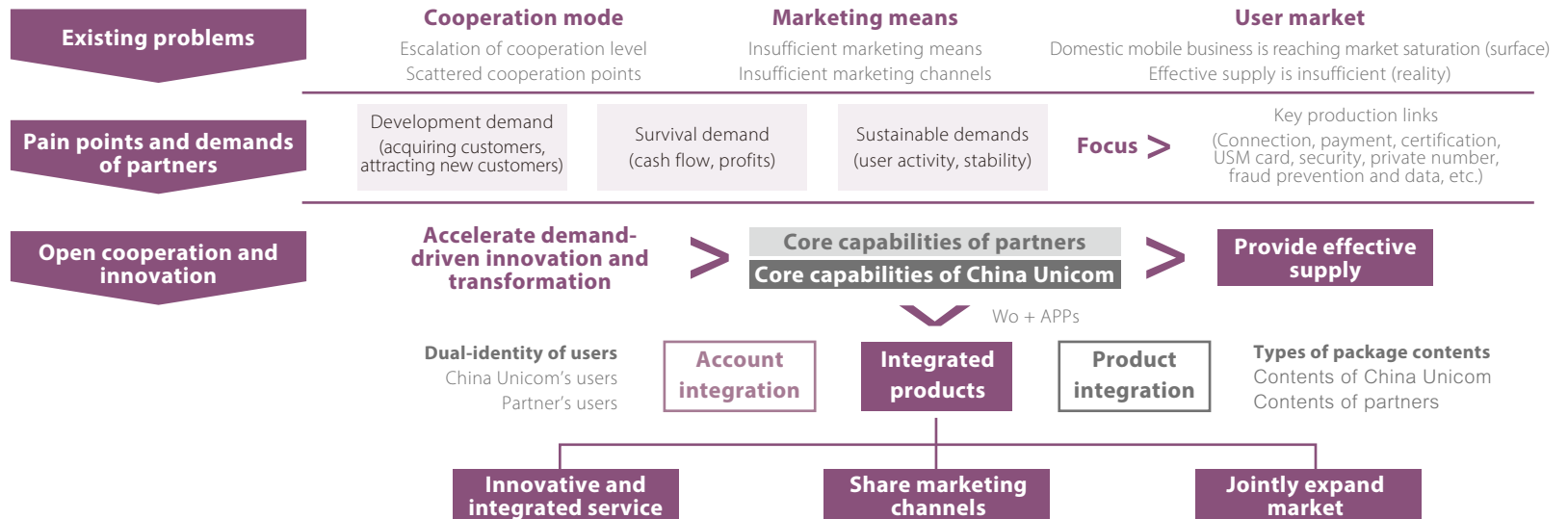
Cooperate with equipment suppliers

In 2016, China Unicom's self-service portal suppliers reached 960,000. In order to better cooperate with partners, China Unicom, holding the belief of "resource access through Internet" and "full collaboration in transactions", adopted various measures to promote cooperation progress.

- China Unicom has made great efforts to promote online procurement, and implemented open disclosure of procurement information, electronic tender and bid opening, and collaboration in electronic orders, so as to enable the procurement to be conducted in a more open and transparent way, and provide fair opportunities to suppliers. 100% of open tender information is available on "China Unicom Procurement and Tender Website" by category, and 70.4% of orders can be sent and received online. China Unicom head office and 28 provincial branches can conduct online tendering and bidding through electronic CA certification.
- The websites of China Procurement and Tender Website, MIIT's information platform for the management of telecommunication construction project tendering and bidding, and China Unicom Procurement and Tender Website has enabled open disclosure of procurement information, electronic exchange of procurement documents, coordination between e-orders and e-packing lists.
- China Unicom openly discloses procurement data to ensure transparent procurements. Through e-orders and e-packing lists, the Company has enhanced information communication and reduced trading costs. The one-point settlement mode of the Group enables integrated business management and highly efficient settlement.

Cooperate with content providers

SOLVE PAIN POINTS OF PARTNERS, AND ACTIVELY EXPLORE NEW MODES OF CROSS-SECTOR COOPERATION



Cooperate with MVNOs

China Unicom attaches importance to the MVNO pilot programme, and provides full network access service with a single connection to actively support the development of MVNO enterprises. For the MVNO business, aiming to boost operating capability, improve perception of MVNO enterprises and users, and prevent operating risks of MVNO business, the Company gave full play to the advantages of centralised operation integrating management, services and production, signed MVNO cooperation agreements with 29 enterprises, and carried out MVNO business in 188 prefectural-level cities of 29 provinces. In 2016, China Unicom's MVNO revenue reached RMB1.56 billion, and the number of MVNO users reached 31.69 million. The market share of China Unicom in MVNO market in China reached 73%, showing a favourable image of social responsibility and external open cooperation under the background of the national policy to open up China telecommunication industry to private capital.

Cooperate with social channels

China Unicom currently has 360,000 physical social channel partners. In order to promote cooperation, the Company continuously optimised its centralised channel management system to enable rapid and transparent payments of social channel commissions. It strengthened small and medium social channel terminal services, iteratively upgraded the Woego platform, reduced social channel financing costs, and launched on a trial basis security-free "WO Finance" Internet finance services for social channels.

Social cooperation for broadband

Expand external cooperation, push forward resource sharing with enterprises within or beyond the industry and jointly promote the development of the broadband market. In 2016, the Company actively cooperated with strong private broadband companies or "capable individuals" and signed strategic cooperation agreement with Dr. Peng Group to share each other's edges by penetrating into each other's product and channel resources.



China Unicom signed strategic cooperation agreement with Dr. Peng Group

China Unicom Guangxi Branch actively carried out social cooperation for development of its broadband business, and cooperated with small and medium enterprises and individual contractors to build broadband network. In 2016, Guangxi Branch signed contracts for more than 1,000 broadband projects by way of social cooperation, up by 2.7 times on a year-on-year basis; and jointly built 95,000 ports, up by 2.6 times on a year-on-year basis. China Unicom Jiangxi Jiujiang Branch added 16,542 broadband ports through social cooperation, and the network coverage in towns and rural areas doubled on a year-on-year basis.

Push forward industry responsibility fulfilment

China Unicom is committed to fulfilling social responsibilities together with partners of the industry chain. On top of enhancing its own responsibility performance capability, it urges partners to undertake social responsibilities by way of cooperation in industry chain and jointly creates a “responsible” industry landscape.

- The Company's self-service vendor portal for equipment procurement is connected with the website of China National Administration for Code Allocation to Organisations, and by verifying information through the interface, it is ensured that the registration information of the suppliers are authentic and accurate. The Company continues to promote green procurement system, and specifies the energy consumption standards and energy-saving requirements for equipment in the technical specifications for equipment procurement.
- Strengthen social responsibility guidance on content providers, and make sure that the value-added products provided to users are green, safe and healthy. The Company implements strict testing and examination process for product listings, carries out routine inspections, solves the problem immediately when it is detected, and traces responsibilities according to the contractual provisions. It has drawn up a negative list for business cooperation, regularly evaluates its partners, and screens out high-risk enterprises. The Company requires each provincial branch to strictly implement the *Measures for the Administration of Value-added Business*, and to provide responsible products.
- Consider after-sales service system and market performance when selecting terminal suppliers;
- Help MVNO enterprises implement real-name registration, strengthen online interception of junk SMSs, meet with non-compliant enterprises to discuss the rectification requirements, and offer different treatment with respect to development resources to enterprises failing to implement real-name registration.
- Regulate management of social channels strictly according to the Circular on *Preventing and Cracking down on Fraudulent Crimes Committed through Telecommunication Networks*. Coordinate to deploy real-name imaging equipment, terminate unqualified channels and those failing to strictly implement real-name registration verification. Enhance the black list management system of social channels and never allow channels on the black list to process network sign-ups and real-name registration procedures.

China Unicom Guangxi Branch conducted terminal evaluation by applying big data technology to guide the healthy development of the smart phone terminal industry. The terminal quality evaluation system is based on three dimensions, namely the network signal reception sensitivity, calling and data service performance of the terminals. Whole-network terminal quality indices are released every month. It carried out big data statistics for interaction data of popular Internet applications on smart terminal network, analysed matching capability of the terminal and Internet, and guided Internet companies to improve OTT product quality.



In order to further implement the requirements of the *Circular on Making Further Efforts to Prevent and Crack Down on Communication Information Fraud* released by MIIT, China Unicom Jiangxi Branch strengthened the management of agents for 400 business. It formulated 400 business management measures, strengthened monitoring of users' usage, perfected agents' deposit and penalty deduction mechanism, and implemented accountability and punishment system. It eliminated sublease and resale of 400 business in the entire province, strictly implemented account management and territorial management, and implemented “shutdown and suspension” (shut down non-real-name customers, zero-call customers, non-white-list customers developed by agents, and suspend new business development of all agents) of non-conforming 400 business numbers. A total number of 35,000 non-conforming 400 business numbers were deactivated, and 150 illegal fraudulent numbers for call forwarding were suspended.

EXPLORE CAPITAL COOPERATION

Guided by the Focus Strategy, the Company actively explored capital cooperation opportunities in innovative businesses, such as mobile Internet application, mobile finance, big data, cloud computing, Internet of Things and Internet+, etc. while taking into account market development and its business development needs.

- To accelerate development process of big data and promote development of “Internet+”, the Company participated in big data industrial development in Shanghai through equity investment to explore new business models for overall monetisation of big data.
- In order to create information platform serving ASEAN and provide advanced, high-speed and reliable communication information infrastructure and abundant Internet and industrial application for various enterprises stationed in the information harbour, the Company participated in founding China-ASEAN Information Harbour Co., Ltd. to promote the establishment of an even closer relationship between China and ASEAN countries.



GREEN AND ENVIRONMENTAL-FRIENDLY DEVELOPMENT

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GREEN AND ENVIRONMENTAL-FRIENDLY DEVELOPMENT

Green development is the cornerstone to build a “beautiful China”. China Unicom views environmental protection and green low-carbon initiatives as important step in our corporate development with an aim to build an environmental-friendly enterprise. In 2016, we continued our efforts to build green network, advance green operation, strengthen green management, implement energy conservation and emission reduction, and carry out green charitable campaigns to promote green philosophies, thus contributing to the coordinated development of economy, society and nature.

Measures adopted in 2016

- Designated RMB200 million for energy-saving and emission reduction, mainly used in energy-saving renovation and application of energy-saving technology; the coverage rate of energy-saving technology in the access network room and communication room reached 64% and 72%, respectively.
- Special projects including strengthening energy-saving management, promoting network downsizing and optical fibre reconstruction; carrying out publicity campaigns on energy-saving and emission reduction, to realise ceaseless reduction of energy consumption for unit information flow.
- Implemented green actions, built haze-detection network, launched “mobile phone trade-in” service, and pushed forward green transportation.

Actions in 2017

- Further strengthen energy-saving management, promote energy-saving technology, carry out publicity campaign of energy-saving, enhance cyclic utilisation of materials, deepen co-build and co-share with associated companies, and promote harmonious coexistence between the Company and the environment.
- Further deepen the integration of green concepts into operation and production, and extensively carry out green practices.

Upholding the philosophy of green “information life”, China Unicom endeavored to cut down on energy consumption in its operation, reduce greenhouse gas emissions and enhance sewage and waste emission management in an effort to minimise its impact on the environment. The Company strengthened management on energy conservation and emission reduction and infiltrated such practices into its various operations ranging from equipment procurement to engineering, equipment maintenance, marketing and administration. By setting up and improving the energy conservation and emission reduction management framework, including encompassing system and standards, statistic indicators, appraisal and incentives, energy-saving technology and organisational structure, it would ensure effective implementation of the standards for energy saving and emission reduction. In 2016, the Company designated about RMB200 million for energy-saving and emission reduction, mainly used in energy-saving renovation and application of energy-saving technology. The coverage rate of energy-saving technology in the access network room and communication room reached 64% and 72%, respectively. Through other special programmes such as network optimisation, fibre network upgrade, as well as carrying out publicity campaigns on energy-saving and emission reduction, the Company saved energy equivalent to 156,500 tonnes of standard coal during the year.

COVERAGE RATE OF
ENERGY-SAVING
TECHNOLOGY IN
ACCESS NETWORK ROOM

64%

COVERAGE RATE OF
ENERGY-SAVING
TECHNOLOGY IN
COMMUNICATION ROOM

72%

China Unicom Head Office Building realised reutilisation of reclaimed water, producing about 800m³ of reclaimed water every year. By water balance measurement, the Company met as a qualified water-saving company, recognised rainwater-sewage separation and obtained the License for the Discharge of Urban Sewage into the Drainage Network.

BUILD GREEN NETWORK

Insist on green procurement

The Company actively promotes the procurement of energy-saving and emission reduction equipment, and implements green and safe procurement in terms of equipment model selection; specifies clearly on energy consumption standards and energy-saving requirements for equipment, and takes energy consumption, energy-saving product certification and radiation indicator of equipment as important procurement indicators for evaluation; promotes centralised procurement of efficient and energy-saving equipment. In 2016, the Company completed group procurement of energy-saving air conditioning system with direct current system, efficient module and intelligent double-circulation, which will safeguard the implementation of subsequent energy-saving construction plan.

Energy-saving technology application

The Company runs existing network tests on three new energy-saving technologies, including 336V high voltage direct current system, high magnification discharge battery, and aluminum alloy cable. The “AC main power supply +336V high voltage direct current” power supply mode is used to verify the energy-saving effect of the new two-circuit power supply mode; high magnification discharge battery is used to verify the high current discharge performance of new battery and the effect of battery with low configuration; aluminum alloy cable is to verify the performance of new cable and evaluate its effects under environment and construction requirements, as well as the cost-saving effects for the investment.

Note: Currently the amounts of hazardous waste discharge, non-hazardous waste discharge and the total amount of packaging materials used in manufactured products have not been calculated and we will establish a statistical system for such data as soon as possible.

In order to solve issues such as enhanced integration of main equipment, ceaselessly increased single cabinet power and high energy consumption of traditional operation room, idea of constructing energy-saving machine room is proposed. From customisation, modularisation, zoning and other perspectives, this proposal achieved air distribution optimisation in machine room and modularisation construction of machine room, carrying out the research and standardisation of green mode construction of machine room and pushed forward main equipment standardisation, as well as completed the standards for the air distribution specifications and size of the main equipment.

Green data center

- Hohhot Data Center was awarded as advanced energy-saving technological innovation company in the telecom industry for two consecutive years;
- Langfang Data Center was awarded as advanced energy-saving technological innovation company in the telecom industry for two consecutive years; acquired AAAA grade certificate of data center green energy conservation demonstration project; and won the qualification of China green data center pilot unit which was jointly issued by MIIT, National Government Offices Administration and National Energy Administration;
- Gui'an Data Center was awarded the qualification of China green data center pilot unit.

Implement co-building and co-sharing

Actively fulfilling the requirements of the State to promote construction of ecological civilisation, the Company carefully implements the yearly guideline of MIIT and NDRC "Opinions on Implementation of Telecommunication Infrastructure Co-Building and Co-Sharing", and deepens cooperation among enterprises in construction fields of pole line, pipeline and indoor distribution system, reducing repeated construction and strengthening resource sharing. In 2016, the Company cooperated with China Tower and built 160,000 base stations and saved RMB11.5 billion of investment.

Responsible performance indicator	2014	2015	2016
Co-building rate of indoor distribution system (%)	64.56	69.07	73
Co-sharing rate of indoor distribution system (%)	98.19	94.66	63
Pole line co-building rate (%)	71.46	67.76	85
Pole line co-sharing rate (%)	94.79	94.16	92
Pipeline co-building rate (%)	83.90	82.17	85
Pipeline co-sharing rate (%)	92.55	92.23	86

Electromagnetic radiation management

The Company strengthens application of new technology, and adopts such advanced technical means such as Micro BS in densely populated cities as to optimise the layout of wireless network, making the electromagnetic radiation indicators of base stations being better than national standards. During the construction process of the base stations, the Company performed assessment on electromagnetic environmental impact, as well as testing on acceptance upon completion of the base stations, and conscientiously accepted supervision, administration and inspection of environmental protection departments, in accordance with the relevant national requirements of the *Measures on the Management of Electromagnetic Radiation Environmental Protection*.

By bringing new media platform into full play and actively publicise electromagnetic radiation knowledge, telecommunication knowledge has been popularised by continuously collaborate with governmental agencies and public-welfare organisations; Through collaboration with multi-parties and active communication, as well as introducing the public to learn the correct electromagnetic radiation influence of base stations, public doubts and misunderstanding are eliminated through on-site demonstration, field inspection and testing, and popularisation of base station equipment and telecommunication knowledge.

China Unicom Guangxi Branch strengthened the management of electromagnetic radiation, and minimised the impact of battery radiation in the following five aspects:

- Purchase equipment according to the frequency scope and rated power output as required in national regulations, and change to low radiation equipment when proper;
- Adopt advanced technical means to optimise layout of wireless network and make electromagnetic radiation indicators better than national standards;
- Avoid kindergartens and primary schools when selecting the site of base station, and communicate with nearby companies and residents to seek for understanding and support on a regular basis;
- Evaluate environmental impact of base station, disclose relevant reports in a timely manner and accept public supervision;
- Conduct activities to popularise knowledge of electromagnetic radiation, and offer professional explanation and carry out on-site inspection on radiation at base stations to eliminate public doubts;

In 2016, over 14,000 base stations passed the environmental impact assessment carried out by professional environmental administrations such as the Environmental Protection Bureau and the Radiation Environment Supervision and Management Station.

PROMOTE GREEN OPERATION

China Unicom continuously carries out green operation. In 2016, it designated approximately RMB200 million to conduct special projects for energy conservation in technology and management, streamlined network and machine room integration, effectively reduced energy consumption in the network.

Promote energy conservation technology

- The Company promoted new technical application such as high-frequency UPS and efficient module for switch power supply, improving operating efficiency of power supply by 4-5%. The promotion of equipment application such as the smart double-circulation air conditioner and others have reduced the energy consumption in air conditioning by 20%; The inspection on power supply switch in the entire network and UPS configuration, and the closure of over-configured module for switch power supply and UPS equipment, both improved system efficiency by 2%;
- Based on the characteristic of different indoor phone traffic at different time periods, the "time controller" is installed on the indoor distribution equipment targeting in office buildings, stations, large-scale supermarkets, shopping malls and shopping areas. From 10:00pm-6:00am in which there is almost no phone traffic in the aforementioned places, the "time controller" would reduce power supply by periods and achieves the purpose of energy conservation and consumption reduction. For double-frequency high configuration stations and high configuration 3G network base stations, there will be automatic reduction during night time when there is low phone traffic and automatic start-up in the morning.

China Unicom Jiangxi Branch strengthened management and technical innovation to promote energy conservation and emission reduction with the focus in the large energy-consumed core machine room and basic station. The first measure is to set up theoretical benchmark for basic electricity consumption, and analyze the difference between actual electricity consumption with the benchmark every month to find out the problems; the second is to install power supply time controller in indoor distribution equipment, and turn the power off during 0:00am-6:00am every day to accomplish energy conservation; the third is to adopt underground power storage for outdoor (ground) base stations, which not only to serve to theft-proof, but also to extend the service life of the power storage. Furthermore, unfolding the waste power storage and replacing the old with the new ones would replenish approximately RMB1.6 million worth of power storage, which helped reducing environmental pollution.

China Unicom Zhejiang Taizhou Branch implemented frequency band and capacity reduction of 2G/3G networks, removing old equipment from the fixed network; independently researched and developed base station air conditioning controller to automatically turn on/off power of the air conditioning according to temperature change in the machine room of base stations; automatically reduced configuration during night idle hours and started up in the morning for macro cellular base stations with extremely low phone traffic; eliminated old electrical equipment in complex buildings, and used energy-saving air conditioning and lighting. During the year, the Company saved a total of 3.987 million KWH of electricity, which is equivalent to 1,610.75 tons of standard coal, and reduced 3,975.04 tons of CO₂ emission.

Implement energy conservation management

- Set up benchmark value of electricity consumption for machine rooms where various types of base stations, indoor distribution systems and access sites are located. By benchmarking, the difference between electricity consumption in machine room of similar type and the benchmark value could be less than 10%, as to eradicate issues arising out of evaporation, emission, dripping or leakage;
- Implement list-based PUE management and control for communication machine room while setting up historical account, and gradually reduce PUE value at machine room by measures such as reasonably increasing pre-set temperature of air conditioning at communication machine room, switching off redundancy equipment, and saving electricity of lighting;
- Actively negotiate with China Tower to adopt lump-sum charging of China Tower bills.

China Unicom Jiangsu Branch strengthened electricity bill management, especially focused on analyzing and finding out the issues for base station and machine rooms with abnormal difference between actual electricity consumption and theoretical electricity volume. Through over one year of efforts, the phenomenon of “evaporation, emission, dripping or leakage” associated with electricity at base stations is significantly reduced.

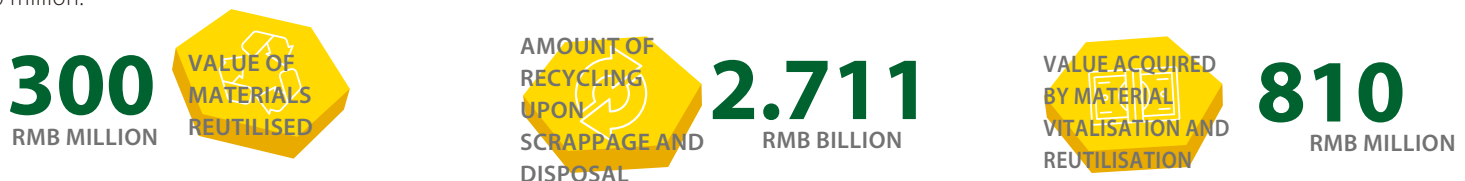
Promote streamlined network

- The Company promoted frequency band and capacity reduction of 2G/3G networks, and pushed forward SDR base station to replace old 2G equipment by evaluating energy consumption, continuously urge withdrawal from fixed network of old equipment with high failure rate and high energy consumption; during the year, a total of 18,556 base stations are closed, 28,694 SDR base stations are newly added, saving energy conservation cost of over RMB200 million.
- The integration of station and machine room location for optical fibre reconstruction is carried out; a total of 1,311 stations and 5,705 machine rooms are integrated, which in turn, vacate an area of 375,000m² for machine room, and save electricity of RMB196 million per year.

China Unicom Yunnan Branch greatly downsized network. In 2016, 531 base stations withdrew from the network and reduced energy consumption of 279,000W; 77 utilised old 2G base stations withdrew from the network and reduced repeated investment costs in network; special project of ES energy-saving aiming at 4G network was carried out, with an average daily electricity conservation of 7,102KWH; business platform downsizing plan was carried out, and removed 118 sets of equipment, released 17 cabinets of machine room space, and reduced 13.79kW energy consumption. Since 2013, China Unicom Yunnan Branch has been rewarded corporate income tax exemption of a total of RMB1.23 million by energy conservation and emission reduction projects for three consecutive years.

Cyclic utilisation of materials

In 2016, the Company ceaselessly improved material vitalisation and reutilisation rate. During the year, the value of materials it reutilised reached RMB300 million, its amount of recycling upon scrappage and disposal reached RMB2.711 billion, and the value acquired by material vitalisation and reutilisation reached RMB810 million.



Popularise paperless handling

Online paperless handling system was launched nationwide, realising automatic ID card information reading and preservation by taking photos while users can put down electronic signature on handwriting panel to create e-handling form. The paperless handling saves large amount of paper, consumables, printing, and inventory management costs, shortens handling time and users' time for queuing, and realises automatic generation of accounts, electronic audit and electronic retrieval, enhances work efficiency and reduces errors.

CARRY OUT GREEN ACTIONS

China Unicom upholds on the philosophy of “low-carbon communication and green development”, and takes environmental protection and the construction of “beautiful China” as its own responsibility, actively takes green actions, promotes green ideas and boosts green social development; it ceaselessly publicises and promotes green lifestyle, such as mobile phone recycling and battery disposal, in a way to popularise knowledge and to increase public awareness in environmental protection.

To avoid environmental impact posed by old mobile phones, China Unicom carried out activities for trade-in old mobile phone terminal for new one, and launched mobile phone recycling action with various phone recycling companies at the China Unicom stores; when conducting assessment, the process was open and transparent, effectively protecting users’ information; when conducting technical process, the cooperative recycling companies extracted rare and precious metals by chlorination-free hydrometallurgical technology, and achieved innocuous treatment and cyclic utilisation. China Unicom, by virtue of smooth mobile phone recycling chain of the recycling companies, promoted cyclic utilisation, reduced heavy metal pollution from electronic waste, and created environmental protection value while benefiting the users.

In order to support weather detection work in Beijing Municipality, China Unicom Beijing Branch built haze detection network using extensive station and transmission network, together with network construction experience to build 4G haze detection network integrating all points and aspects; it has built a total of 4,000 collection points, collecting weather data and information via the perception layer, and sent to central server of Beijing Meteorological Service every 5 minutes after data transmission and reshaping. After the haze monitoring network is deployed and promoted, it has brought positive impact on the society, and enhanced the precaution awareness of citizens. Beijing Meteorological Service improved release timeliness of air quality index, which significantly enhanced haze prevention and treatment capability of the entire society.

China Unicom Fujian Fuzhou Branch conducted youth networking activity themed as “volunteering for public welfare together”. Over 60 youth league members passionately participated in tree planting activity and made contribution to green environment and air purification.



China Unicom Anhui Ma’anshan Branch conducted the “Learning from Lei Feng” voluntary tree planting activity. With clear division of labour and high efficiency, employees enthusiastically participated in the activity by digging holes, planting trees and filling soil. After two hours of work, rows and rows of newly-planted trees were waving in the wind and greeting the passer-by.



China Unicom Guangdong Zhuhai Branch actively built communication and transmission network for public bike system, and helped realising “green transportation” for Zhuhai citizens. From 2013 to 2016, Zhuhai Branch set up the bike rental system project in three phases and provided communication services. It provided VPN dedicated communication service to a total of 595 stations, and put 13,000 public bikes to the mass.

Analysis and statistics of energy conservation and emission reduction

Based on bus-taking for short distance

Directly saved RMB2.36 million expenses for citizens in November 2016

Based on traffic distribution at intersection for transportation by private cars

Reduced about 7,072 private cars on road daily in November 2016, i.e. 707 vehicles/day per intersection

Based on gasoline and carbon emission for transportation by private cars

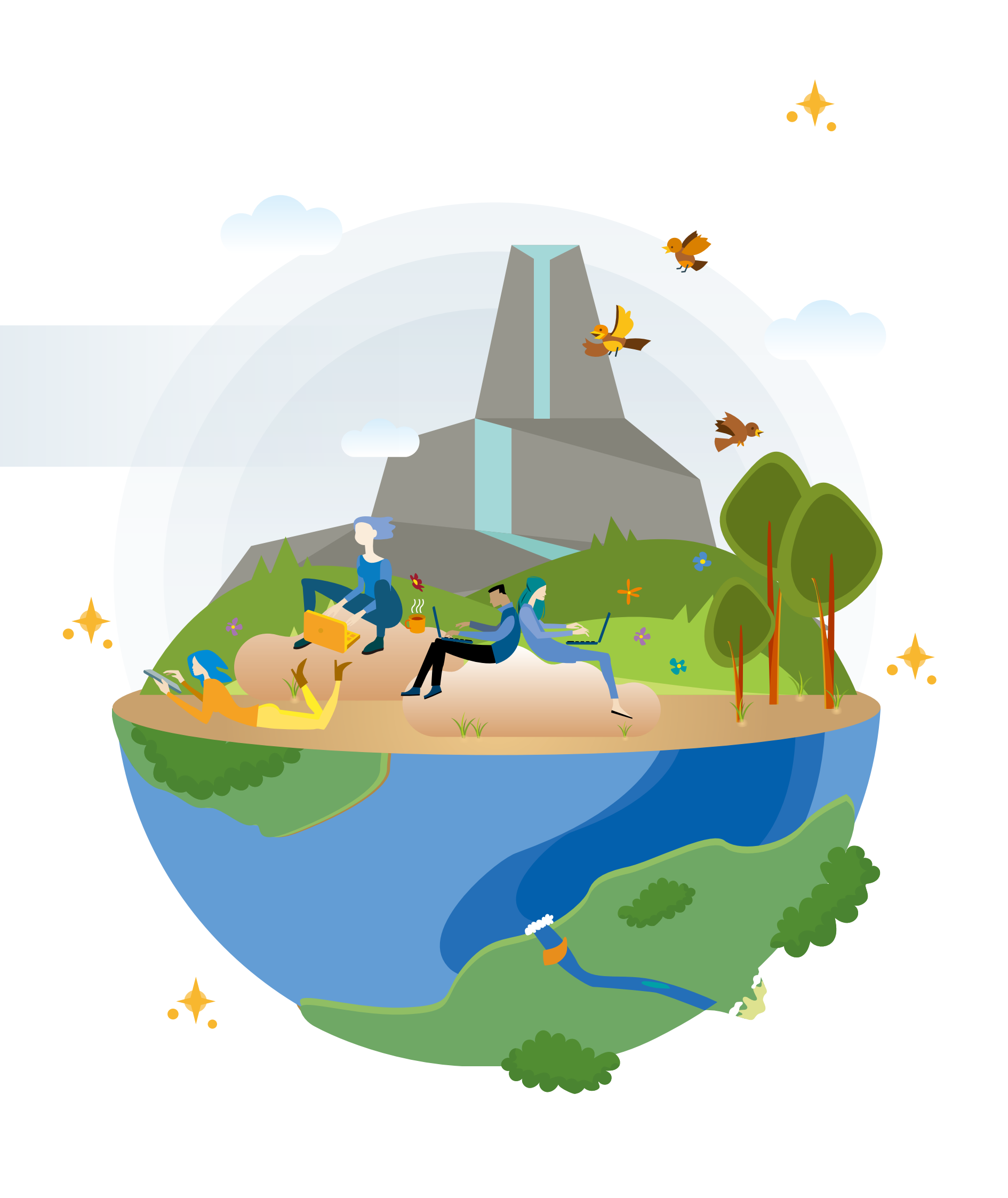
Saved about 250,000 liters of gasoline and reduced about 160 tons of carbon emission in November 2016



HARMONIOUS DEVELOPMENT AND SHARING SUCCESS WITH SOCIETY

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HARMONIOUS DEVELOPMENT AND SHARING SUCCESS WITH SOCIETY

Sharing is the starting point and destination of our five development philosophies. With a commitment to pushing beyond its growth boundaries through the philosophy of sharing, China Unicom shares the outcomes of corporate growth with employees and the society so as to jointly build a harmonious enterprise and contribute to its growth. In 2016, the Company, adhering to the people-oriented principle, took initiatives to safeguard employee interests, care for employee growth and encourage them to participate in management with a view to build harmonious labour relations. The Company supported the construction of a harmonious society through a wide range of concrete actions, including voluntary participation in social welfare undertakings, support to western development, continuously efforts of targeted poverty alleviation to eliminate the digital divide and active engagement in local community development.

Measures adopted in 2016

- Actively undertook pilots of general service, helped the development of western region, strengthened network coverage and service channel construction in remote areas; finished broadband construction in 4,489 administrative villages and built 620,000 ports in 2016.
- Carried out featured services for farmers, ethnic minorities and the disabled, thoroughly deepened assistance for Tibet and targeted poverty alleviation, and strived to minify regional development gap and digital divide.
- Comprehensively implemented promotion and incentive system and 24% of all employees got their ranks promoted; implemented corporate pension plan in 31 provincial branches and 13 subsidiaries.
- Built strategic talent team, and cultivated more than 550 backbone talents, over 1,100 young and competitive talents, among whom 382 entered into overseas talent pool.
- Provided 16 sessions of leadership seminar, 259 sessions of professional skills training, developed and introduced 27 digital courses, and organised 513 skill competitions and knowledge contests.
- Practically pushed forward worker's union system, and motivated current employees to leave messages to General Manager.
- Pushed forward localisation of equipment procurement and employee recruitment, earnestly participated in public welfare volunteering activities, and carried out responsible investment.

Actions in 2017

- Strive to push forward the coordinated development in the western region and in the rural areas, and providing more convenient and high-speed information services.
- Pay attention to special groups of people, push forward the implementation of Tibet assistance project, implement targeted poverty alleviation, and share the achievements of information development with people in underdeveloped region and with vulnerable groups of people.
- Perfect market-oriented system of internal distribution of compensation, push forward the implementation of comprehensive employee incentive system in branches and subsidiaries to better reflect the returns to be acquired by employees from the Company.
- Build two talent teams of potential backup management talents and professional strategic talents, and set up potential talent pool of different specialties and levels.
- Strive to strengthen training in key fields and for key professional talents, and help to enhance employee value.
- Extensively and thoroughly carry out the action of "building employees' home", implement the "employee caring project", unify and mobilise employees to contribute to the development of the Company, and practically and efficiently provide assistance to employees.
- Promote overseas institutions to actively engage in local communities, and push forward the construction of a harmonious society.

REDUCE DIGITAL DIVIDE

Help the development of western region

China Unicom actively responds to the "Western Region Development Strategy" of China, implements "The 13th Five-year Plan" for Development of Western Region, and promotes regional coordinative development.

Favourable business policy

In mobile business, China Unicom staffed exclusive and targeted market service managers at branches in the western provinces to take charge of business report and optimisation in those provinces, and offered special approval to business needs proposed by western provincial branches; Some western provincial branches are allowed to offer best data package products to ensure that users in western region can afford data services carefree; Discount products such as targeted data package, holiday data package, idle hours data package and night-time data package are launched according to special needs of users in the western region.

In fixed line business, China Unicom accelerated speed of transformation of fibre optic broadband, speeding up services for users with bandwidth lower than 10M, and lowered the price of broadband products of 20Mbps, 50Mbps and 100Mbps, while speeding up service for copper cable user from below 4Mbps to 4Mbps or higher for free.

Investment in network construction

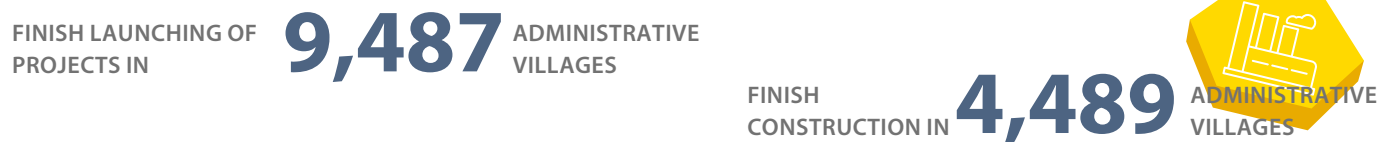
In 2016, China Unicom continued to strengthen telecommunication network infrastructure construction in western region, and completed a RMB12 billion investment in fixed asset; the Company preliminarily realised continuous coverage of 4G network in cities, counties, towns and administrative villages with population aggregation; the proportion of ports at 20M or above in cities reached 82%, and ports at 8M or above in rural areas reached 99%. China Unicom built two large-scale data centers in Hohhot and Gui'an, two cloud computing resource pools in Guangxi and Ningxia, and expanded three cloud computing resource pools in Inner Mongolia, Shaanxi and Chongqing.

Benefit remote areas

China Unicom actively provides general communication services in rural and remote areas, and allows more farmers to use the Internet by expanding effective coverage of fibre optic broadband network and 4G network in rural areas so as to help poverty alleviation.

Strengthen network coverage

China Unicom actively participated in the pilot work of telecommunication general service in 2016, and undertook broadband access tasks for 12,146 administrative villages in 17 provinces with a total investment of RMB1.7 billion; it finished launching of projects in 9,487 administrative villages, finished construction in 4,489 administrative villages and built 620,000 ports.



China Unicom Guizhou Branch echoed to the requirements of national broadband strategy and targeted poverty alleviation, and undertook broadband construction projects for general communication service in Guiyang and Anshun. In Guiyang, 48 administrative villages were newly built broadband and 223 administrative villages were upgraded broadband; whereas in Anshun, 199 administrative villages were newly built broadband and 205 administrative villages were upgraded broadband.

Build service channels

As of end of 2016, the number of self-owned stores below county-level reached 13,300, of which 10,200 are township stores, accounting for 49%, basically achieved one store in one town in Northern China. The number of channels in rural and remote poverty-stricken areas reached 260,000.

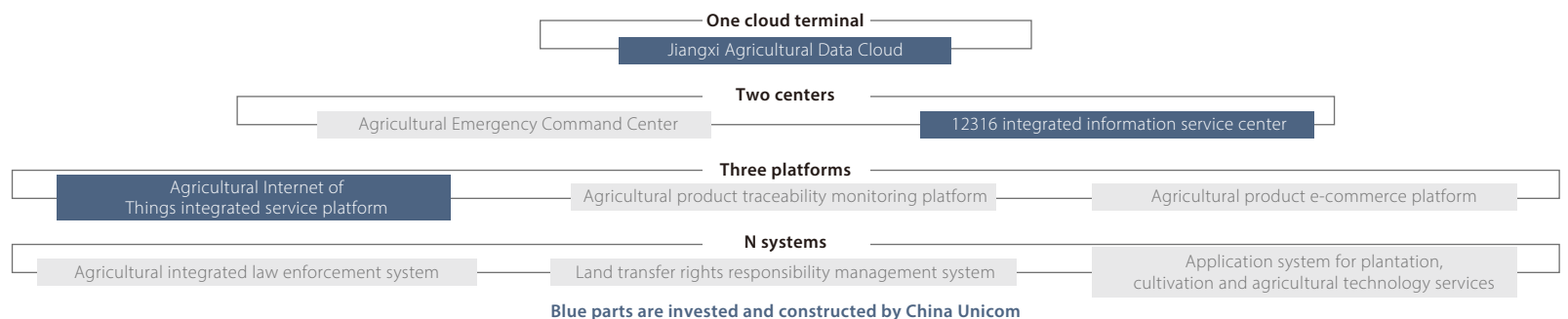


Discount tariff packages

Local branches of various regions launched hometown card and Spring Festival card to meet the communication needs of farmers and migrant workers while they work in cities and return home; various combined packages were launched for various consumer groups to enjoy 4G high speed Internet service with lower communication costs, benefiting various special groups in the society brought by technology advancement.

Develop agricultural informatisation application

China Unicom rolled out a series of informatisation achievements in three agricultural information bases in Jiangxi, Shaanxi and Henan Province. One cloud, two centers and three platforms of smart agriculture built in the Jiangxi Base have all been launched; Shaanxi Base completed construction of Shaanxi Agricultural Data Service Platform, Targeted Agricultural Production Platform and Farmer-benefited Information Platform, and implemented 14 agricultural informatisation projects; Henan Base designed and developed “Henan Agricultural Products Traceability Platform” and “Henan E-commerce in Rural Area”, which are highly recognised by experts from Henan Provincial Academy of Agricultural Sciences and leaders of Henan Provincial Department of Agriculture.



China Unicom Liaoning Branch strived to push forward “Internet+ rural area” construction, invested over RMB3 million to build province-wide e-commerce access platform in rural areas, and invested RMB2.7 million to build three-level service outlets, namely county, township and village, and three-level logistics outlets in Qingyuan county for rural e-commerce operators so that people in rural areas can enjoy the convenience of online shopping. On one hand, quality commodities can be bought at low price to reduce living and production costs of farmers; on the other hand, quality and sideline agricultural products can be sold to increase the incomes of farmers.

China Unicom Shandong Branch launched the first “Beautiful Village” integrated information service platform in Shandong Province, which includes four segments and over 160 functions, covering five-level organisations of province, city, county, township and village. The platform serves entry-level government staff, grower/breeding farmers in rural areas, and village-run enterprises, and features the functions of administrative management, information consulting, e-commerce, and leisure and entertainment. For users using the “Beautiful Village” app, China Unicom Shandong Branch also launched high data flow and low price products for users to participate in activities such as trade-in old for new smartphone with RMB1,000, as well as purchase mobile phone with a discount. The number of registered users of “Beautiful Village” has already exceeded 100,000.

Serve special groups of people

China Unicom has always been concerned about the communication needs of ethnic minorities and the disabled, and strives to offer lower pricing and more handy services to bring benefits and convenience to them.

Serve ethnic minorities

Exclusive informatisation service product “WO•Deji” is launched for people in Tibetan area in Qinghai, and customised the first Tibetan 4G mobile terminal in Qinghai to solve language and wording issues which restricted Tibetan users from enjoying mobile Internet services. In addition, China Unicom Qinghai Branch adds customer service personnel speaking Tibetan, and records Tibetan self-service guiding system to provide business consulting and handling services to Tibetan users. The self-service of the special Tibetan hotline has been used over 100,000 times on average per month, and hotline satisfaction improved 5PP compared to the beginning of the year.

China Unicom Xinjiang Branch launched dedicated smart phone for “Xinhua News Service Uyghur News Customer Terminal”. The most prominent characteristic of the terminal is the ability to convert to voice-reading mode by one click, so that ethnic minorities who cannot read Uyghur words would be able to easily understand various kind of information. “WO•Qiaxiu” is launched dedicated for Kazakhstan minorities, so as to bring benefits and convenience to Kazakhstan minorities through lower pricing, and thus pushing forward ethnic informatisation development.

Mongolian smart phone is launched in Inner Mongolia, and the left vertical Mongolian typesetting mode and people-benefiting price are well accepted by herdsmen. Information including abundant farmer-benefited and herd-benefited policies, as well as market demand, venture and employment, and weather services, all have brought more convenience to the production and life of the grassroots farmers and herdsmen.

Serve the disabled

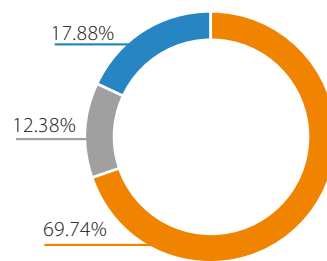
- Set disabled-only customer service counter in store, and open dedicated fast track for the disabled;
- Waive the one-off costs for the disabled, introduce annual broadband discount package, and provide broadband expert service and others;
- Some provincial branches launched “Love Card” package to provide discount for voice and SMS services to persons with visual, hearing, speech and language impairment; Meanwhile, the costs of the Love Card will be waived, as home delivery services will be provided for the disabled users.

China Unicom Shanghai Branch provides fixed line voice discount for people with visual impairment. People above 16 years old with visual impairment can enjoy 810 times (first three minutes counted as twice, and each minute thereafter will be counted as once for each calling) fixed line local voice services by paying a fixed monthly fee of RMB25.

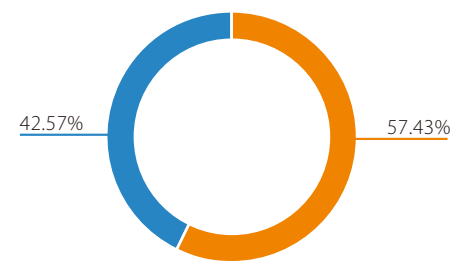
China Unicom Fuzhou Branch launches discount package and caring services to the disabled in the entire city. It provides discount package to over 20,000 deaf-mutes, organises full-time team members to carry out field service in municipal Disabled Persons’ Federation on weekends, and invites sign-language teachers to help communication. Currently, it has carried out seven performances and served over 300 deaf-mutes. This was highly recognised by Fuzhou Disabled Persons’ Federation and the disabled. Chairman of Fuzhou Disabled Persons’ Federation said that, “China Unicom Fuzhou Branch not only generously responded to the call of government to care the disabled, but also provided discount package to the disabled. Such caring acts deeply touched us, and showed China Unicom’s great practice of social responsibilities”.

ENHANCE EMPLOYEE VALUE

China Unicom makes it a principle to put its employees first, earnestly safeguards its employees’ rights and interests, and promotes to have both the Company and the employees to develop and grow together.



Age distribution
 ● Below 30 years old
 ● 31-50 years old
 ● Above 51 years old



Education background distribution
 ● Bachelor degree or above
 ● Other

Current status of China Unicom Employees

Employees (person)	Active employees (person)	Employees newly recruited (person)	Gender distribution (male/female)	Proportion of management personnel (%)	Proportion of ethnic minority employees (%)
270,484	253,724	29,817	1.49:1	8.94	6.81

Note: Employees mainly include active employees and dispatched personnel.

Safeguard basic rights and interests

- * To sign labour contracts with all employees and to provide them pension, medical care, compensation for work-related injury, and maternity and unemployment insurance, while implementing for employees full coverage of annual physical examination, paid leave system, 100% job retention after maternity leave/paternity leave, and annuity fund set up;
- * To pay attention to safeguard human rights, respect personal privacy, avoid any discrimination of age, ethnicity and gender toward employees during recruitment and promotion. Child labour and forced labour are strictly forbidden. Smooth communication and complaint channel are provided for employees. In 2016, no employee complaint, child labour nor forced labour were reported;
- * The Company strictly complies with *the Labour Contract Law* and the *Interim Provisions on Labour Dispatch*, continuously promotes labour optimisation and standard management, guides and urges branches and subsidiaries to use labour dispatch according to law, reduces proportion of labor dispatch of the Group to below 10% as required by the State, and basically realises equal pay for equal work. The employee satisfaction keeps improving;
- * To strengthen safe production management, continuously push forward the implementation of emergency response management system, and create safe working environment for employees. The Company has no employee diagnosed as having occupational disease caused by hazardous factors as listed in the *Occupational Disease Classification and Catalog* of the State. In order to reduce diseases caused by natural environment, branches in plateau or special regions formulated precaution and labour protection measures to offer favourable policy and special allowance other than compensation to employees suffered from plateau-related diseases in such arduous areas. In 2016, no report regarding work-related death is recorded; the number of working days lost due to work-related injury has not been counted and in the future the collection of relevant information will be strengthened.

Promote career development

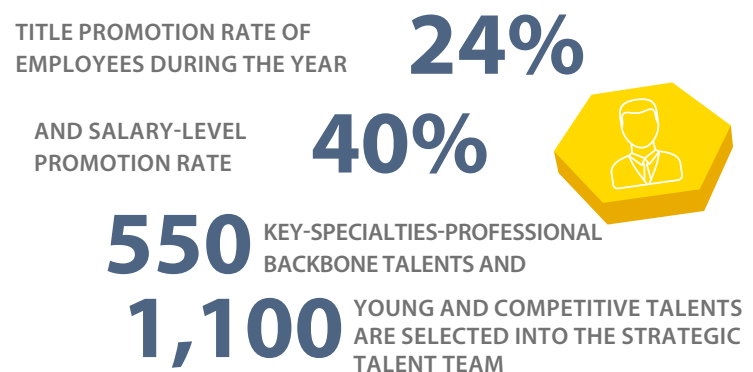
China Unicom concerns about employee development, and thus innovates the promotion system, provides employees information and support to their development, helps to self-evaluate, and the opportunities for promotion and extending experiences.

Perfect compensation increment mechanism

In order to promote employees to grow with the Company, the Company sets up dual-linkage mechanism to tie employees' compensation with the Company's performance. The performance bonus of managerial personnel would be subject to the completion status of business performance indicators, refined classification of branches and subsidiaries are carried out, and all employees' labour costs and total salaries are linked with the completion status of the Company's budget, implementing differentiated management and control.

Boost occupational development

The promotion and incentive system has been fully implemented in the Group. Employees can get promoted by three modes, namely salary-level promotion, title promotion and position promotion. All employees can find suitable development direction by nine promotion routes. Meanwhile, the Company, values on talents, implements full life cycle closed-loop management of strategic talents, such that strategic talents can achieve rapid promotion. During the year, the title promotion rate of employees reached 24% and salary-level promotion rate reached 40%. 550 key-specialties-professional backbone talents and 1,100 young and competitive talents are selected into the strategic talent team.



3. Strengthen quality training

China Unicom attaches great importance to employee education and training, so as to improve overall quality of employees; it formulates *Key Points of China Unicom 2016 Training*, as well as annual key leadership and professional skill training plan, and comprehensively carries out employee training.

Carry out various training for all levels

Leadership training: Centered to the Company's growth strategies to implement the focus strategy, along with strengthening the awareness and principles of the Party, the Company held 16 leadership training classes and completed the all-staff training which targeted to deputy general managers of provincial branches, general managers of prefecture-level city branches, leading group members of subsidiaries and internal directors of innovative subsidiaries, with over 1,000 employees were being trained; Taking the advantage of quality external resources of "one university and five colleges", over 46 senior management personnel and expert backbone employees attended training.



At the strategic seminar for senior management personnel, Chairman WANG Xiaochu exchanged ideas and discussed with the attendees. The attendees of the seminar reported the implementation status of focus strategy in their own branches/subsidiaries, introduced typical experience and measures, reported the problems and difficulties encountered during production and operation, and proposed opinions and suggestions. Chairman WANG was fully supportive to the opinions and suggestions of the attendees, and answered some questions on site.



China Unicom Global held middle-level and senior management personnel leadership enhancement training. A total of 45 persons, ranging from senior management team, management team of head office departments and each operating organisation of China Unicom Global, participated in this training. The training further enhanced the work consciousness of self-awareness and efficient collaboration of management personnel of China Unicom Global, and brought inspiration in aspect of how to mobilise team to improve work efficiency and how to establish favourable relationship with employees, customers and partners.

Professional skill training: The Company carries out professional skill training in fields of “accelerating 4G development, improving customer perception, reforming management system in an innovative way and innovating upon resource allocation and incentive mechanism” under the principle of “keeping with key business development, improving employees’ professional skills and solving shortcoming problems”. During the year, the Company held 259 sessions of professional skill trainings with over 20,000 attendees, including 27 sessions of high-end technology trainings to IT strategic talents and senior technical talents of IP/IT/wireless operation and maintenance.

China Unicom Xinjiang Branch held training camp for 4G 3D sales and store manager ability enhancement, proving a 5-day special training to 42 managers of self-run stores in four prefectures of Yili, Altay, Bozhou and Tacheng. With focus in store operation, marketing skills, implementation methods of attracting customers to the store, and team building, practice and drill, the training adopted “attendee-oriented” C-P-C training mode and initiated interaction between attendees during the process. The attendees made rapid progress through the training in ten aspects including store operation, atmosphere creation, hall and store display, cohesion creation, mind-set self-breakthrough, and etc.



Set up online course/micro course system

The Company focuses on the enhancement of self-leadership, team leadership, professional leadership and strategic leadership of managers at all levels and has developed and introduced 27 e-courses. In order to stimulate vitality of basic-level units to work in line with the Company’s reform, comprehensive management ability of persons in charge of basic-level responsible units is enhanced. The Company has organised and developed 20 series of courses for junior CEO comprehensive management skill enhancement in a mode of diversified “crowd funding and co-creation” aiming at four business lines, i.e. operation line, channel line, station cable and traction line.

Chongqing Campus of the China Unicom College carried out micro course training to popularise the courses’ connotation, design and development to the attendees, and stimulate employees’ passion to make micro courses. In the subsequent “micro course contest”, over 100 pieces of work are received, in which 70 pieces are selected for further in-depth development and training, which further helps to enhance the attendees’ micro course design and development skills and perfect their micro course production.

Innovative training mode

In order to enhance problem solving ability, practice courses in the mode of in-depth seminar, case-study and experiences are organised to improve the effect of knowledge application by sharing practical experiences and co-creating solutions among the attendees. By virtue of new learning modes such as online course, cloud course, MOOC (massive open online course) and micro course, more new learning modes are introduced into training. More online courses have been developed for the convenience of employees’ learning.



China Unicom Guangdong Foshan Branch established “Ivy League College” to select first-line management backbones, newly employed young employees, network technology and group sales backbones to cultivate their management ability and professional technology skills. Management center and expert center are set up at the “Ivy League College” with 90 attendees in four classes. It provides platform for comprehensive training and platform for sharing and communication, as well as various forms of intensive trainings, which builds an excellent youth team benchmarking “willing to learn and capable to work”. “Ivy League College” has cultivated a total of 10 middle-level cadres and 10 first-line management cadres within two years since it is established.

Perfect online learning platform

China Unicom strengthens the construction of network college platform and mobile phone “WO Course” APP client terminal, and cultivates micro course development and production team by organising micro course contest and online learning. In 2016, the number of online courses reached 1,224, and the number of attendees for the year reached 4.585 million with a total learning time of 3.75 million hours. The number of micro courses in mobile phone “WO Course” reached 3,030.

Organise employee skill competition

In 2016, China Unicom organised 513 skill competitions and knowledge contests, including industrial application marketing skill competition and B field system integrated operation and maintenance skill competition, with 10,251 participants attended. The competitions and contests effectively enhanced various employees’ business skill level.



China Unicom Industrial Application Marketing Skill Competition



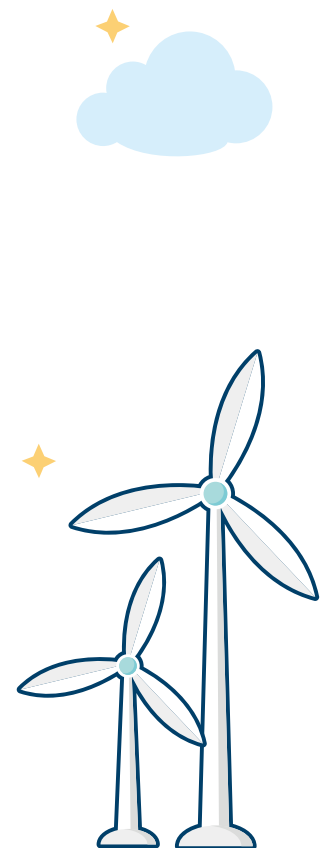
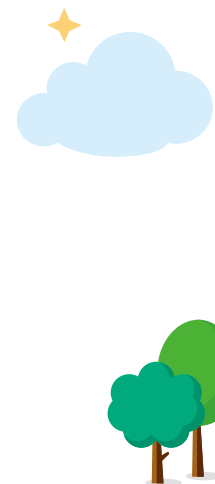
China Unicom B Field System Integrated Operation and Maintenance Skill Competition



China Unicom Guangxi Branch organised “Ingenuity Service” customer service personnel skill competition



China Unicom Hubei Branch won the third prize of nationwide communication network safety knowledge contest



Participate in business management

China Unicom encourages all employees to participate in various management activities of the Company to enhance employees’ sense of identity toward the Company and teamwork spirits within the Company.

- * Push forward the effective development of the worker’s congress system, and make a list of 20 items which must be deliberated by workers’ congress according to the key that matters concerning the vital interests of employees must be deliberated by worker’s congress;
- * Normalise the General Manager Online activity to follow and reply opinions and problems proposed by employees. In 2016, the 1,671 employee questions and messages which have not been replied during General Manager Online activity are sorted out and answered through publication on the official platform.

China Unicom Anhui Branch held workers congress, listened to the report of implementation of collective contract and salary-specific collective contract of the previous workers congress, listened to and deliberated the report of employees’ leave, employee training and labour safety, and the report of utilisation of financial budget and financial accounts, business entertainment expenditure and welfare expenditure; “China Unicom Anhui Branch Collective Contract” and “China Unicom Anhui Branch Salary-specific Collective Contract” were deliberated and passed.

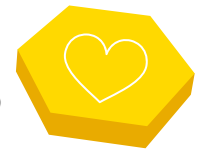
General Manager of China Unicom Hunan Branch exchanged opinions online with basic-level responsible unit employees about the operation of the Company, as well as work and life issues that employees are concerned about; over 300 employees actively participated in the online communication, and the General Manager replied 14 questions on site. The General Manager’s online email is opened concurrently. Emails sent by employees will be sorted out and transferred to relevant department for handling, and feedback responses will be sent to the relevant employees.

Care about employees' life

Employee mental state support	Accessible to WeChat public account "Open Heart and Vision for Happiness" and psychological crisis intervention hotline, complete the second EAP internal team recruitment, and select 63 EAP specialists and 71 psychological counselors.
"Support people in need" activity	Continuously carry out the activities of "keeping you healthy in Spring, cool in Summer, loved in Autumn and warm in Winter", and invest in a funding of over RMB22 million.
Support for employees suffered from difficulties	Offer group insurance against critical disease and accidental injury to employees individually; since the implementation of the project, about 300 employees suffered from critical diseases have received compensation from insurance companies.
Donation to disaster-affected areas	In 2016, disasters such as floods occurred in many regions nationwide; employees in disaster-stricken areas suffered from serious losses of family properties. The Company assigned RMB600,000 for the relief fund and organised donations to raise more than RMB5 million.

GIVE RMB
9.67 MILLION TO HELP AND SUPPORT
EMPLOYEES SUFFERED FROM DIFFICULTIES

GIVE RMB
35.71 MILLION
CONDOLENCE FUND



China Unicom Liaoning Branch held EAP psychological counselor training course. 45 EAP specialists, counselors, and psychology fans from grassroots labour union attended the training. The attendees got to understand the psychological appreciation method and mastered psychological application through experience-learning, which laid a sound foundation for future EAP counseling work.

To ensure every poverty-stricken employee can afford healthcare, China Unicom Jiangxi Branch set up "WO Love" mutual care fund to deliver the Company's love and care to every employee. Since the foundation of the fund, a total of 256 persons have received subsidies, totaling an amount of RMB1.33 million, equaling to RMB5,194 per capita.



China Unicom Shandong Branch held
Yoga Performance



China Unicom Beijing Branch set up
handcraft club



China Unicom Shaanxi Branch held Grid
singers contest



China Unicom Hunan Branch held employee
table tennis contest



China Unicom Guangdong Branch organised sports day
for employees



China Unicom Guangzhou Branch built
"Female Employee Healthcare Room"

ENCOURAGE COMMUNITY CARE

China Unicom follows the donation principle of “acting within our competence, well-defined power and responsibility, and integrity and commitment”, and continuously returns to society.

Statistical Table of External Donation China Unicom in 2016

Donation Item	Amount (RMB Ten Thousand)	Donation Item	Amount (RMB Ten Thousand)
Donation to disaster-stricken areas	39.5	Donation to cultural and sports events	4.0
Donation to targeted poverty alleviation areas (poverty alleviation)	643.6	Donation to environmental protection actions	4.2
Tibet assistance and supporting (Tibet assistance)	12.6	Donation to energy saving and emission reduction actions	2.0
Other targeted assistance areas	18.1	Donation to construction of public facilities	1.9
Donation to services for the disabled (disabled supporting)	2.1	Donation to other public-welfare relief and public welfare activities	44.4
Donation to educational causes (education supporting)	54.9	Other donation	107.4

EXTERNAL DONATION OF

9.347 RMB MILLION



PUBLIC-WELFARE DONATION OF

5.655 RMB MILLION

Support poverty-stricken people

China Unicom carefully followed the spirits of the state-owned enterprises under the central government targeted poverty alleviation work conference, comprehensively listed out the recent requirements of the State for targeted poverty alleviation policies, fully complied with the requirements of SASAC and the State Council Leading Group Office of Poverty Alleviation and Development on poverty alleviation and development work of state-owned enterprises under the central government, and confirmed the concept for targeted poverty alleviation work of China Unicom during the “13th five-year plan” period; The Company identified the principle of work, perfected organisational structure, selected titular cadres, carried out field investigation, prepared poverty alleviation plan and thoroughly promote targeted poverty alleviation; The Company further strengthened industrial poverty alleviation, transformed from donating funds to offering ways to acquire wealth, and enhanced the sense of acquisition of people in Internet use.

China Unicom Xinjiang Branch continuously carried out the work of “understanding the people’s circumstances, benefiting the people’s livelihood and winning the people’s hearts”. In three years, it assigned over 690 member cadres to 92 key villages and communities for stability maintenance; designated various supporting funds of over RMB10 million, consoled over 560 poverty-stricken households, and implemented 26 supporting projects.



China Unicom Guangdong Huizhou Branch supported Luci Village under the principle of “one method and one policy for one household”, expanded e-commerce marketing channel, and taught farmers the use of e-commerce platform to sell agricultural products. For skilled villagers, Huizhou Branch helped them to buy production tools, as well as to perfect production equipment and to promote production and development; It carried out supporting education activities and donated books to Luci Primary School. In 2016, Huizhou Branch supported 300 persons, providing RMB33,000 of fund to the households, and purchased agricultural products valued over RMB17,000.



China Unicom Hunan Branch adopted various measures to support Jiantang Village of Qiangongping Town in the Fenghuang County of the Xiangxi Prefecture. The first measure is to increase the incomes of villagers through such industrial poverty alleviation measures as pig raising as ordered, flower paddy fish farming, goose raising and greenhouse vegetable planting; the second is to implement road surface hardening project; the third is to build PV power station, which increases the annual income by about RMB50,000 each year; the fourth is to carry out such supporting work as dangerous building reconstruction, purchase accidental injury insurance for poverty-stricken households and organise skill training. In 2016, per capita income of the entire village increased RMB720, and per capita income of poverty-stricken household increased RMB900, and 105 persons from 26 poverty-stricken households got out of poverty.

China Unicom Yunnan Branch, based on the principle of establishing a poverty alleviation mechanism that “offering ways to acquire wealth”, carried out “Internet+” poverty alleviation plan in Qinghua Town of the Weishan County in the Dali Prefecture.

- Internet+ communication – To achieve full coverage of mobile network ranging from county, township, and to village, and full coverage of broadband and 4G high-speed wireless network in Qinghua Town and its villages;
- Internet+ e-commerce operators – To sell featured agricultural products such as black goat, walnuts and Yunnan safflower in large scale by cooperating with e-commerce operators.
- Internet+ employment – China Unicom Yunnan Branch, engineering construction, and sales agents preferentially hire 100 graduates from poverty-stricken families every year;
- Internet+ tourism – To take advantage of the large scale and disseminating capability of the Company’s network to promote tourism of poverty-stricken areas for free;
- Internet+ education – To achieve dedicated broadband Internet-access above 10M to middle and primary schools in poverty-stricken areas, launch service of “School Communication” and “Class Communication”, and realise interconnection with teaching in advanced areas;
- Internet+ stability maintenance – To install mobile monitoring equipment in the government of Qinghua Town, village offices of Zhongyao and Yangjiang Village, as well as middle and primary schools to build safe villages.

Be enthusiastic in public welfare activities

China Unicom actively mobilises its huge amount of employees to participate in public welfare voluntary activities. In 2016, the number of registered volunteers reached 17,042. They actively participated in volunteer activities in promoting the development of science, education, cultural and healthcare sectors, and boosting harmonious community construction. An accumulated total of 25,386 persons participated in voluntary activities.

THE NUMBER OF REGISTERED VOLUNTEERS **17,042**

25,386 PERSONS PARTICIPATED IN VOLUNTARY ACTIVITIES



Support science sector



Hainan Mobile Internet Science and Technology Museum belongs to China Unicom Hainan Branch. Since its foundation in 2012, it has actively participated in the popularisation of mobile Internet and transmission of relevant information, setting up a great learning and exchange platform for innovation and venture personnel, technicians, and popular science volunteers. The Mobile Internet Science and Technology Museum well-introduced "Internet + popular science" into schools, communities and social groups and enhanced the understanding of Internet informatisation in the society. In 2016, it received a total of 358 groups of visitors and 5,236 visitors; meanwhile, it carried out popular science exhibition and publicity activities from time to time in colleges, universities and relevant work units.

Support education services

China Unicom Ningxia Branch held the first region-wide undergraduate public-welfare summer camp. Students from 12 universities and colleges in Yinchuan participated in the summer camp themed as "future leadership, go with WO". This summer camp provided a platform for campus students to get in touch with the society, expanding their horizons, as well as practicing and enhancing abilities. It helped them to raise the level of profession and overall quality in social practice, which would further enhance the innovation capability, providing favourable opportunities for future individual development.



Support cultural sector



China Unicom Xinjiang Branch initiated large-scale public-welfare activity themed as "donate your credits to jointly build a WO future", and called upon China Unicom users to donate account credits and show love, for the purpose of building "China Unicom Love Book Room" in middle and primary schools with insufficient teaching facilities in remote areas of Xinjiang. Since the launch of the activity in 2013, over 6 million China Unicom customers in Xinjiang donated a total of 128 million account credits, which were used to build 128 book rooms, and offered over 120,000 books which is worth RMB1.66 million. Such act has benefited over 73,000 middle school and primary school students of all ethnic groups. China Unicom Xinjiang Branch is awarded with the title of "Honourable Love Offering".

Support healthcare sector

China Unicom Beijing Branch Information Navigation Business Center cooperated with Beijing Municipal Administration of Hospitals to carry out the "Guardian Angel" volunteer recruitment activity, which recruits volunteers to provide services such as outpatient guiding service, patient accompanying service, mind soothing, hospice care, healthcare promotion and education, and free medical consultation. China Unicom Beijing Branch Information Navigation Business Center fully brings the "one number links all" function of 114 service hotline to play, accomplishes direct communication between volunteers and recruiting hospitals, and effectively enhances the efficiency of recruitment activity.

ENGAGE IN LOCAL COMMUNITY

Develop local employment

Each overseas organisation of China Unicom strictly abides by laws of the local countries and regions, and manages labour management strictly according to local laws and regulations while safeguarding the legitimate rights and interests of local employees. They gradually increase the employment of local people. The total number of overseas employees of China Unicom is 614, in which 586 are local employees. In 2016, 343 employees were hired, including 237 local employees. The employee localisation rate of the Europe Branch reached 89%, and 53% of which are females. The employee localisation rate of the Singapore Branch reached 95%. The Europe Branch provided welfare such as kid coupons, and completed the preparation for pension implementation.

LOCALISATION RATE OF
OVERSEAS EMPLOYEES **93%**



LOCALISATION RATE OF
EMPLOYEES OF CHINA UNICOM
SINGAPORE BRANCH **95%**

Carry out local procurement

China Unicom Singapore Branch sourced 80% of its equipment from local, realising localisation while requiring the suppliers to undertake honest operation, to respect intellectual property rights and fair trade, and to commit to comply with local laws and regulations during product manufacturing and service providing with respect to salaries and welfare provided to their own employees. For three years, six engineering projects carried out by China Unicom Burma Branch are undertaken by local enterprises, indirectly creating over 800 local positions; meanwhile it selected and dispatched experienced domestic experts to Burma for technical exchange and training, helped local employees to enhance professional level and promoted the local technical level being in line with international standard.

Engage in local communities

China Unicom America Branch regularly participated in various activities organised by the US-China Chamber of Commerce; China Unicom Europe Branch actively participated in activities of cultural exchange among all walks of life organised by government and industry associations; China Unicom Japan Branch donated JPY100,000 to earthquake stricken area in Kumamoto, Japan; China Unicom Australia Branch participated in the celebration event of the 10th Anniversary of China-Australia Chamber of Commerce and China-Australia Ecological Agriculture Summit. China Unicom Australia Branch also acquired investment license issued by the Federal Government of Australia, and became the sole Chinese communication enterprise with legal qualification for communication service operation in Australia.

Emphasise responsible investment

China Unicom Burma Branch, based on the comprehensive analysis of the needs of local society for information service, successively built China-Burma international cross-border optical cable transmission system project throughout Burma and AAE-1 submarine cable Weishuang landing site project. The two projects, with a total investment of over USD30 million, are the largest fixed assets investment projects of China Unicom overseas. During construction period of the projects, China Unicom Burma Branch strictly abided by local laws and regulations, fully respected local beliefs and customs, carried out environmental-friendly construction, and strived to minimise influence on local environment. China Unicom Burma Branch maintains close communication and good relationship with local government and people, and the projects proceed smoothly. After put into operation, the projects will greatly improve local information communication level, boost local employment and promote local economic development.

Honours of overseas organisations

- China Unicom Global won the title of "2016 Top Ten Outstanding Network Operators in Hong Kong";
- China Unicom Australia Branch is selected as the sole council member from communication industry of China Chamber of Commerce in Australia;
- China Unicom Europe Branch has been recognised as 25 China-funded Enterprises with Rapidest Development in UK for four consecutive years.



MANAGEMENT OF RESPONSIBILITY

Strategy of responsibility	66
Governance of responsibility	67
Communication of responsibility	68
Capability for assuming responsibility	70
Performance of responsibility	71



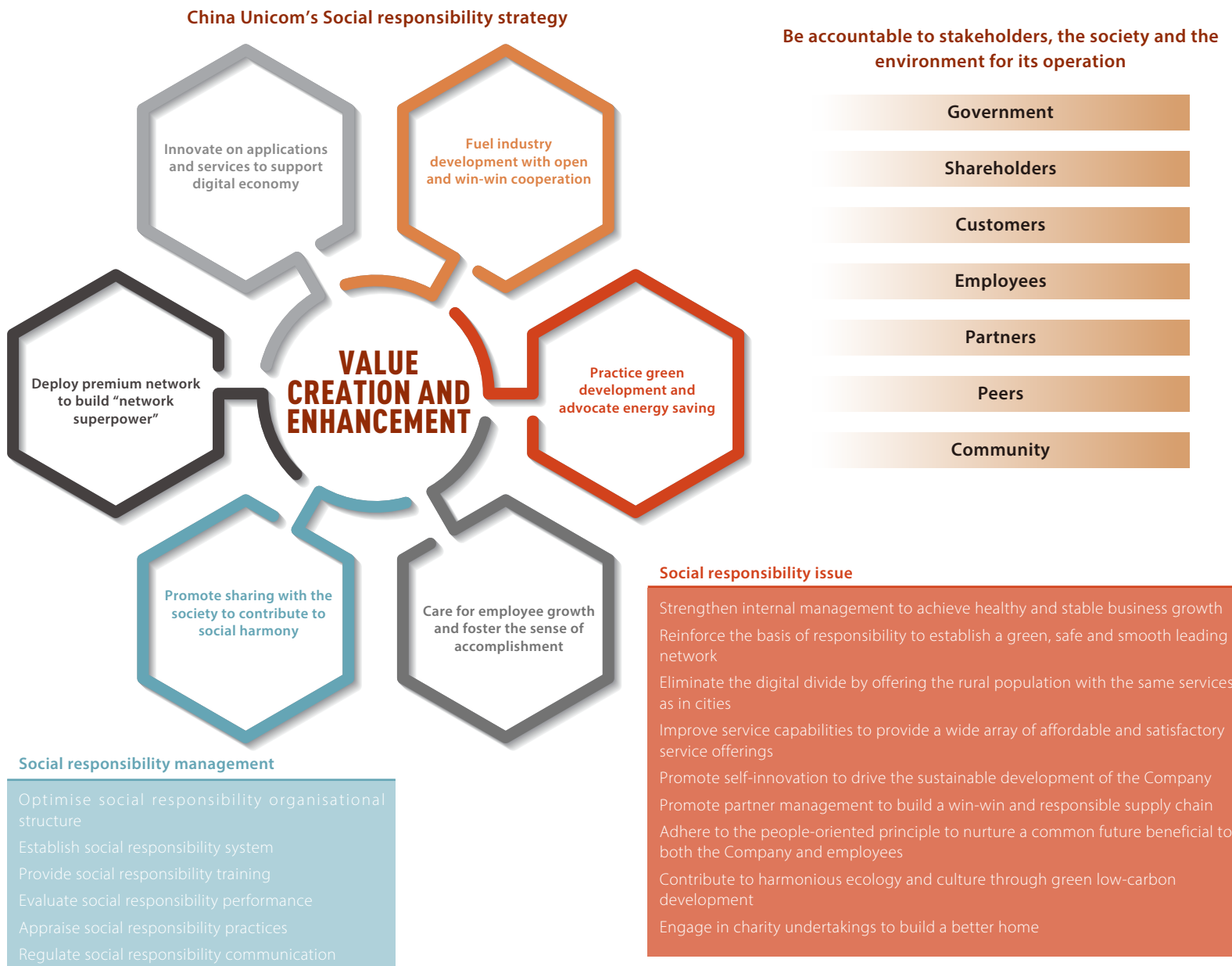


MANAGEMENT OF RESPONSIBILITY

In 2016, China Unicom carefully followed international and domestic social responsibility standards, actively implemented the SASAC's *Guiding Opinions on Better Fulfilling Social Responsibilities of State-owned Enterprises*, further enhanced the awareness of social responsibilities, extensively carried out communication about social responsibilities, China Unicom further integrated social responsibilities into corporate operation and made every effort to become an outstanding "responsible" corporate citizen.

STRATEGY OF RESPONSIBILITY

Led by the modern development philosophies of "innovation, coordination, greenness, openness, and sharing", the Company took practical steps to contribute to the "network superpower" strategy, "One Belt, One Road" initiative, supply-side structural reform and other national strategic deployments, fulfilling its obligations through responsible operations. It continuously enhanced its ability to create comprehensive economic, social and environmental values, seeking to promote sustainable development and make due contribution to China's economic, social and informatisation development.



The Company, focusing on social responsibility management and practices, ceaselessly perfects the connotation of responsibility management, and extensively carries out responsibility practices with company characteristics and centered on the responsibility issues to support the implementation of responsibility strategy.

To make sure social responsibility issues can be adjusted according to the expectation of stakeholders with changes of situations, China Unicom establishes social responsibility issues selection procedures under the principle of “closely following Dow Jones Sustainability Index, regularly updating and sustainably improving”, and studies social responsibility topics every three years to confirm issues list and development goals.

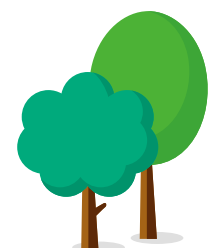
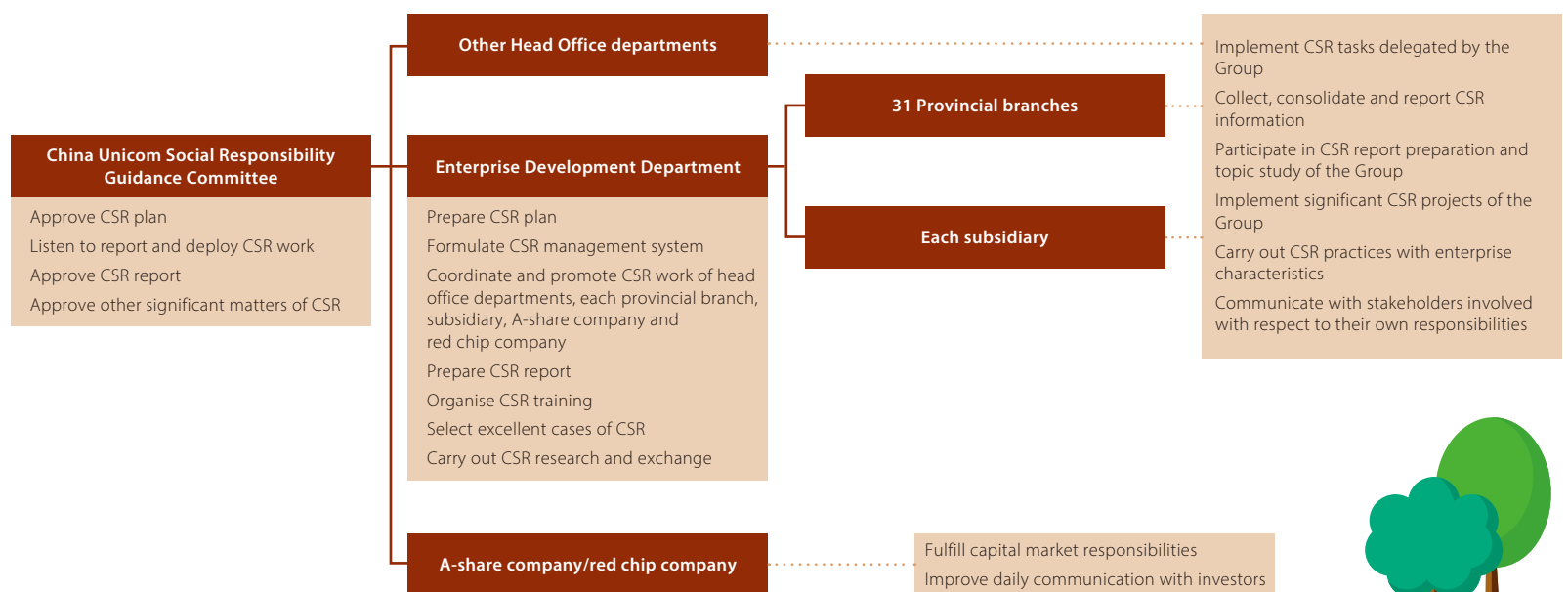
China Unicom Social Responsibility Issues Selection Procedures



GOVERNANCE OF RESPONSIBILITY

China Unicom established social responsibility organisational system covering the entire Group. Under the leadership of Social Responsibility Guidance Committee, the Enterprise Development Department serves as office to take charge of daily work, and each provincial branch, subsidiary, A-share company and red chip company sets up special department for social responsibility management and special liaison persons to perform social responsibility work according to their respective responsibilities. The Social Responsibility Guidance Committee shall review and make decisions on significant matters of enterprise social responsibilities, and coordinate and lead the work regarding enterprise social responsibility. The Enterprise Development Department takes charge of daily work of Social Responsibility Guidance Committee, and systematically coordinates the implementation of social responsibility work of all subsidiaries of the Company. Each department at the Company’s head office, each provincial branch, subsidiary, A-share company and red chip company shall organise and implement significant projects of the Group regarding social responsibilities, and organise and carry out social responsibility practices with enterprise characteristics, and be responsible for collecting, consolidating and submitting their own information and data with regard to social responsibilities.

China Unicom Social Responsibility Working Organisation and Main Responsibilities



COMMUNICATION OF RESPONSIBILITY

China Unicom sets up social responsibility communication mechanism to continuously carry out targeted communication according to the expectation of stakeholders and based on the substantial topics of social responsibilities.

Substantial topics	Stakeholders	Communication mode	Expectation on China Unicom
Strengthen internal management to achieve healthy and stable business growth	Shareholders	<ul style="list-style-type: none"> Results announcement General meeting of shareholders Investor meeting 	<ul style="list-style-type: none"> Timely and transparent information acquisition Long-term stable investment return Corporate governance and risk control Law-abiding and honest operation
	Government	<ul style="list-style-type: none"> Face-to-face communication Meeting 	<ul style="list-style-type: none"> Fair market competition order Efficiency improvement and cost reduction Network information safety
	The public and media	<ul style="list-style-type: none"> Telephone meeting and forum Internet communication 	<ul style="list-style-type: none"> Know the Company information in a timely manner Carry out information interaction with the Company
Reinforce the basis of responsibility to establish a green, safe and smooth leading network	Customers	<ul style="list-style-type: none"> Service hotline Weibo and WeChat NPS (net promoter score) survey 	<ul style="list-style-type: none"> High-speed and smooth network Smooth network anytime and anywhere Safe and sound network environment Personal information safety and secrecy
Eliminate the digital divide by offering the rural population with the same services as in cities	Customers in remote areas	<ul style="list-style-type: none"> Interview Events 	<ul style="list-style-type: none"> High quality network in remote areas Abundant agricultural information application Convenient information service channel
Improve service capabilities to provide a wide array of affordable and satisfactory service offerings	Customers	<ul style="list-style-type: none"> NPS survey In-depth interview Meeting Customer events 	<ul style="list-style-type: none"> New service to improve life quality Affordable and transparent price policy Convenient and efficient service channel Effective after-sales service warranty
Adhere to the people-oriented principle to nurture a common future beneficial to both the Company and employees	Employees	<ul style="list-style-type: none"> Employee forum Workers' congress Democratic life meeting General Manager Online 	<ul style="list-style-type: none"> Legitimate rights safeguarded Training and career development space Opportunities to participate in democratic management Support for life difficulty Comfortable and safe working environment
Promote partner management to build a win-win and responsible supply chain	Partners	<ul style="list-style-type: none"> Partners conference Meeting, interview Partner self-service portal 	<ul style="list-style-type: none"> Broad cooperation areas Fair and open cooperation opportunities Abundant and convenient support services
	Peers	<ul style="list-style-type: none"> Face-to-face communication Meeting 	<ul style="list-style-type: none"> Improve resource complementation capability Cost reduced and efficiency improved
	Customers	<ul style="list-style-type: none"> Interview, hotline 	<ul style="list-style-type: none"> Motivate partners to fulfill responsibilities
Contribute to harmonious ecology and culture through green low-carbon development	Ecological environment	—	<ul style="list-style-type: none"> Green operation and environmental protection Pollution reduction by cyclic utilisation
Engage in charity undertakings to build a better home	Community	<ul style="list-style-type: none"> Meeting Forum Village support station 	<ul style="list-style-type: none"> Sustainably effective donation Strengthen poverty alleviation and assistance Carry out public-welfare voluntary activities
Promote self-innovation to drive the sustainable development of the Company	All related parties	<ul style="list-style-type: none"> Meeting Interview Weibo and WeChat 	<ul style="list-style-type: none"> Business mode adaptive to Internet Management system adaptive to market Innovative and forward-looking communication technology

Interview with stakeholders

To thoroughly know the feelings and expectations of stakeholders towards the Company, and listen to requests and opinions of internal and external parties for the Company face to face, China Unicom carried out field interview throughout the Group, provincial branches and front-tier grid, and interviewed a total of 1,285 persons in 317 interviews with stakeholders, including managers and employees at various levels, retired cadres, business hall users, group customers, suppliers, agents and business partners. The survey group of the Company and interviewees thoroughly exchanged opinions about the satisfactory areas of the products, services and brands of the Company as well as the problems to be solved, and discussed about how China Unicom shall adapt to market competition and meet customer demands, as well as its future development direction.



Interview with China Unicom customers in business hall



Forum with agents and business partners

Carry out public interaction

In 2016, the Company extensively carried out public promotion and new media interaction, and ceaselessly strengthened communication and liaison with the public to present a more open China Unicom.

- China Unicom held seven large-scale news release and promotion events, including Intelligent Terminal Industrial Chain Cooperation Summit, China National Table Tennis Team Fan Meeting, and China International Information Communication Exhibition. During the year, China Unicom issued a total of 96 press releases, organised 15 press conferences and media interviews, and organised 241 journalists to make news report on the Company and the Company's news releases have been published 7,585 times by media;
- The significant news and relevant topics published by China Unicom on official Weibo account attracted 298 million visitors, and the official Weibo account won SASAC awards of 2016 "Most Influential New Media Account of Chinese Enterprises" and "Most Influential New Media Account of State-owned Enterprises Under the Central Government", and ranked first in State-owned Enterprises Under the Central Government Weibo Influence Weekly List for 30 times.



2016 Awarding of Advanced Journalists and Advanced Correspondent Station of Posts & Telecom Press stationed in China Unicom system



China Unicom won "Most Influential Top 500 Enterprises New Media Award" and "Most Influential State-owned Enterprises Under the Central Government New Media Award"

China Unicom Tibet Branch collected customer opinions and suggestion by multiple channels to improve customer perception. Firstly, it invited customers to participate in "WO As First Choice, Solving by Crowd Funding" and comment on the use of network, channel and package data, and collected a total of 54 valid questionnaires; secondly, it carried out callback survey in seven cities in the entire region to evaluate customer satisfaction and collect customer opinions, and in aggregate called 2,538 and visited 508 households; thirdly, it carried out 14 perception experience events, including "mobile business hall experience comparison" and "receipt acquisition and verification" and collected first hand data for further optimising services.

China Unicom Jiangxi Branch invited 4G users to participate in “You Complain, WO Gifts”. Users who propose opinions or suggestions in questionnaire will be gifted with data and can participate in lucky draw. This activity received a total of 839 questionnaires, and all participants have been gifted with data. In addition, in the lucky draw, Mr. Xu from Nanchang was gifted one iPhone 6S. He felt very much unexpected because he never thought to get rewards by complaining and he also said he would continue to pay attention to China Unicom activities and recommend it to friends and kinships.

China Unicom Tianjin Branch, via the program of “Industry Style Coordination” of Tianjin Broadcasting Station, carried out activities to listen to customers’ opinions by multiple channels, such as interacting and communicating with customers by hotline and answering their questions promptly on site. During the year, Tianjin Branch received and solved 118 problems from customers, and solved problems for customers in a more direct, effective and authoritative way.

CAPABILITY FOR ASSUMING RESPONSIBILITY

Promote responsibility development

In 2016, China Unicom participated in social responsibility construction of information and communication industry to the fullest extent. Firstly, it joined in drafting group for social responsibilities standards of information and communication industry, and supported smooth launch of the *Social Responsibility Management System of China Information and Communication Industry Enterprises*; secondly, it participated in the preparation of industrial social responsibility report and supported smooth issuance of *2015 Social Responsibility Report of China Information and Communication Industry*; thirdly, it was invited as expert to review social responsibility practices of information and communication industry, and supported extensive spreading of excellent cases, excellent enterprises and excellent individuals of the industry.

Participate in industry exchange

In 2016, China Unicom actively participated in various exchange and discussion activities held by the industry for social responsibility, paid attention to responsibility development trend, learned experience from excellent enterprises, proposed ideas and opinions, and contributed to sustainable and profound development of social responsibility.

Host	Topics
Global Compact Network China	Brighten up the future – 2016 China Summit for Realisation of Sustainable Development Goals
Internet Society of China	2016 (the 3 rd) Social Responsibilities Forum of China Internet Enterprises
MIIT Internet Enterprise Social Responsibility Research Group	Investigation on current status of Internet enterprises social responsibilities
Social Responsibility Special Committee of the Chinese Institute of Business Administration Enterprise Social Responsibility Promotion Center of China Federation of Industrial Economics China Industrial Enterprise Social Responsibility Research Think-tank Beijing Rongzhi Corporate Social Responsibility Institute	2016 China Enterprises Sustainable Competitiveness Annual Conference
Xinhua net The Listed Companies Association of Shanghai Shanghai Federation of Economic Organisation	The Second China (Shanghai) Corporate Social Responsibilities Summit of Listed Companies & the News Conference for the <i>Blue Book of Shanghai Listed Companies Social Responsibilities (2016)</i>
The Listed Companies Association	Consultation meeting for <i>Standards for Information Disclosure in Social Responsibility Report of China Listed Companies</i>

PERFORMANCE OF RESPONSIBILITY

Perfect indicator system

China Unicom follows international and domestic social responsibility standards, further perfects “China Unicom Social Responsibility Indicator System” centered nine substantial topics of the Company and drives social responsibility to be effectively integrated into enterprise production and operation on that basis.



Honours and recognitions

In 2016, China Unicom sturdily performed social responsibilities, disclosed responsibility performance situations promptly, and gained favorable progress in social responsibility performance.

- Evaluated as Five-star in the “2015 Social Responsibility Development Index of TOP 300 Chinese Enterprises” by Chinese Academy of Social Sciences;
- “Integrity” award in the 2nd China Shanghai Listed Companies Enterprise Social Responsibility Appraisal;
- “Best Social Communication Innovation Award” in Public Transparency Evaluation of China TOP 200 Enterprises;
- 24 Awards in excellent special topic cases, excellent enterprises and excellent individuals for social responsibility performance in China information and communication industry.

APPENDIXES

KEY PERFORMANCE

Type	Indicator	Unit	2014	2015	2016
Operations and development	Total assets	RMB100 million	5,450.7	6,103.5	6,141.5
	Operating income	RMB100 million	2,846.8	2,770.5	2,742.0
	Service income	RMB100 million	2,448.8	2,352.8	2,409.8
	Profit before tax	RMB100 million	159.3	140.4	7.8
	Liabilities to assets ratio	%	58.3	62.1	62.9
	Mobile billing subscribers	Ten thousand	26,657.9	25,231.7	26,382.2
	of which: 4G subscribers	Ten thousand	210.8	4,415.6	10,455.1
	Fixed-line local access subscribers	Ten thousand	8,205.6	7,385.8	6,664.9
	Fixed-line broadband subscribers	Ten thousand	6,879.0	7,233.0	7,523.6
	E-Commerce turnover	RMB100 million	748.7	921.6	847.7
Network capability	Productivity	RMB Ten Thousand/ Person • Year	87.29	86.34	88.35
	Number of 4G base stations	Ten thousand	9.3	39.9	74
	Number of fixed network broadband access ports	Ten thousand	13,480	16,489	18,906
	Broadband coverage rate in administrative villages in ten northern provinces	%	93	93	95
	Urban 20M or above broadband network coverage rate	%	68	80	89
	Rural 4M or above broadband network coverage rate	%	78	95	99
	Coverage rate of mobile network in township	%	97	100	100
	Coverage rate of mobile network in administrative villages	%	46	87	87
	International interconnection bandwidth	G	1,037	1,415	1,711
	4G network access rate	%	—	—	99.69
Reinsurance input	4G network call drop rate	%	—	—	0.10
	Number of channels in rural and remote poverty-stricken area	Ten thousand	31	28	26
	Total times of emergency communication guarantee	Time	386	387	393
	Emergency communication vehicles called out	Ten thousand vehicle-times	10.6	12.9	12.4
	Emergency communication equipment inputted	Ten thousand set-times	10.8	12.4	11.5
Independent innovation	Personnel used	Ten thousand person-times	40	39.7	41.3
	Technological innovation input	RMB100 million	29.4	36.3	48.2
	Number of personnel in technical activities	Persons	3,323	2,759	4,508
	International standards documents	Articles	495	647	614
	Industrial standards	Items	204	247	226
	Number of patents applied	Items	526	582	621
Customer service	Number of patents granted	Items	156	242	232
	Monthly average complaint rate in the year	Person-times/million users	2.81	3.67	3.61
	Overall satisfaction rate	Points	76.4	76.5	77.5
	Including: Fixed line user satisfaction rate	Points	78.8	79.9	80.4
	Mobile phone user satisfaction rate	Points	77.1	77.4	78.8
	Fixed broadband user satisfaction rate	Points	71.3	70.8	72.5
People-oriented	Mobile Internet user satisfaction rate	Points	76.2	75.0	75.9
	Gender proportion of employees	Male:female	1.48:1	1.48:1	1.49:1
	Proportion of minority employees	%	6.59	6.69	6.81
	Proportion of female in senior management	%	11.5	11.7	11.7
	Input in employee training	RMB Ten thousand	31,045	26,243	30,264
	Per capita training time	Hours	51	56	60
	Network college online learning person-time	Ten thousand person-times	256	310.7	458.5
	Network college total online learning hours	Ten thousand credit hours	127	130	375
	Number of safety production training	Times	32	32	32
	Coverage rate of safety production training	%	99.8	100	100
Employee separation rate	Proportion of contracted employees in labor union	%	100	100	100
	Input to help and support employees suffered from difficulties	RMB Ten thousand	1,260	1,323	967
	Input in condolence fund	RMB Ten thousand	1,236	1,298	3,571
	Employee separation rate	%	1.65	2.64	1.77

Type	Indicator	Unit	2014	2015	2016
Low-carbon development	Special investment in energy conservation and emission reduction	RMB100 million	8	3.2	2
	Unit information flow energy consumption	kg ce/TB	15.89	12.4	6.47
	Petrol consumption	Ten thousand tons	6.27	5.76	4.56
	Diesel consumption	Ten thousand tons	1.8	2.03	1.28
	Natural gas consumption	Ten thousand m ³	1,076.95	1,030.96	1,099.56
	Electricity consumption	100 million KWH	134.34	145.75	138.93
	Water resource consumption	Ten thousand tons	2,462.67	2,377.1	2,289.25
	Greenhouse gas emission	Ten thousand tons	511.68	546.81	509.89
	Energy conservation	Ten thousand tce	76.49	58.74	15.65
Compliance management	Recycling upon scrappage and disposal	RMB100 million	2.7	14.87	27.11
	Number of compliance training	Times	1,567	1,596	1,591
	Number of participant attending the compliance training	Persons	226,463	231,549	254,628
Community responsibility	Number of registered volunteers	Persons	11,944	14,118	17,042
	Person-times participated in volunteer activities	Person-times	17,453	20,026	25,386
	Credit rating	Grade	AAA	AAA	AAA
	Total tax paid	RMB100 million	155.2	117.8	112.6
	Employment creation	Persons	13,326	15,622	29,817
	Total donation	RMB Ten thousand	1,553.6	641.7	934.7

COMPANY HONOURS

- China Unicom was voted by professional investors as "Asia's No.1 Best Managed Company – TMT Sector" in "Asia's Best Managed Companies Poll 2016" by FinanceAsia. Meanwhile, Mr. Wang Xiaochu, Chairman and CEO of the company was named as "Best CEO in China – 1st", Mr. Li Fushen, Executive Director and CFO of the company was named as "Best CFO in China – 2nd".
- China Unicom was voted by institutional investors as "Asia's No.1 Most Honored Telecom Company" in "2016 All-Asia Executive Team" ranking organised by Institutional Investor. Meanwhile, Mr. Wang Xiaochu, Chairman and CEO of the company was named as "Asia's Best CEO (Telecoms) – 1st", Mr. Li Fushen, Executive Director and CFO of the company was named as "Asia's Best CFO (Telecoms) – 2nd".
- Mr. Wang Xiaochu, Chairman and CEO of China Unicom, was named "Asia's Best CEO" in the 6th Asian Excellence Award 2016 held by Corporate Governance Asia, a leading regional publication on corporate governance. Mr. Li Fushen, Executive Director and CFO, was also named "Asia's Best CFO". Meanwhile, China Unicom was honoured by the publication as "Best Investor Relations Company".
- China Unicom was accredited with "Platinum Award for Excellence in Governance, CSR & Investor Relations" in "The Asset Corporate Awards 2016".
- China Unicom ranked 207th by revenue in "Fortune Global 500" for the year 2016.
- China Unicom was voted by investors "Most Progress in Investor Relations" at "IR Magazine Awards – Greater China 2016", and Mr. Wang Xiaochu, Chairman and CEO of the Company was voted "Best Senior Management".
- China Unicom's revamped website (www.chinaunicom.com.hk) won gold award in the category of "Website Redesign – Investor Relations" in the "iNova Awards 2016".
- China Unicom was awarded "Best Employer" and "Best Employer in IT Telecommunications Industry" by ChinaHR.com as well as "Most Responsible Employer" by zhaopin.com.
- Official Weibo of China Unicom was accredited with "2016 Most Influential New Media Account of Chinese Enterprises" and "2016 Most Influential New Media Account of State-owned Enterprises Under the Central Government", "Most Influential Top 500 Enterprises New Media Award" and "Most Influential State-owned Enterprises Under the Central Government New Media Award" by SASAC.
- The WeChat public account of "China Unicom Customer Service" ranked top 10 most influential new media account of SASAC.
- China Unicom was awarded "Outstanding Contribution Award of the 16th China Education Information Innovation and Development Forum" by the Ministry of Education.
- China Unicom was awarded "Big Data Excellent Technical Results and Solutions" for its excellent cloud data capability, open platform and big data application.
- China Unicom OSS2.0 was a Finalist for 2016 TM Forum Outstanding Contribution Award.
- Representative team of China Unicom ranked No.1 in ONOS Global First Training Camp & Hacker Marathon.
- China Unicom Cloud Data was accredited with "Cloud Sail Award", "Cloud Computing Excellent Practice Organisation Award", "Most Influential Cloud Industry Company Award" and "Excellent Cloud Computing Product Application Award" by MIIT.
- Wo Music Culture & Technology Co., Ltd. was awarded "2016 China Mobile Internet Gold Fingertip Award- Most Influential Brand", "Global Mobile Internet Excellent Achievement Award –Best Entertainment Application Award" and "The Fourth China Music Industry Conference – China Music Industry Annual Contribution Award".

INSTITUTIONS AND ORGANISATIONS

Organisations joined by China Unicom in 2016

Name of Organisation	Post
China Data Center Industry Association Technical Committee (CTO)	Initiator, leading member
Data Center Infrastructure Management Forum	Council member
Data Center Alliance Information Coordination Committee	Member
Openstack Open Source China	Member
Cyber Security Association of China	Executive council member
International ICT Alliance	Initiator
International Capacity Cooperation Enterprise Alliance	Initiator, council member

China Unicom, according to the principle of strictly controlling participation in domestic and international standardization organisations, has evaluated each of 28 international standardisation organisations/open source organisations as well as 18 domestic standardisation organisations and associations joined and to be joined, and by way of exiting some before joining some others, has finally joined 21 international and 11 domestic organisations in line with its future development direction and without overlapped functions.

DESCRIPTION TO THE REPORT

Reporting period:	From January 1, 2016 to December 31, 2016, some sections exceeding aforesaid period.
Release frequency:	The social responsibility report of China Unicom (Hong Kong) Limited is an annual report.
Organisational coverage:	The report covers China Unicom (Hong Kong) Limited and its subsidiaries. For the convenience of expression, "the Group", "the Company" and "We" are used respectively in this report.
References:	<p><i>Guiding Opinions on Better Fulfilling Social Responsibilities of State-owned Enterprises</i>, The State-owned Assets Supervision and Administration Commission of the State Council (SASAC);</p> <p><i>Guidelines for preparation of Report on Performance of Corporate Social Responsibility</i>, Shanghai Stock Exchange;</p> <p><i>Environmental, Social and Governance Reporting Guide</i>, HKEX;</p> <p><i>Guidelines for Preparation of Social Responsibility Report</i>, ACSIQ and SAC;</p> <p><i>Guidelines for Preparation of China Enterprise Social Responsibility Report (CASS-CSR 3.0)</i>, Chinese Academy of Social Sciences;</p> <p><i>Sustainability Reporting Guidelines (G4 Edition)</i>, Global Reporting Initiative (GRI);</p> <p><i>Social Responsibility Management System of China Information and Communication Industry Enterprises</i>, China Association of Communications Enterprises.</p>
Clarification about the data:	<p>The 2016 data quoted in this report are final statistical data. In case of any discrepancy between the data herein and those in annual report, the annual report shall prevail;</p> <p>The monetary unit adopted in this report is RMB.</p>
Quality assurance:	The Board of Directors and all directors undertake that the information disclosed in the report is authentic, complete and correct, with no false record or misleading statement.
Language versions and availability:	The Social Responsibility Report of the Company is issued in both Chinese and English and in electronic copy. Website: http://www.chinaunicom.com.hk
Contact information:	<p>Address: China Unicom Enterprise Development Department, No. 21 Jinrong Street, Xicheng District, Beijing</p> <p>Zip Code: 100033</p> <p>Fax: 86-10-66258674</p> <p>Email: yangwei3@chinaunicom.cn</p>

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FEEDBACK

Dear reader,

This report is the first stand-alone social responsibility report released publicly by China Unicom (Hong Kong) Limited. We would like to have your opinions and suggestions to ceaselessly improve the preparation of report. Please answer the questions provided in the table below, and return the feedback to us by the following methods.

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