

CORPORATE
SOCIAL
RESPONSIBILITY
REPORT

2018



China
unicom中国联通

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

BUILDING “FIVE NEW” ESTABLISHMENT
TO INNOVATE AND SHARE A GOOD SMART LIVING





CONTENTS

04 Message from Chairman

06 Welcome to China Unicom

Feature Story I:

06 A Stormy Path on Reform and Open-up

Feature Story II:

07 Deeply Advance Mixed-Ownership Reform

Feature Story III:

08 Comprehensive Efforts in Targeted Poverty Alleviation

Feature Story IV:

11 Delivering 2022 Smart Winter Olympics

Feature Story V:

13 Serving the "Belt and Road" Initiative

15 Corporate Culture

15 Development Strategy

73 Appendices

73 Key Performance

74 Company Honours

75 Institutions and Organisations

75 Description to the Report

75 Indexes

78 Feedback

NEW GOVERNANCE:

Starting a New Chapter of SOE Reform	16
Enhancement on our corporate governance structure	18
Compliance in operations and performance of duties	20
Promoting in-depth anti-corruption and integrity advocacy	21
Strengthening incentives through sub-division reform	21

NEW DNA:

Developing new foundation by strengthening transformation	22
Injecting superb Internet DNA	24
Developing new system for talent supply	24
Establishing new incentive and Control mechanism	25
Supporting Sustainable development for staff	25

NEW OPERATION:

Embarking on New Internet-Oriented Transformation	30
Constructing smart premium networks	32
Enriching smart application products	34
Enhancing smart service standards	36
Maintaining a secure cyberspace	39
Persisting in low-carbon green development	41
Sharing benefits with society	46

Note: Please refer to our 2018 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.

NEW ENERGY:

Fostering New Value in Innovative Development	52
Contributing to the building of smart industries	54
Developing smart futuristic technologies	58

NEW ECOLOGY:

Facilitating New Developments Connecting In and Out	60
Co-development with partners operators	62
Starting a new chapter of mutual success for the industry	62
Deepening cooperation with Internet companies	64

ROBUST MANAGEMENT:

Regulating the Practice of Social Responsibility	66
Strategy of responsibility	68
Organization of responsibility	69
System for responsibility	70
Capabilities on responsibility	71
Participation of responsibility	71



MESSAGE FROM CHAIRMAN

Year 2018 was a year of outstanding results and noticeable improvement in corporate appearance of China Unicom. In persistent implementation of the new development philosophy, we deepened the execution of the Strategy of Focus, Innovation and Cooperation, driving the development of the China Unicom's "Five New" on all fronts and expediting transformation towards Internet-oriented operations while deeply advancing mixed-ownership reform. We made contributions to the nation's tackling of the three critical challenges, and we endeavoured to serve as a benchmark for sustainable development in the fulfillment of our economic, social, environmental and overseas responsibilities, making new contributions to the development of good smart living to satisfy the people's growing demand for information living.

Exploring New Governance to unleash institutional benefits.

We persisted in focusing on sustainable development and the pursuit of maximisation of overall value, seeking deep advances in mixed-ownership reform, and conducting systematic, comprehensive and revolutionary optimisation and adjustment of our corporate systems and mechanisms, in a major effort to drive the modernisation of our governance regime and ability. We optimised and streamlined our organisational structure to create a lean enterprise. We stimulated the vibrancy of micro-entities and advanced subdivision reform for all production scenarios on all fronts, forming a team of approximately 20,000 "mini CEOs" to allow growth in staff income in tandem with the value they deliver, resulting in significantly enhanced sense of reward on the part of our staff. Efforts were made to explore the pilot programme of "contract-out operation by private capital" for tier-two subsidiaries subject to grave losses, while China Unicom Yunnan was included in the "Double 100 Action" list for state-owned enterprise ("SOE") reform. We shouldered the important responsibility and mission of exploring and developing a modernised SOE system with Chinese characteristics.

Strengthening New DNA to stimulate intrinsic vibrancy. In adherence to the belief that "strong personnel and superior DNA thrive the enterprise", China Unicom is committed to the proper building of corporate culture and strengthening of talent development, which is a crucial factor. To promote exemplary labour performance and craftsmanship, we commended 100 Group-level employee role models and shortlisted 104 "China Unicom Skilled Experts", with a view to institutionalising the propagation of our corporate culture, cementing the foundation for corporate growth and reinforcing the ethos of China Unicom. We established a system for the separate management of talents and implemented the "418" talent project. Through 3 initiatives namely, "U Graduates", "Elite Hunt" and "Flowing Water", the number of innovative talents increased to 16,000. We care for the after-work life of our staff and respect and protect their lawful rights. We increased remuneration allocation towards frontline staff and value-delivering areas. We were committed to offering practical assistance to and solving difficulties for staff, as we continued to see the sense of belonging and well-being growing among our staff.

Advancing New Operation to increase efficiency. We have made meticulous effort to implement the “cyber superpower” strategy and drive the development of Digital China, advancing “Internet-oriented transformation in the four areas” of marketing, IT, network and management and constructing the next-generation information infrastructure that was fast, ubiquitous, convenient, secure and eco-friendly, so that people could enjoy smart network services with faster speed, broader coverage, superior perception and more concessions. In-depth progress was made in promoting universal information access as the digital divide continued to narrow. Ongoing progress was made in speed upgrade and tariff reduction, as we continued to lead our peers in terms of 4G network speed, while the speed of our home broadband was upgraded. Mobile domestic data roaming fees were abolished. Mobile data tariff, home broadband tariff, SME Internet leased line bandwidth unit price, international voice and data roaming tariffs decreased by 59%, 41%, 36%, 44% and 46%, respectively, in a genuine sharing of benefits with society.

We endeavoured to forge a smart brand and continued to enhance the standard of our customer service, as we innovated 2I2C application and privilege offerings and enriched our “Smart WO Family” integrated products to enable the public to enjoy more convenient and varied smart living. Determined to tackle the challenge of poverty alleviation, we rolled out initiatives in targeted poverty alleviation and matched support missions in a systematic manner with the launch of concessionary packages for the underprivileged and industry-oriented poverty alleviation programmes. We commenced special initiatives against communication and information fraud and successfully completed communication assurance tasks for various major events, while providing active assistance for the preparation of smart Winter Olympics. With a belief in the symbiotic relationship between men and the nature, we adopted low-carbon and energy-saving technologies, enhanced the control of electromagnetic radiation, implemented paperless offices and introduced innovative green applications to help build a beautiful China with blue sky, green land and clean water.

Enhancing New Energy to lead smart development. We always believe “innovation is the primary driving force for development”. Riding on developments in new technologies, industries, commercial models and businesses, we explored the evolution of future-proof smart networks and expedited 5G research and development. Deployments in relation to frontier technologies was also expedited with a strong focus on key services such as Cloud Computing, Big Data, Internet of Things (“IoT”), artificial intelligence (“AI”) and Blockchain, as we had close to 110 million IoT connections. Efforts were made to drive standardisation and patent research, with the submission of 545 international standards drafts and 1,121 patent applications, of which more than 90% were invention patents. Focusing on key sectors such as government affairs, education, medical and healthcare, environmental protection, transportation, tourism and industrial manufacturing, we provided an extensive range of “smart+” applications to propel the in-depth integration between information technology and the real economy and facilitate the transformation and upgrade of traditional industries, the economy and society. We set up a special zone for innovation to speed up the switch into new energy, in a bid to enhance our ability in mid-to-high-end supply in the innovative segments for the benefit of economic and social development.

To develop New Ecology to promote integration and win-win.

We actively practise the idea of “cooperation for win-win and coordinated development” with a special emphasis on the construction of a cooperative ecosphere and the development of business unions. We established a deeply cooperative ecosphere with strategic investors, entered into customer touchpoint cooperation with 54 Internet companies, and set up the joint ventures Yunlizhahui Technology, Yunjing Wenlv Technology and Yunjizhahui Technology with Alibaba, Tencent and Wangsu respectively, in an effort to deepen capital cooperation. We built an IoT “Platform+” cooperative ecosphere by establishing an IoT industry alliance, a new innovation acceleration centre and an incubation laboratory. We developed a terminal cooperative ecosphere to continuously expand cooperation in six-mode all network access terminals. We created a 5G cooperative ecosphere with the formation of a 5G innovative centre to deepen innovative cooperation in vertical industries, while strengthening external cooperation leveraging the Winter Olympics platform. An ecosphere for private capital cooperation was also been built to enhance sharing and cooperation with peers, so that we could reduce duplicate construction and wastage of economic and social resources, while generating synergies in development.

Realising dreams of new goals and braving the new era. Year 2019 marks 70th anniversary of the establishment of New China and a crucial year in the full accomplishment of economic affluence. China Unicom will persist in advancing with stability in 2019, insist on new development philosophies, observe the requirements of high-quality development, adhere to the central theme of supply-side structural reform, decisively deepen the implementation of the Strategy of Focus, Innovation and Cooperation, and deeply advance the establishment of “Five New” China Unicom. Seizing new strategic opportunities in 5G, AI, Industrial Internet and IoT, etc., we will rise to the occasion and tackle challenges with our full might to instill a strong impetus for high-quality corporate development, in an emphatic effort to build a new central enterprise under Socialism with Chinese Characteristics for a New Era and deliver stellar performance anew that would make the new era proud.

Wang Xiaochu
Chairman
China Unicom (Hong Kong) Limited

March 2019



WELCOME TO CHINA UNICOM

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

China Unicom’s principal operations include, among others, fixed-line service, mobile service, domestic and international communication facilities service, international satellite leased line service, data communication service, network access service, value-added services and system integration services related to communication and information services. On 28 April 2009, China Unicom launched “WO” as a new brand covering all of its services. It carries China Unicom’s servicing philosophy underpinned by consistent innovation, with the aim of providing comprehensive support to its individual, family and enterprise customers. The Company’s modern telecommunication network covers China and connects to the world. We are making vigorous efforts to drive broadband upgrades of our fixed-line

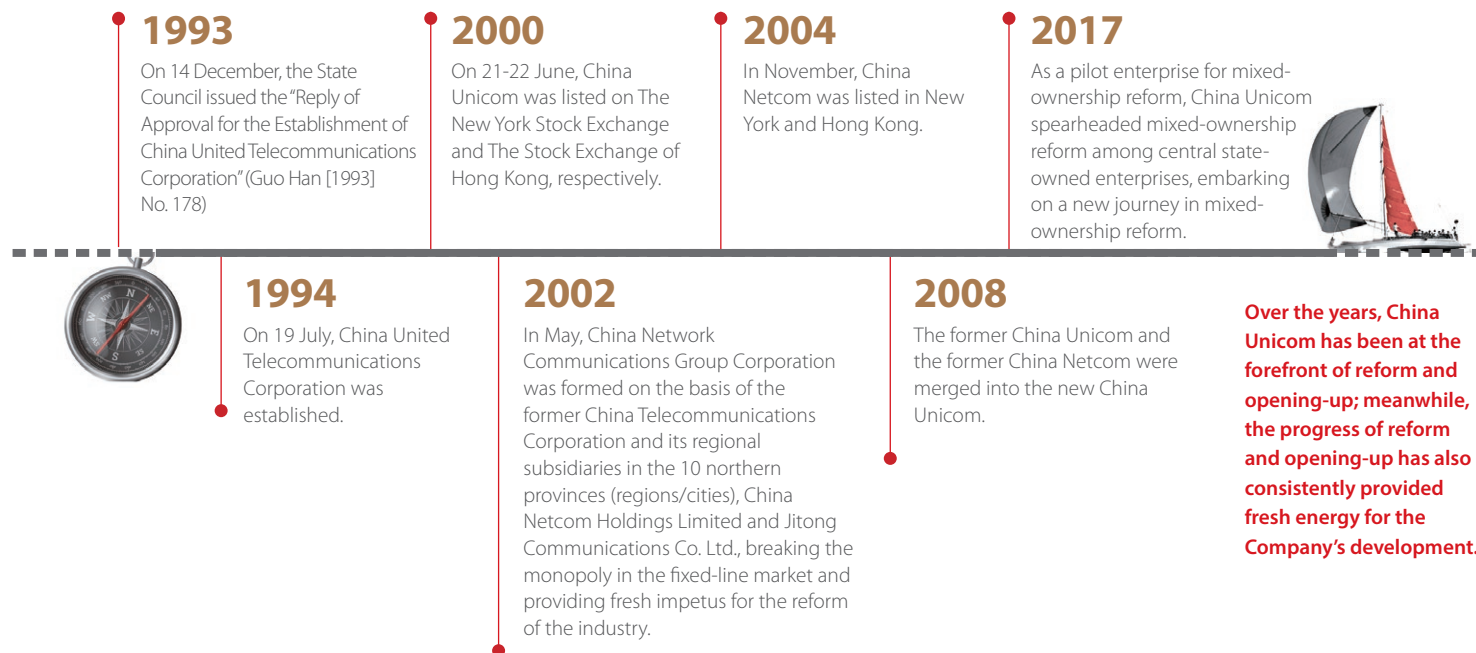
and mobile networks as well as the implementation of the “Cyber Superpower” strategy at the corporate level, in order to provide a full range of high-quality information and telecommunication services. As at the end of 2018, China Unicom had 987,000 4G base stations and approximately 215 million fixed-line broadband access ports, and its international roaming service covered 615 operators in 253 countries and regions.

In 2018, earnestly practicing new development philosophy, China Unicom fully deepened the implementation of the Focus Strategy, as it reported a significantly optimised and healthier business mix with notable improvements in operating performance, delivering some of the best results ever recorded since its reorganisation. Service revenue for the year amounted to RMB263.7 billion on the back of 320 million mobile billing subscribers, 220 million 4G subscribers and 80.88 million fixed-line broadband subscribers. Looking to the future, all members of China Unicom will step up with the development of “Five New” China Unicom as they embrace the dawn of a new era, staying focused on the full implementation of reforms towards high-quality development, delivering excellent results as a tribute to the nation’s 70th anniversary.

🏠 FEATURE STORY I: A STORMY PATH ON REFORM AND OPEN-UP

After 40 years of reform and opening-up, China has set the pace of development in the current era. Reforms have opened the door to not only material opulence, but also technological evolution and spiritual enrichment, as witnessed in the telecommunication industry. Taking a look at the history of China Unicom, the Company was born out of reforms and its development was also facilitated by ongoing reforms, epitomising the reform and opening-up of the nation’s telecommunication industry.

🚩 At the forefront of telecommunication reforms: braving challenges in testing times



FEATURE STORY II: DEEPLY ADVANCE MIXED-OWNERSHIP REFORM

As the first pilot unit to adopt entire group-based mixed-ownership reform and the first central state-owned enterprise in the telecommunication industry to introduce private capital, China Unicom has taken solid steps to advance mixed-ownership reform in close tandem with the general requirements to “improve governance, enhance incentive, highlight principal businesses and increase efficiency”. Our pilot mixed-ownership reform commenced in September 2016 and the pilot run proposal was approved in June 2017. By the end of October 2017, the proceeds raised from our mixed-ownership reform had been received in full. In April 2018, the grant of employee restrictive shares was completed. The mission of diversifying ownership was duly accomplished while advanced progress has been made in tackling critical reform issues, witnessing a solid start in mixed ownership reform.

Serious reform of market-oriented systems and mechanism

We specifically addressed the problems of unwieldy organizational structure and overstaffing, with a view to stimulating vibrancy at micro entities.

Serious streamlining and re-organisation: the number of departments at the headquarters, numbers of management entities at provincial branches and municipal branches were reduced by 1/3, 1/5 and 1/4, respectively. 26 corporate entities were cut, representing a cumulative reduction of 27%.

Seriously enforced market-oriented employment mechanism: a market-oriented system for the appointment and dismissal of management personnel was established. The exit rate for management staff at various levels was 14.3%, while the mandatory exit rate for contract staff was 1.2%. Through the special programme for innovative talents, 2,300 staff were recruited.

Serious in sub-division contract-out reform: promoted internal “innovation and entrepreneurship” with the establishment of micro-teams, transforming “passive fulfilment of duties” into “proactive drive to deliver”. A total of 154,000 staff joined 24,000 sub-divided units and 20,000 “mini CEOs” been appointed by selection, while remuneration for frontline staff increased by more than 20% year-on-year.

Serious in turning around losses: tested “private capital contract-out operation” model for third-tier subsidiaries which have never recorded profit since establishment and whose losses have been deteriorating. A pilot run commenced for 11 municipal branches in Yunnan province.

In October 2018, China Unicom Yunnan branch and China Unicom Smart Connect Technology Co., Ltd. (a subsidiary of China Unicom) was included in the “Double 100 Action” list for state-owned enterprise reform announced by the State Council, representing a solid step for China Unicom’s mixed-ownership reform branch/subsidiary level further to reform at the Group level. China Unicom Yunnan branch, for example, reported a year-on-year revenue growth of approximately 18% and profit growth of approximately RMB250 million, thanks to the reform involving private capital cooperation.

Driving strategic synergies to achieve breakthrough with differentiation

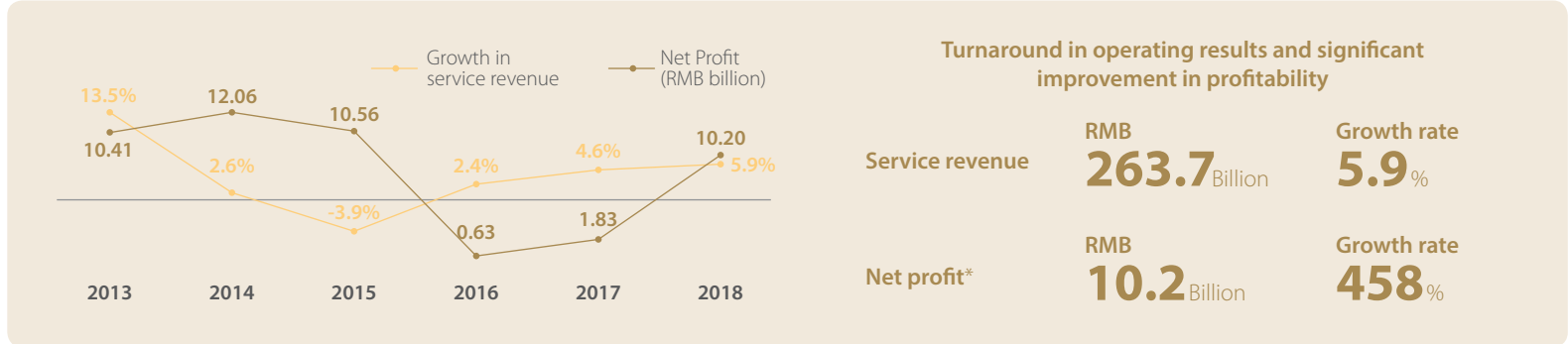
We have been engaged in intensive cooperation with strategic investors with a view to enhancing our abilities to innovate and supply effectively.

- Cooperation in sales channels and touchpoints: online touchpoint cooperation with Tencent, Alibaba, JD.com and Baidu, pioneering a new model of integrated customer services by telecom companies and Internet companies.
- Cooperation in New Retail: launched New Retail store pilot programmes with Alibaba, JD.com and Suning in Shanghai and Guangdong. Notable increases in daily average customer visits, business volume and merchandise sales were reported in the pilot stores.
- Cooperation in cloud computing: offered more than 50 cloud computing products in cooperation with Tencent and Alibaba.

A great start in the first year of mixed-ownership reform

Positive results in mixed-ownership reform were achieved, underpinned by a V-shaped rebound in operating results and continuous improvements in internal and external environments. The morale of staff officers received a significant boost and the Company went on the fast track of high-quality growth.

© Outgrowing peers in revenue and profit



Turnaround in operating results and significant improvement in profitability

Service revenue	RMB 263.7 Billion	Growth rate 5.9 %
Net profit*	RMB 10.2 Billion	Growth rate 458 %

* Net profit represented profit attributable to equity shareholders of the Company.

© Notable enhancement in the quality of development



FEATURE STORY III: COMPREHENSIVE EFFORTS IN TARGETED POVERTY ALLEVIATION

China Unicom has made exhaustive efforts to combat poverty by strengthening alleviation efforts, expanding the scope of mobilisation, ensuring precision in initiatives, speeding up our programmes and showing our compassion for poverty alleviation.

Developing a grand scheme for poverty alleviation

In diligent performance of its responsibility as a central enterprise, China Unicom has proactively formulated an all-rounded scheme for poverty alleviation by uniting forces at all levels of the Company, internal and external. Through team unity, coordinated actions, resource sharing, concerted efforts, internal and external cooperation and complementary edges, we have formed a formidable combined force that will help combat poverty.

More than 500 operating units of the Company undertook designated aid missions appointed by the central and local governments, covering 917 impoverished counties at national or provincial/municipal level through the dispatch of 1,857 poverty alleviation workers (including 417 workers posted at the Village Secretary Offices). We arranged 360 industry poverty alleviation projects, provided training to over 6,400 labourers in rural villages and key technical workers. We facilitated the relocation of 4,572 underprivileged people and provided financial assistance to 2,310 students. We committed medical and hygiene resources, which benefitted 14,800 impoverished people.



Chairman Wong Xiaochu chatting with residents lifted from poverty in Ceheng County, Qian Southwest Prefecture, Guizhou Province

China Unicom Hunan reached out to Dongjiu Village, a key village designated for poverty alleviation through rural tourism, to help local farmers grow new products such as konjac. Vegetable experts were invited to provide on-site consultation and help ensure good harvest such that Dongjiu Village might be lifted from poverty.



Expert in kiwi fruit in Western Hunan instructing farmers on planting techniques.

China Unicom Gansu launched a series of poverty alleviation initiatives such as conversion of buildings in disrepair, maintenance of village committee offices, village road repair and education aid, etc. to deepen poverty alleviation.



Through the "Poverty Alleviation with Warmth and Education Assistance by China Unicom" initiative, 84 down feather jackets were sent to kids at three primary schools in Zhangjiachuan County.

With its big data platform for "targeted poverty alleviation", China Unicom Inner Mongolia branch helped Linxi County to become the first national-level impoverished county in Inner Mongolia to be lifted from poverty through "targeted identification, targeted aid, targeted policy implementation and targeted exit".

Weishan County, Dali, taken care by China Unicom Yunnan branch, passed the national assessment for poverty lifting and become one of the first impoverished counties in Yunnan Province to be lifted from poverty. A total of 244 residents from 69 households were lifted from poverty, as the Company was named an advanced unit in poverty alleviation in 2018 by Weishan County, Dali Prefecture. On 26 September, the village leadership and cadres of Qinghua Village, Weishan County, Dali led by the village committee secretary paid a visit to China Unicom Yunnan branch to express their gratitude.

Active promotion of poverty alleviation through telecommunication network

Network infrastructure construction was enhanced to enable affordable telecommunication service for people in impoverished areas. With a special focus on designated poverty alleviation areas, deeply impoverished areas in "three districts and three prefectures" and national-level key impoverished areas, we set out targets on network capacity, investment and key projects, and accelerated network infrastructure construction. Network investments amounting to RMB1,889 million were made to expand network coverage in impoverished areas.

Fibre broadband coverage was expanded in remote villages and western areas. Construction was completed for approximately 16,000 administrative villages. 504,800 new broadband ports were added.

Broadband construction completed for approximately **16,000** administrative villages.

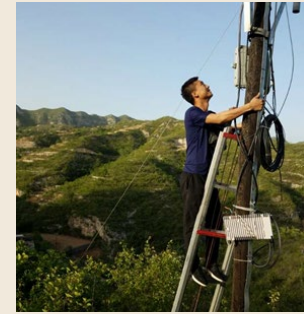
Coverage of universal 4G service was expanded with the construction of 17,400 new wireless base stations in impoverished counties across the country.

A total of **17,400** new wireless base stations were constructed in impoverished counties.

Vigorous efforts were made to build self-operated sales outlets and develop social channels in villages and remote impoverished areas. Outlets were located closer to villagers affording more convenience to farmers, a move much welcome by the local farmers.

4G coverage in villages and townships reaching **91** %.

China Unicom Shanxi branch launched a county revival campaign to enhance network fulfilment for farmers. Network investments were significantly tilted towards the counties, while a mobile network optimisation campaign known as "Operation Sunshine" was launched, resolving 4,920 network issues and reducing the service alert ratio from 6% to 1.63%.



Rural network optimisation operation

Concessionary measures were launched to enable affordable telecommunication services for the people in impoverished areas. A total of 6,252 poverty alleviation handsets and other poverty alleviation terminals were provided alongside concessionary packages or free telecommunication services for the benefit of 252,000 people in impoverished areas. On top of the "Speed Upgrade and Tariff Reduction" policy, concessionary tariffs targeted at poverty alleviation were offered to the impoverished areas, so that the underprivileged could benefit from more economical tariff policies and cheaper telecommunication products. Targeted poverty alleviation packages were offered by 27 provincial companies with more than 450,000 users and telecommunication fee relief of approximately RMB12 million for the underprivileged.

We also supported poverty alleviation through social charity to let people in impoverished areas enjoy good telecommunication services. Through intensive cooperation with Social Participation in Poverty Alleviation and Development of China, we pledged to give out 10 million generic data packs and dedicated data packs with a total worth of RMB44.50 million to underprivileged users registered with Social Participation in Poverty Alleviation and Development of China, charitable parties and officers engaged in poverty alleviation.

Poverty alleviation through "Internet+ e-commerce"

China Unicom has innovated a new model for poverty alleviation through e-commerce spending by teaming up with JD.com, its partner in mixed-ownership reform, to engage in internal and public-facing poverty alleviation through online spending. Internally, we have established an online "China Unicom Poverty Alleviation Flagship Store" to meet the diverse internal purchase needs. Externally, "China Unicom Charity and Poverty Alleviation Pavilion" was set up on the JD.com portal, as an online "Famous Brand Supermarket" for the agricultural products from the impoverished counties, and served as a powerful sales platform connecting with the entities at all levels of China Unicom, its 300,000 employees and the public for the impoverished areas. In just three months after going online in 2018, the platform amassed over RMB30 million in sales of poverty alleviation goods, providing a fundamental solution to the problem of poor marketability of agricultural goods owing to weak e-commerce capacity in impoverished areas.



The China Unicom Charity and Poverty Alleviation Pavilion, a joint effort by China Unicom and JD.com, promotes agricultural goods from impoverished counties to the public.



China Unicom Jiangsu and Xinjiang branches jointly help agricultural goods from Pishan County sell in Jiangsu province.



China Unicom organised more than 120 exhibition sessions to promote agricultural goods from impoverished counties before and after the poverty alleviation day.

China Unicom Shaanxi branch tested the new model of "Internet + Targeted Poverty Alleviation" and built an administration platform for poverty aid officers stationed at villages, which covered approximately 900 departments and units, and more than 60,000 active handset users, opening up a convenient channel between supply and demand for agricultural products.



Data display on the Big Data Poverty Alleviation Information Command Centre

China Unicom Beijing branch worked with Fogukou Village in fighting poverty on a long-term basis under the "One Enterprise, One Village" matching system for aid and assistance. We offered assistance in connection with communication services, smart agriculture, fruit sales and low-income farmers, etc. We called on our staff to buy 4,039 boxes of apples from Fogukou Village for approximately RMB400,000 and procured close to 10,000 apple boxes to facilitate sales.

Solid progress in assistance to Xinjiang and Tibet

China Unicom continued to increase its targeted financial assistance to Tibet. Since the "13th Five-year Plan", we have been focusing on the poverty alleviation goal of "Casting away worries in two aspects and providing assurance in three" by implementing the relocation project, health project and education informatisation project, aiding through empowering and making strong efforts to help Geji fight against poverty and solve the practical difficulties of the underprivileged. 180,000 China Unicom customers participated in the "charity library" donation for schools in Southern Xinjiang, with a total of 126 million points donated. We also donated "charity libraries" to 132 schools in Sidizhou, Southern Xinjiang for the benefit of more than 85,000 primary and secondary students.



Paying visit to relocated families in Geji County, Tibet



Provided training in relation to poverty alleviation and education assistance for Geji County civil servants and staff of China Unicom Tibet branch.

FEATURE STORY IV: DELIVERING 2022 SMART WINTER OLYMPICS

As the sole partner in official communication services for Beijing 2022 Winter Olympics and Paralympics, China Unicom incorporated the ideology of "eco-friendliness, openness, sharing and integrity" into its Olympic communication service regime in close tandem with the theme of "Smart Winter Olympics Connecting the Future". The Company is committed to supporting the Olympics with smart networks and hyper speeds, serving the Olympics with smart applications and an extensive range of products and services, and safeguarding the Olympics with smart technologies and professional teams. China Unicom pledged to fuel powerful new energy to ensure the success of the Winter Olympics and another manifestation of China's strengths.

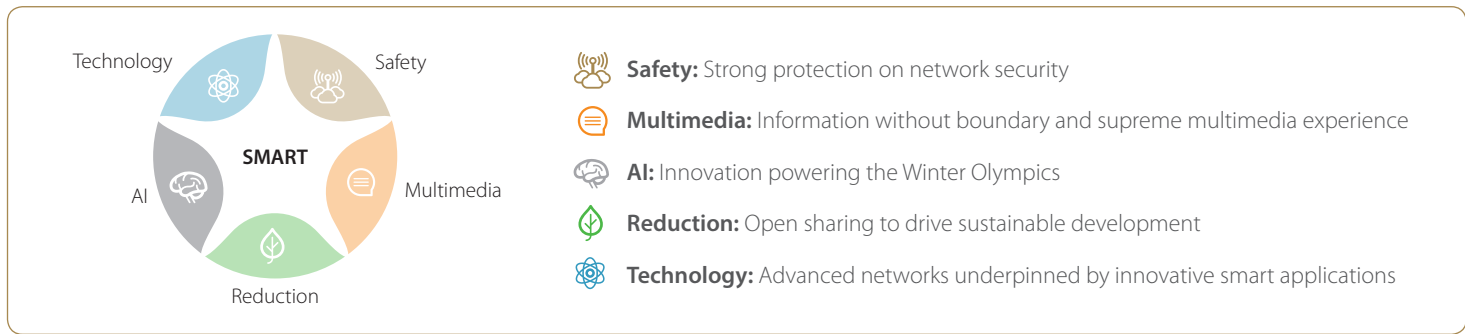
At the China Unicom Day of the Olympic Expo held in Beijing in August 2018, Mr. Juan Antonio Samaranch, Vice President of the International Olympic Committee and Chair of the Coordination Commission for the Olympic Winter Games Beijing 2022, made a remark:

"China Unicom's pledge for a 'Smart Winter Olympics Connecting the Future' has raised our expectations for 2022 Winter Olympics. The fast development of communication technologies has not only fulfilled the demand for "faster, higher-speed and stronger" networks, but also has provided many more possibilities in how Olympic sports could carry out. I believe that China Unicom will team with Beijing Organising Committee to deliver a most spectacular, superb and extraordinary Winter Olympics event."



Elucidating the core objectives of Smart Winter Olympics

The core "SMART" objectives of China Unicom's Smart Winter Olympics compose of safe Olympics, digital Olympics, smart Olympics, green Olympics and hi-tech Olympics, highlighting China Unicom 5G's boost to underpin the "Smart Winter Olympics".



China Unicom's core objectives for Smart Winter Olympics

Unfolding the Smart Winter Olympics strategic plan



China Unicom Smart Winter Olympics Strategy Conference

Assurance plan: 5G technology empowering the Winters Olympics with the buildout of a smart assurance system

China Unicom is committed to creating a range of smart applications based mainly on innovative 5G technologies. Leveraging VR, AI, edge computing, and other technologies on the back of 5G network assurance underpinned by high speed, low latency and massive connectivity, the Company is building a smart application platform for the Winter Olympics to provide smart applications such as 360-degree panoramic live broadcast, VR immersion experience and game site medical care, in a bid to empower Smart Winter Olympics through 5G technologies.

More than RMB1.5 billion had been invested in connection with the Winter Olympics to upgrade and construct a 5G-driven ubiquitous broadband communication network and create a smart operational assurance system, in a full effort to accomplish the three major goals to offer superb user experience, premium event services and smart stadium operation.

Development plan: expanding the scope of cooperation in game events for joint inclusion in smart living

Leveraging the advantage as the sole partner in official communication services for Beijing Winter Olympics, China Unicom has made intensive efforts to explore scenarios and applications in relation to Smart Winter Olympics and provide smart solutions, in a move to foster new energy for development by diversifying to key sectors such as smart city, media and Internet of vehicles.

By actively working in partnership and to create an industrial ecosystem for resource integration, complementary advantages, and mutual success, China Unicom and partners together built a "smart living privilege sharing platform" that covered sectors including fashion, catering, style-living, transportation, and entertainment, as to create exclusive Winter Olympic products and benefits for the general public well-being, in order to encourage public participation in the winter sports, achieving the national goal of having "300 million citizens to participate in winter sports".

Upgrade plan: sharing mutual success with co-development in the Winter Olympics

China Unicom has been offering vigorous sponsorships in connection with Beijing 2022 Winter Olympics, not only it is an advantage to enhance the brand image of the Company, but also highlighting the value of cooperation that we sought and elevating the standards in management, as well as facilitating the formation of specialised teams, all of which foster the building of our corporate culture. Externally, a smart service regime is to be built with the goal of securing brand sponsorships for winter sports to be accomplished, resulting in mutual success for both China Unicom and the Winter Olympics.

Enhancing ecological cooperation in Smart Winter Olympics

At "Beijing 2022 Partner Club Launch Ceremony and the Olympics Marketing Summit Forum", China Unicom, as a member unit, expressed the intentions to grab the opportunities afforded by the Winter Olympics and Paralympics to vigorously develop the new-generation networks, and in a full effort to building a 5G capital leading in coverage, perception and applications. The Company also announced the new deployments and measures for advancing 5G.

For 5G deployment, Beijing will be a key city for the 5G trial in network construction while exploring for new business models. Leveraging the mixed-ownership reform, step up to nurture and enhancing high-quality 5G innovative development will empower new energy. With the spirits of Winter Olympics, efforts are made on all fronts to turn “Smart Winter Olympics” into a new signature for the capital city.



Beijing 2022 Partner Club Launch Ceremony

On 31 October 2018, a signing ceremony was held for the strategic cooperation agreement between China Unicom and Shougang Group, pursuant to which the two groups will join forces to develop Shougang Park into China's first 5G showcase industry park. With enhanced cooperation in the 5G industry park construction, smart industry park planning and design, as well as application showcases, strategic cooperation has been carried out in joint brand marketing, international business cooperation, promotion of the Olympic culture, winter sports development, and others.



China Unicom has launched a 4-year “Campus Winter Olympics Programmes” aiming to further promote the spirits of the Olympics among teenagers and students, as well as to popularise Winter Olympics related knowledge and culture. The first programme known as “China Unicom Winter Dream Ambassador on Campus” has begun.



🏠 FEATURE STORY V: SERVING THE “BELT AND ROAD” INITIATIVE

🏠 Enhancing “Belt and Road” servicing capabilities

With a view to deepen implementation of the “Belt and Road” initiative, China Unicom is committed to the provision of customised and butler-style communication and information services with high security, swift response, end-to-end excellence in experience and flexibility through China Unicom Global, in line with its vision of becoming “an expert in international information services trusted by customers”. In this connection, more than 30 branches were set up around the world to provide global customers with integrated information services in unified domestic and overseas operations, as well as global coverage on an end-to-end basis. Global voice and data services are also being provided to individual international customers.

🕒 Expanding the “Belt and Road” coverage

- 14 PoPs along the “Belt and Road” route and 57 PoPs globally covering 21 countries and regions.
- 17 new vPoPs through cooperation, covering 14 African cities.
- 5 new branches were set up, completing system expansion for the China-Mongolia and China-Russia routes, while achieving first connection with Pakistan operators and 100G cross-border connection with Mytel of Myanmar.
- Laying of cross-border optical cable measuring a total of 50.2 km for Hong Kong-Zhuhai-Macau Bridge and to provide a large-capacity, high-security and low-latency information passage for cross-border communication among Guangdong, Hong Kong and Macau.

🕒 Diverse international deployment of optical cables

- Additional capacity of 410G cross-border land cables to bring the total capacity of owned cross-border land cables to 9.895T.
- Additional capacity of 3.67T proprietary submarine cables to bring the total capacity of independently built submarine cables in operation to 21.7T.

🕒 Enhancing outgoing international Internet connection capability of Africa

- The South Atlantic Inter Link (SAIL), the first inter-continental direct submarine cable connecting Africa and South America across the South Atlantic constructed under the lead management of China Unicom, was in full operation on 4 September 2018 to further enhance the outgoing international Internet connection capability of Africa.

◎ Ongoing expansion in services scale

• Long-term partnerships established with more than 300 international carriers to provide global connection and ICT services to over 1,000 corporate customers while serving more than 460,000 international mobile users.

🌐 **Providing favourable “Belt and Road” offers**

China Unicom offers innovative products and services with favourable terms in places where it operates and provides information and communication service solutions to Chinese enterprises “going abroad”.

• To address requirements of Chinese companies in their early stage of international business development, the “business start-up pack” is the one-stop information service solution for companies to commence operations.

• A low-latency premium financial lease line product was launched to address the needs of financial clients, while Ali Cloud services were rolled out with Alibaba.

• MVNO services are being provided in Hong Kong, the United Kingdom and the United States with a range of promotional offers, including

promotion for new customers, concessionary travel cards, offers relating to mobile number portability and special festive concessions, etc.

• We serve “going abroad” companies and have provided services to more than 600 companies with overseas operations, offering services of 1.5T bandwidth packets with access to close to 100 countries to ensure efficient and convenient international communication and value-added service for a massive number of enterprises.



Concessionary packages offered on CUUniq Hong Kong website



Concessionary packages offered on CUUniq UK website



Concessionary packages offered on CUUniq US website

🌐 **Exploring cooperation under the “Belt and Road” ecology**

China Unicom has rolled out extensive cooperation with industry peers, procuring rapid coverage of business blind spots under the asset-light model by close association of resources and complementary actions to explore emerging markets in driving business development.

• We teamed up with PCCW on VPOP in Africa to extend our network to Africa, now covering 11 countries, 14 cities and 17 POPs in the continent, while benefiting from the strengths in network structure, latency and price regime of the African network, further enabling us to provide premium and efficient services to SMEs.

• Using our independently built NCP submarine cable to cooperate with Google and achieved leaping growth in resources towards Japan and America by way of resource swapping, namely, by swapping “inventory” to “additions”, in a move that has enhanced resource efficiency and formed an overall resource footprint marked by three bandwidths across the Atlantic, namely, TPE, NCP and FASTER.

• Partnering with China Telecom and others in the joint construction of the Hong Kong-America (HKA) international submarine optical cable, which is scheduled for commissioning by the end of 2020.

• Cooperation with BAT to expand building of additional POPs in Singapore and Korea, to further extend the network coverage.

• A joint venture cloud-network integration cooperation project was launched in Thailand to enhance China Unicom’s cloud ability and advantage in the overseas market.

• We actively participate in global industry conferences and exhibitions, as well as industry award nominations, in order to demonstrate our premium information solutions and services to the world.

🌐 **Persisting in localised operations**

◎ Stringent adherence to laws and regulations of the countries where we operate

• All operating activities are conducted in a legally compliant manner in strict accordance with laws and regulations of respective countries and regions, including the “Company Law of the People’s Republic of China”, the “Labour Law of the People’s Republic of China” and the “Employment Ordinance of Hong Kong”, among others. In staff recruitment, any act of discrimination in connection with race, colour, gender or age is prohibited and no child labour or forced labour in any form will be tolerated. Forms and information disclosure are submitted to the governance departments of the Company and licensing and regulatory authorities according to designated schedules. While showing respect to the society and culture at where the operations are conducted, the supervision and audit department also has set up a hotline and mailbox to receive complaints against unjust treatments. There has not been any incidents relating to the infringement of aboriginal rights to-date.

• To avoid to have transactions with countries which are under sanctions, preventive measures have been taken to conduct full-scale inspection and review on internal control policies and related transactions. High-risk transactions, once identified, will be terminated as soon as practicable.

• Full respect for diverse races and cultures and equal employment opportunities are being offered to foster a harmonious working environment. In addition to hiring employees of Chinese descent, Singaporean, Malaysian, Filipino, Indonesian and Burmese are hired in South Asia Pacific regions, in an effort to contribute to racial harmony in these regions.

◎ Highly regard honest operations

• The “Belt and Road” initiative and branding of Chinese operators have been promoted in world-renowned social media, including Facebook, Twitter, LinkedIn and YouTube.

• In the past three years, we have placed a strong emphasis on domestic and overseas media promotion, with more than 3,000 releases published in domestic media including Xinhuanet, CNR, www.toutiao.com, Tencent, Sina, NetEase, and C114, as well as in overseas media including Ta Kung Pao, Bloomberg, Thomson Reuters, and Yahoo.

- We actively participated in professional conferences and industry forums, such as the CIO Summit Singapore, Fintech CIO Forum Kuala Lumpur, PTC 2018, Capacity Asia 2018 and ACC2018.
- We actively involved in the initiatives organised by China Enterprise Association since being elected to its council in 2018.
- ◎ Localised procurement
 - We adopt localised procurement and work actively with local operators to jointly provide packet network services, including maintenance, insurance, legal consultation, property, lunch meals and shuttle bus services, which are all locally procured.
- ◎ Staff localisation
 - As at the end of 2018, China Unicom Global had 851 employees, out of which 696 were based in overseas locations, including 257 foreign employees and 252 female employees overseas.

🏠 CORPORATE CULTURE

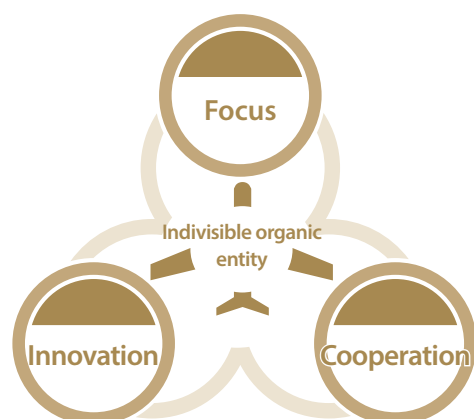
In 2018, China Unicom continued to engage in a corporate culture development exercise with intensive effort to drive the building of corporate culture as a means to strengthen the enterprise. The China Unicom corporate culture system comprises a core value system, including the Company's vision, mission, core values and business management philosophy, as well as code of conduct formed by the "Prohibitions of Behaviours" and the Basic Codes of Conduct.



🏠 DEVELOPMENT STRATEGY

In meticulous implementation of the development philosophy of "innovation, coordination, eco-friendliness, openness and sharing", China Unicom, leveraging its edges and resources to improve and optimise its development strategy, proposed the comprehensive implementation of the Focus Strategy centred on focus, cooperation and innovation to develop the "China Unicom's Five New", in order to cope with the complex and profound changes taking place inside and outside the Company. China Unicom persists in focusing on key businesses, regions and targeted customer groups, as well as the innovation of consumer Internet and industry Internet, international development, market-oriented system and mechanism, and talent teams, while adhering in cooperating with strategic investors, industry peers and manufacturers. The Company has adopted strong measures in relation to New DNA, New Governance, New Operation, New Energy and New Ecology to drive the implementation of strategies.

Year 2018 was a year of ongoing deepening of mixed-ownership reform, accelerated development in Internet-oriented operations, and building-out of the "Five New" establishment for China Unicom. The business development of the Company saw a historic turn where business transformation took solid steps forward, while profound changes in systems and mechanisms were in place, as we successfully set a benchmark for the mixed-ownership reform of central state-owned enterprises. In the future, the Company will continue to uphold and maintain its strategic steadfastness, while strengthening the enterprise through corporate culture, foster solidarity among staff and intensify reforms in an incessant effort to forge the revamped image of the "China Unicom's Five New".



Effective development of fundamental business, key breakthroughs in innovative business, improvements in systems and mechanisms, comprehensive enhancements in customer experience, brand influence, operational management and the comprehensive enhancement of value creation, striving to be world-class enterprise with global competitiveness.

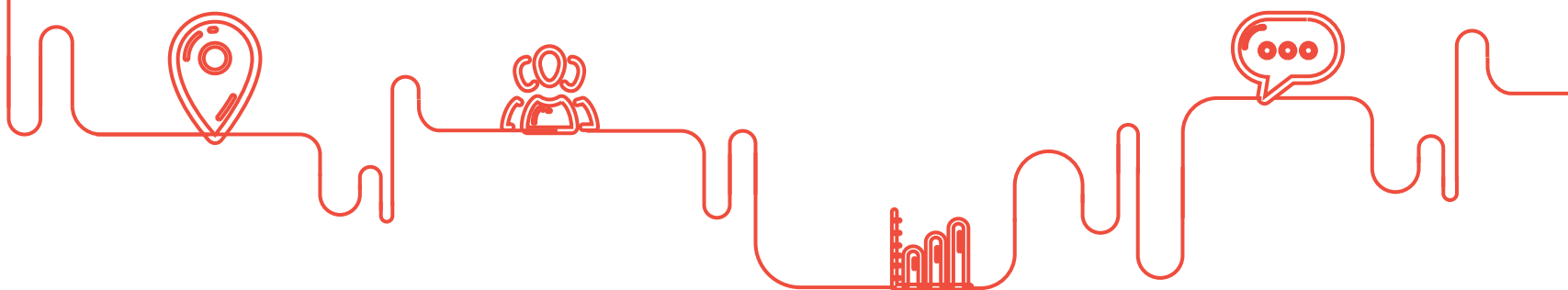
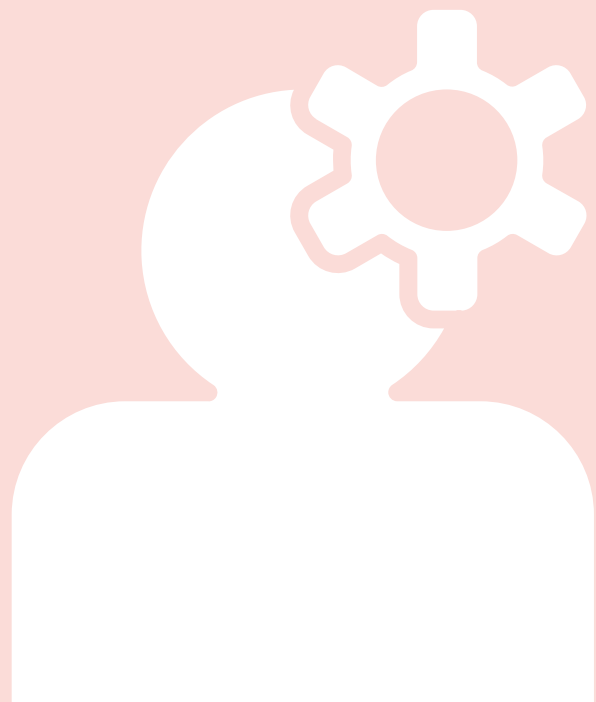
NEW GOVERNANCE	NEW ECOLOGY	NEW ENERGY
	NEW OPERATION	
NEW DNA		

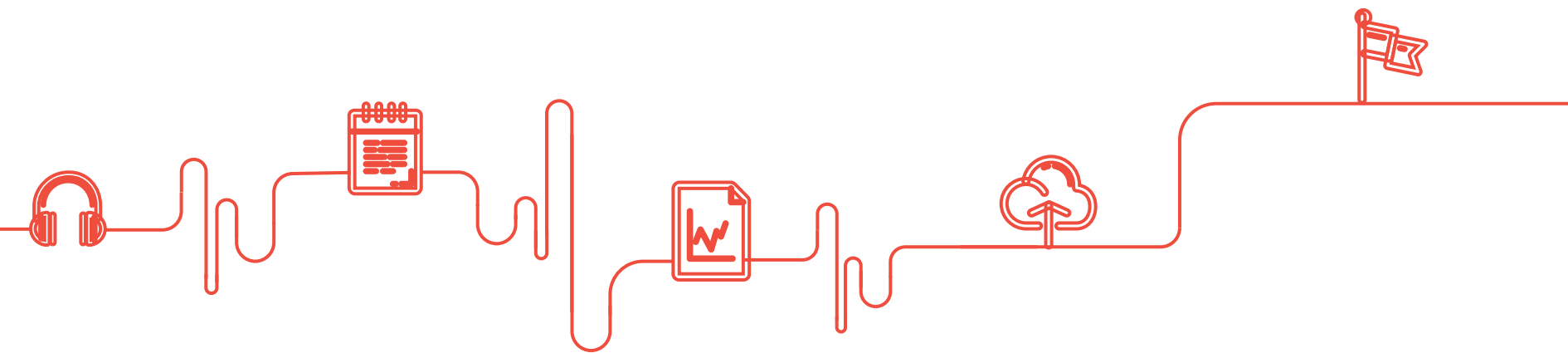
Strategic Framework of China Unicom

New Governance

STARTING A NEW CHAPTER OF SOE REFORM

Enhancement on our corporate governance structure	18
Compliance in operations and performance of duties	20
Promoting in-depth anti-corruption and integrity advocacy	21
Strengthening incentives through sub-division reform	21





NEW GOVERNANCE: Starting a new chapter of SOE reform

China Unicom continuously explores how to enhance its new corporate governance following the mixed-ownership reform. While carrying out operation in compliance with laws and regulations, the Company deeply pushed forward the modernisation of its corporate governance regime and ability, and explored sub-division reform for all production scenarios to seek groundbreaking progress in deepening reform on all fronts.

Measures adopted in 2018

- Innovative general legal education and strengthened intellectual property rights management fostering a telecom marketplace underpinned by fair competition.
- Stipulation of the safety accountability regime and operating mechanism of the Group and promotion of the development of the Company's risk control system.

Actions to be taken in 2019

- To promote mechanisms and systems reform in depth aimed at accommodating productivity growth with intensive effort.
- To implement general legal education planning under the "7th Five Year Plan" on an ongoing basis and drive legal "rule of law" at China Unicom and reinforcing the duties of the primary responsible officer for promoting legal governance.
- To further improve the risk management regime for more meticulous and intensive risk management.
- To drive internal control and institutional development with regulatory rating in an ongoing effort to enhance credit risk management.

ENHANCEMENT ON OUR CORPORATE GOVERNANCE STRUCTURE

The Board of Directors of China Unicom is committed to high standards of corporate governance and recognises that good corporate governance is for the long-term success and sustainability of the Company's business. China Unicom adopts the Companies Ordinance (Chapter 622 of the Laws of Hong Kong), the Securities and Futures Ordinance of Hong Kong and other related laws and regulations as the basic guidelines for the Company's corporate governance. The articles of association of the Company are in compliance with the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited and the regulatory requirements for non-U.S. companies listed in the United States. These rules serve as guideline for the Company to improve the foundation of its corporate governance, and the Company strives to comply international and local corporate governance best practices. There were no instances of any violation of listing laws and regulations by China Unicom in 2018.

Responsibilities towards the capital markets

To further enhance the Company's system of information disclosure and to ensure truthfulness, accuracy, completeness and timeliness of its public disclosures (including inside information), the Company has adopted and implemented the Information Disclosure Control Policy. In an effort to standardise the principles of information disclosures, the Company established an Information Disclosure Review Committee under the management and formulated the procedures in connection with the compilation and reporting of the Company's financial and operational statistics and other information, as well as the procedures in connection with the preparation and review of periodic reports. Moreover, the Company established detailed implementation rules with respect to the contents requirements of financial data verification, in particular, the upward undertakings by the individual responsible officers at the levels of subsidiaries, branches and major departments. The current Board of Directors comprises experts from diversified professions, such as telecommunication, technology, banking, financing, investment and management, and is diversified in terms of gender, age, duration of service, educational background, professional experience etc., which contribute to the enhanced management standards and more regulated operation of corporate governance of the Company, and results in a more comprehensive and balanced for the Board of Directors in terms of structure and decision-making process.

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

Responsibilities towards the investors

The Board of Directors is engaged in ongoing dialogue with the shareholders. The annual general meeting held each year and the extraordinary general meetings convened as the Board of Directors thinks fit upon the formal request of shareholders in accordance with Companies Ordinance, offer full protection of the lawful interests of shareholders. In addition to publishing annual reports and interim reports, the Company discloses major unaudited financial information and other performance indicators on a quarterly basis and announces operational statistics on a monthly basis in order to enhance the Company's transparency and improve investors' understanding of the business operation of the Company. Upon the announcement of results or major transactions, the Company will generally hold analyst briefings, press conferences, and global conference calls with investors, during which the Company's management would accurately and thoroughly respond to questions raised by stakeholders. The Company's investor relations department is responsible for providing information and services requested by investors and maintaining timely communications with investors and fund managers. The Company also arranges from time to time road shows and actively attends investor conferences arranged by investment banks, through which the Company's management meets and communicates with investors to help them with an accurate understanding of the Company's latest developments and performance. Latest updates on the Company's significant business developments are being provided in a timely and accurate manner through announcements, press releases and the Company website (www.chinaunicom.com.hk). Adoption of the Shareholder Communication Policy to ensure that the shareholders are provided with ready, equal and timely access to balanced and understandable information about the Company, in order to enable shareholders to exercise their rights in an informed manner, and to allow shareholders and the investors to strengthen communication with the Company.

The Board of Directors and management

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



Wang Xiaochu

Chairman and
Chief Executive Officer



Li Guohua

Executive Director and
President



Li Fushen

Executive Director



Shao Guanglu

Executive Director and
Senior Vice President



Mai Yanzhou

Senior Vice President



Liang Baojun

Senior Vice President



Zhu Kebing

Executive Director and
Chief Financial Officer



Fan Yunjun

Senior Vice President



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

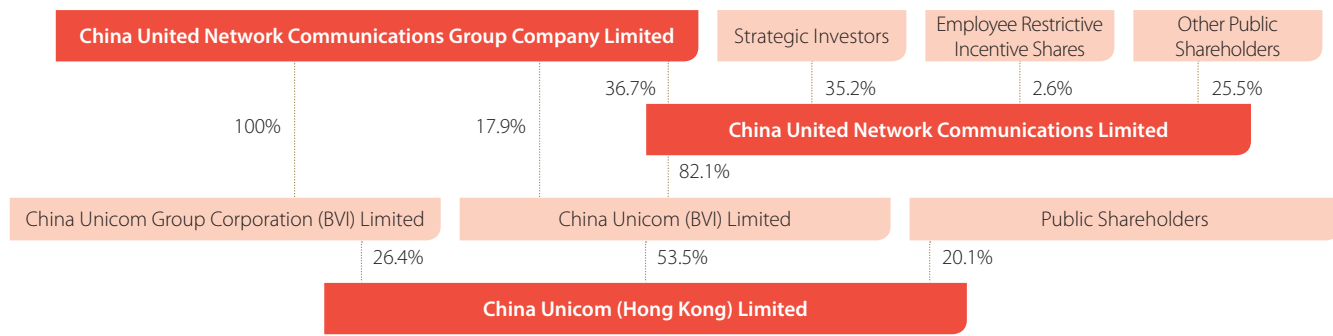
Independent Non-executive
Director



Law Fan Chiu Fun Fanny

Independent Non-executive
Director

Shareholding structure



Shareholding Structure of China Unicom

Notes:

- Information as at 31 December 2018.
- The shares of China United Network Communications Limited held by strategic investors represented the shares acquired by the strategic investors introduced through mixed ownership reform from non-public share issuance and transfer of existing shares.
- Shares held by China Unicom Group Corporation (BVI) Limited excluded the interest in 225,722,791 shares of China Unicom (Hong Kong) Limited held by China Unicom Group Corporation (BVI) Limited as trustee on behalf of a PRC shareholder.

COMPLIANCE IN OPERATIONS AND PERFORMANCE OF DUTIES

Legal compliance is a prerequisite for the sustainable development of an enterprise and an important organisational and institutional assurance for the conduct of a company's decision-making, operational management and protection of interests in accordance with the law. China Unicom has abided by business ethics in a consistent manner and made ongoing enhancement to its compliance risk management mechanism to safeguard shared interests with stakeholders as well as its own interests, and to contribute to the building of a society of integrity and legal compliance in China. The principal activities of Company's subsidiaries are the provision of cellular and fixed-line voice and related value-added services, broadband and other Internet-related services, information communications technology services, and business and data communications services in the PRC. The Company is required to comply with the Telecommunications Regulations of the People's Republic of China, Administrative Regulations on Telecommunications Companies with Foreign Investments, Cybersecurity Law of the People's Republic of China and other related laws and regulations. At the same time, overseas subsidiaries of the Company are also required to comply with the related laws and regulations where their business operations are located.

Operation in compliance with laws and regulations

China Unicom is engaged in intensive and thorough implementation of the new ideology, thought and strategy of comprehensive legal governance in the nation. The Company pushes forward the development of legal governance, fosters the culture of legal governance and continues to improve the Company's standard in operation in compliance with laws and regulations.

- The requirement for the chief officer of a central enterprise to perform the duties as principal responsible officer for promoting legal governance and general legal education planning under "7th Five Year Plan" was implemented, pursuant to which the promotion and education of legal compliance was conducted in an ongoing and intensive manner and differentiated for various levels to ensure that all staff respect, learn, comply with and apply the laws and regulations.
- Initiatives launched included the publication of the "Management Officers' Legal Education Journal" to promote the learning of the constitution, special campaigns on general legal education such as the "3.15" International Consumer Rights Day, "4.15" National Security Day and "4.26" World Intellectual Property Rights Day. The Company enhanced general legal education training for new employees, provided general legal education lectures, as well as training on legal risk prevention for key business segments to ensure general legal learning by frontline staff.
- Management of intellectual property rights was strengthened to drive the conversion and innovation of technological deliverables; protection of patents, trademarks, copyrights and trade secrets was enhanced with stringent examination procedures to avoid infringement of third-party intellectual property rights; intellectual property rights quizzes were organised to foster a positive attitude towards respect for innovation and intellectual property rights.
- In strict compliance with the Advertising Law and administrative regulations promulgated by MIIT and other regulatory authorities, the advertising materials and graphics are sourced through official channels; information relating to products, costs, service contents, valid period and marketing, etc are clearly indicated on all advertisements and promotional materials; the messages of advertisements are true, accurate and easy to understand; marketing and promotion activities are conducted in strict accordance with national laws and regulations.
- Pertinent laws and regulations of national regulatory authorities are implemented in an effort to foster a telecom marketplace characterised by fair competition. Policy implementation and supervision is carried out through the three-tier regulatory regime of the Group, the provincial branches and prefecture-level city companies. The regulatory policy for the telecom market is thoroughly implemented and applied in full, while relevant administrative measures and systems against commercial bribes have been formulated in a proactive move to defend proper order in market competition.
- In 2018, the Group had approximately 750,000 economic contracts, 100% of which had been legally vetted and duly performed.

Risk prevention

China Unicom has optimised its total risk management regime on an ongoing basis with a number of administrative measures to effectively prevent operational risks and assure stable operations.

- In connection with business partners, applications are centrally processed through the PRC partners' platform and blacklisted suppliers are strictly blocked.
- The Company carried out inspection of the implementation of the internal control system, formulated administrative measures for new businesses and market risk management policies and processes, improved administrative regulations relating to information technology, formulated credit rating modules for the credit business and implemented self-assessment of internal control.
- Self-inspection and rectification for the Group and financial subsidiaries in relation to total risks were completed and the rules of procedure for the Group Financial Risk Management Committee were formulated. New measures for the administration of operating revenue were implemented and the analysis model of accrual revenue and cash inflow from sales at Group and provincial branch levels was optimised.

PROMOTING IN-DEPTH ANTI-CORRUPTION AND INTEGRITY ADVOCACY

We have continued to conduct in-depth rectification. In close tandem with the actual conditions of the Company, we have further strengthened the combination of the integrity culture and the anti-corruption measures, promoting the development of system and mechanism that “deter, disable and discourage” corruption. New achievements were accomplished in the Company’s efforts in anti-corruption on all fronts.

- In 2018, issues were identified during a specific inspection of fibre network upgrade and as a result, the Company reduced economic losses by RMB3,046 million; a “tripartite” special inspection of channels, commissions and agents was conducted.
- Inspection and examination was strengthened in 2018. Inspection of 8 provincial branches and 21 departments at the Group Company headquarters and examination of 389 prefecture-level city branches and their subordinate units as well as 2,127 county-level branches were completed.
- Improvements were made to the corporate regulations and corporate disciplinary requirements to highlight the priority of education. The revised “Regulations on Punishments Against Staff Violations of Rules and Discipline” and the new “China Unicom Disciplinary Regulations for Internal and External Transactions by Staff” were published, drawing a red line for the behavior of all staff.
- Reform of the station system for disciplinary inspection establishment at prefecture-level city branches was fully implemented. As at the end of 2018, 352 stationed disciplinary inspection groups were established and supported by 1,253 dedicated officers, which boost up the frontline supervisory force.

STRENGTHENING INCENTIVES THROUGH SUB-DIVISION REFORM

As the specific measure for the thorough implementation of the Central Government’s plan for full-scale deepened reform and an intrinsic requirement essential to the improvement of new governance under mixed-ownership reform, sub-division reform for all production scenarios represents an important driver of the Company’s sustainable development. In 2018, China Unicom was focused on the six elements of “micro-organisation, revenue and gross profit appraisal and sharing of incremental income, mini CEOs, top-down service support, IT system support, supervision and assessment regime” in its full-scale intensive implementation of sub-division reform for all production scenarios, reaping positive result in its effort to achieve maximum drive for development through reforms.

Formation of more than 24,000 sub-division performance units	Appointment of approximately 20,000 mini CEOs	More than 154,000 employees have joined the sub-division performance units	Remuneration for staff of sub-division units increasing by 20% on average
---	--	--	---

Motivating frontline staff in response to the call for “Double Creation”

Employees are willing to act for the benefit of the enterprise if the enterprise is willing to act for theirs. On top of protecting and respecting staff interests as always, China Unicom’s persistence in reform is also aimed at enabling those who are willing to undertake business goals to reap financial benefits and establishing an incentive allocation regime underpinned by the creation of correlated value that allows those who work more to earn more without maximum limits. Sub-division reform effectively brings employees and the Company together in a bond with a shared destiny based on common interests and common business pursuits, providing enormous motivation for staff to engage in business ventures.

We hold the leaders of sub-division performance units in high esteem, granting them additional powers in business operation, use of resources, staff appointment, appraisal and reward allocation, reverse appraisal and broadband construction, among others, so that they become CEOs in the true sense, fully leveraging their understanding of the market and proximity to the customers to enhance the market sensitivity and competitiveness of the enterprise. In the meantime, the sub-division CEO is accountable for the performance and business aptitude of the unit and its staff so that the manager’s accountability is commensurate with his or her authority. Greater honour and reward is afforded to sub-division CEOs with strong entrepreneurship, excellent results and outstanding abilities, so as to effectively unleash the internal vibrancy and vitality of sub-division units.

Transformation of the operation model with an efficient top-down service support regime

China Unicom has developed a top-down service support regime that facilitates “efficient turnover of the corporate management regime driven by frontline demand from the market”. The sizeable smart intermediary platform with the “front desk taking orders, intermediary platform providing response actions and back office supporting” provides the mini CEOs with support for delivery. The municipal – provincial – Group top-down service support regime provides the mini CEOs with one-stop support covering various types of services. Through the reverse distribution process from sub-division units to prefecture-level city companies, provincial branches and the Group, the business departments at all three levels are mobilised to support the requirements of the units. Mini CEOs are given the power to conduct reverse appraisal of back office support departments, driving the transformation of professional departments from “managers” to “servers” in order to support sub-division units’ faster and more efficient response to market demands and to empower frontline operations.

At China Unicom Shandong, staff enthusiasm for business venture and undertaking is significantly boosted through sub-division performing unit reform, as a large number of outstanding talents are encouraged to become mini CEOs at the frontline, in an alignment of staff and corporate interests.

Staff of the district integrated grid of Licheng District run the business of the enterprise like their own homes: their operation is Internet-oriented and they make full use of “wuji” (“無極”) and “wuyou” (“無憂”), the two major IT support systems, to increase efficiency, forming a team that is driven, competent and able to deliver. The average staff remuneration increasing by 27% over the previous year after the sub-division performing unit reform.

- Mini CEOs are given full powers in their business ventures, including the power to appoint staff, approve tariffs and make investment decisions, etc.
- Budget targets are set on an individual basis under a revenue- and gross profit-based appraisal system, whereby every single employee has targets and tasks to meet and those who work more will earn more without maximum limits.
- Cost are also allocated by unit and individual to facilitate self-initiated cost controls, resulting in the conversion of 17 energy consuming stations with annual savings in electricity charges of approximately RMB210,000. Recycling of fixed-line terminals has also increased 2.5 times, year-on-year.



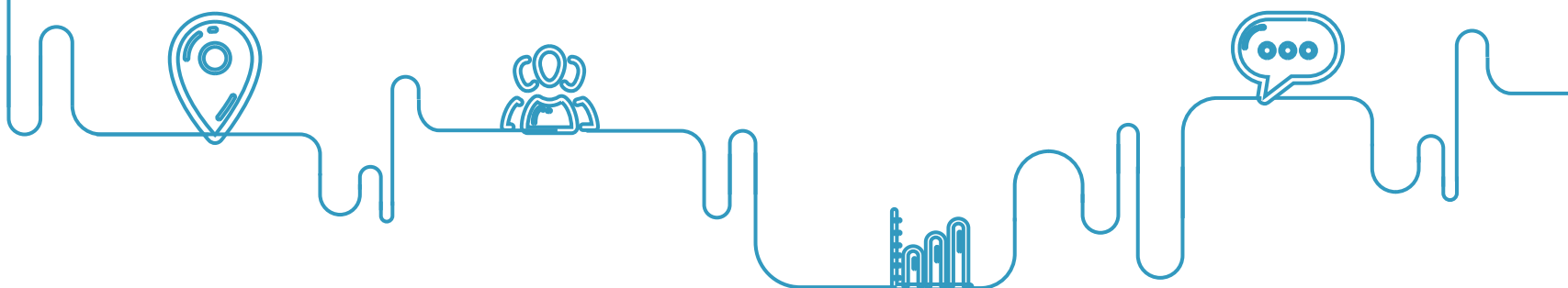
“The sub-division has provided us with a platform on which we play out our ambitions. I will commit my best effort to prove myself through results.”

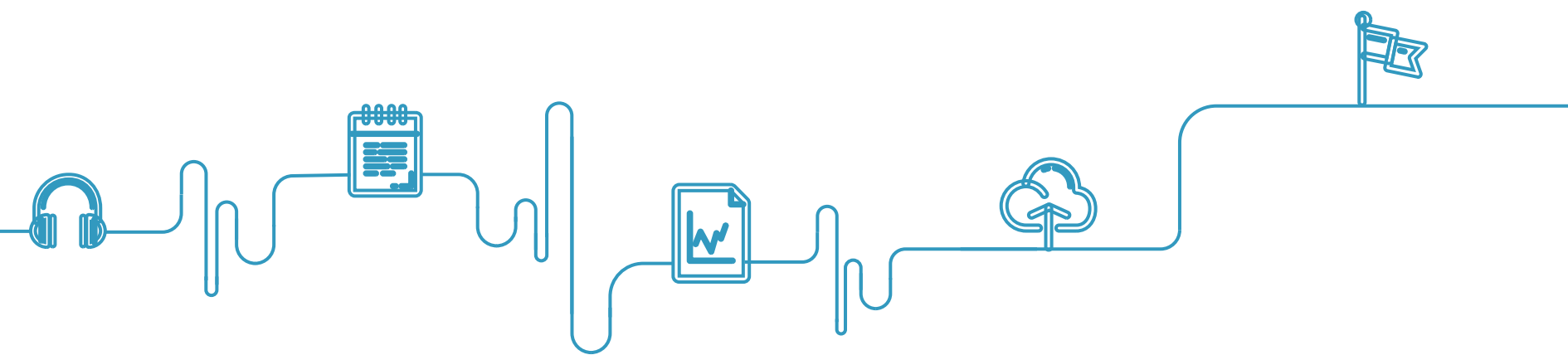
— Xu Minyu, intermediary management in Tai’an Branch in Shandong, took up the role of mini CEO at the sales service centre in response to the reform.

New DNA

DEVELOPING NEW FOUNDATION BY STRENGTHENING TRANSFORMATION

Injecting superb Internet DNA	24
Developing new system for talent supply	24
Establishing new incentive and control mechanism	25
Supporting sustainable development for staff	25





NEW DNA: Developing new foundation by strengthening transformation

China Unicom vigorously cultivates and strengthens the new Internet DNA, embedding the superb culture and DNA of Internet companies into its development, so as to facilitate the Company's transformation to Internet-oriented mindset and staff capability enhancement, solidifying the foundation for the transformative development. The Company continuously enhances social responsibility awareness and capability, to practically safeguard the legal interests of employees, resulting in amiable and harmonious labour relations, and also enhancing staff satisfaction and sense of reward, thus achieving the mutual growth of both the employees and the Company.

Measures adopted in 2018

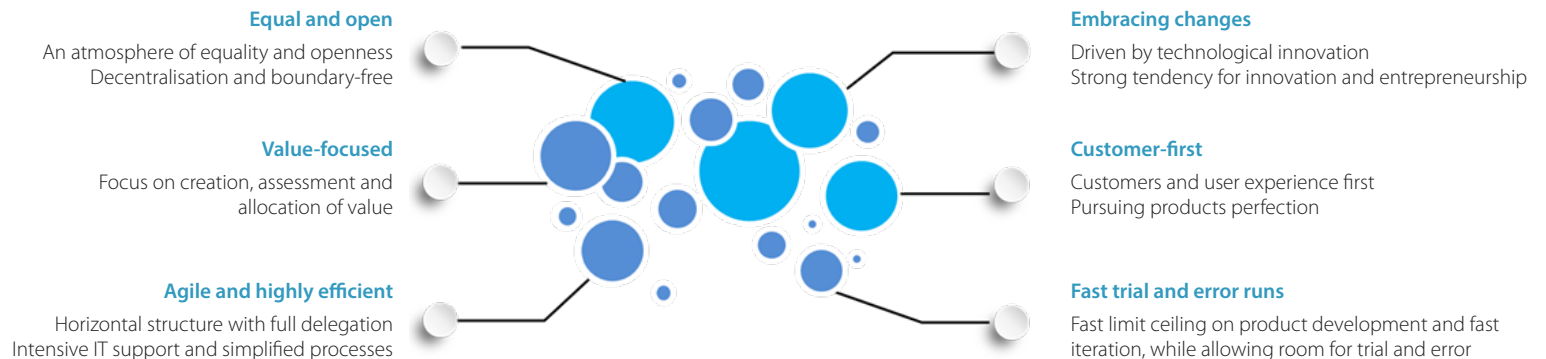
- Nearly 10,000 innovative talents were recruited to join the Company, while training in innovative ability was enhanced to inject high-calibre Internet DNA qualities to the Company.
- Staff promotion rate and salary-ranking promotion rate were 14% and 34%, respectively, for the whole Group.
- Development of the four-tier professional teams was strengthened with the appointment of 3 management talents, 216 experts, 3,540 backbone talents and 6,033 young and sharp talents.
- The Group's first granting of restrictive shares was completed.

Actions to be taken in 2019

- To further strengthen the development of training system with the provision of training in specialised abilities.
- To advance the development of the incentive resource allocation system based on value creation.
- To continue to push forward the comprehensive incentive system for implementation, while revitalising different incentive measures in order to stimulate staff vibrancy.

INJECTING SUPERB INTERNET DNA

China Unicom has further inherited and carried forward the four premium DNA of "patriotic, reform, openness and diversity", while rapidly internalising the superb DNA of Internet companies, namely equality and openness, value-focused, agile and highly efficient, embracing of changes, customer-first, and fast trial and error runs, with a view to strengthening the foundation for transformative development.



China Unicom's New Internet DNA

DEVELOPING NEW SYSTEM FOR TALENT SUPPLY

Development is China Unicom's prime mission, talents represent the prime resources for achieving development, while innovation provides the prime driving force. In ongoing improvement of the talent resources system, China Unicom has achieved higher efficiency on staff utilisation for the fundamental business and developed a special zone for talents for the innovative business, nurturing a large number of high-standard innovative teams. Moreover, strong effort have been made to develop loyal and committed high-calibre officers, amassing outstanding talents from various sources to train and promote outstanding young officers.

© Innovating and reforming the human resource system

Corporate strategies and requirements for Internet-oriented transformation were implemented. Innovative talents are separately managed, and the "418" talent programme for innovative regions was launched to intensively drive talent mechanism reform. Eight action plans were carried out in pursuit of the four working goals of "new mechanism, increment in volume, capability enhancement and efficient utilisation".

- The "new mechanism" is underpinned by the principle of "6 breakaways". Based on a business-driven and project-based operating mechanism supported by talent supply and incentives/restraints as the main approaches, a new mechanism of the special zone for talents in the innovative has been developed to facilitate "salary up and down", "staff in and out", and "post up and down".
- "Increment in volume" was achieved through 3 programmes, namely "U Graduates", "Elite Hunt" and "Flowing Water", whereby talents were sourced from recruitment of fresh graduates, head-hunting for high-end talents and mobility of existing staff. The headcount of innovative talents increased from 7,000 to 16,000.
- "Capability enhancement" was achieved through the establishment of an internal talent grooming mechanism and aptitude standards with the implementation of 3 programmes, namely "U Growth", "Engine" and "Accelerator", which help fresh graduates, current staff and business innovation personnel to enhance their IT technology and innovative capabilities. The Group organised 6 sessions of "demonstration classes" in connection with the 3 programmes with a total enrolment of 25,480, forming a system of taught courses as well as online learning resources.

- “Efficient utilisation” was achieved through the “co-creation programme”, under which talents were deployed on a project basis across different organisations to enhance the utilisation of medium- to high-end talents. The “sharing programme” was implemented to facilitate the sharing of knowledge precipitation and know-how experiences, in order to procure value creation for the talents. In 2018, there were 77,000 users in the talent community and more than 50 crowd funding projects.

© Emphasis on outstanding young officers selections

- Stringent standards are adopted with an emphasis on orientation. Focusing on sourcing and identifying outstanding young managers among grassroots frontline staff and seeking to promote outstanding young managers who are driven, competent and able to deliver.

- Improvements were made to the method of candidate nomination. A normalisation work group was set up to conduct survey on outstanding young managers, followed by the establishment of outstanding young manager teams at various levels for recommendation to superiors on a meritocratic basis. The nomination of candidates is conducted by way of a combination of vertical recommendation and horizontal recommendation, general survey and selected survey, as well as graded appraisal and direct appraisal, with a special emphasis on the identification of outstanding young management talents in daily appraisal, open selection and open recruitment.

- Sufficient supply was ensured through graded tracking. The Group Organisation Department tracks the development of outstanding young management talents aged under 45, with a special focus on those under 40 in the innovative segment. The organisational departments at various units track the development of outstanding young management talents aged under 35.

ESTABLISHING NEW INCENTIVE AND CONTROL MECHANISM

On the organisational level, coordinated growth of incentive resources and value creation is accomplished based on market-oriented allocation. On the individual level, coordinated growth of remuneration level and individual contributions to business results is accomplished based on differentiated allocation.

- Progress has been made in the normalised operation of the promotion and incentive regime. On Group level, the staff promotion rate and salary-ranking promotion rate for 2018 were 14% and 34%, respectively.

- The development of the four-tier professional teams has been enhanced, as four-tier talent succession teams comprising close to 10,000 people, including managers, experts, backbone officers and young talents, have been formed in 12 specialised segments, including Big IT, network maintenance and industry Internet, among others.

- Separate management of talents in innovative segments has been implemented, while deeply carrying out the mechanism reform for talents, with a view to providing effective support for the innovative business through the establishment and implementation of a dedicated incentive resource mechanism.

- The sub-division reform for all production scenarios has been advanced on all fronts with the establishment of a profit-sharing mechanism on incremental income for sub-division units, so as to facilitate the sharing of the outcome of reform by all talents. Remuneration for frontline staff has increased by 20% as a result.

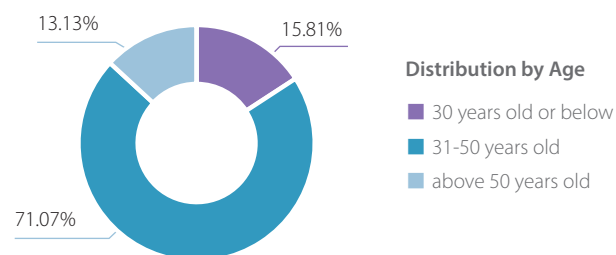
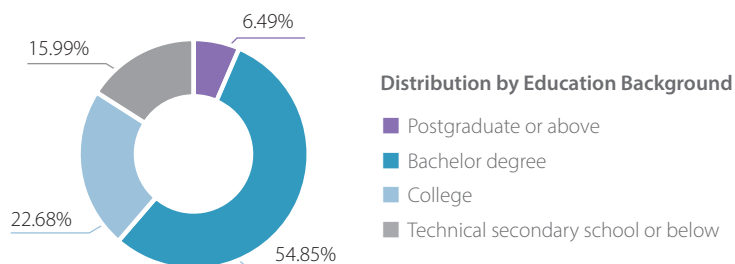
Group-level staff promotion rate **14%**, Salary-ranking promotion rate **34%**

3 management talents, **216** experts, **3,540** backbone talents and **6,033** young and sharp talents were appointed

China Unicom Nanning in Guangxi province developed a multi-level, extensive sustainable talent value and honour scoring system which incentivise by awarding primarily honours and, to a lesser extent, materialistic rewards. With the dual scoring system to foster a passionate atmosphere and providing assurance through the system, it enabled China Unicom Nanning to further identify, nurture and retain talents, as well as to energise the teams and stimulate staff motivation, as well as creativity.

SUPPORTING SUSTAINABLE DEVELOPMENT FOR STAFF

DNA is a key determinant for success and the key factor of DNA is people. In firm adherence to the belief that “strong personnel and superb DNA thrive the enterprise”, China Unicom is committed to strengthening the key factor, which is people. Human resources represent the primary resources of the Company and the source of the power driving the Company’s healthy development. Continued efforts are made to concerning staff development and enhancing staff satisfaction, so as to create a harmonious working atmosphere. The Company genuinely cares for the staff and the staff is committed to the Company’s development.



Employees (person)	Employees newly recruited (person)	Gender Distribution (Male/Female)	Proportion of ethnic minority employees (%)	Turnover rate (%)
260,964	10,869	1.50 : 1	6.77	2.16

Note: Employees include mainly in-service employees and personnel under labour dispatch arrangements

China Unicom Employee Demographics

Protection of basic employees' rights

Employment in strict compliance with laws

- In strict implementation of pertinent provisions of the "Labour Contract Law", the Company signs labour contracts with 100% of the employees and protects staff rights for rest and leaves by implementing a paid leave system. Employees are provided with pension, medical care, compensation for work-related injury, and maternity and unemployment insurances, while an enterprise annuity fund has been set up for employees on a voluntary basis. Coverage of annual physical examination is offered for all employees, as is job retention after maternity leave/paternity leave.
- The Company places a strong emphasis to safeguard human rights and respect for personal privacy. Discrimination of age, ethnicity and gender toward employees during recruitment and promotion is prohibited. Child labour and forced labour are strictly forbidden. An employee rights protection mechanism has been established to ensure a smooth channel for staff complaints. No alleged discrimination cases were reported in 2018.
- The Company strictly complies with the "Interim Provisions on Labour Dispatch" and continuously promotes labour optimisation and standardised management. The policy of equal pay for equal work has been implemented in accordance with national requirements, resulting in a rising level of employee satisfaction.

Rights and interests protection system

- To foster harmony in labour relations, branch companies at all levels have established a tripartite democratic management system to open up channels for staff to voice their reasonable requests. Labour dispute mediation groups are formed at all levels throughout the Group. A labour relations consultation committee is set up under the Group Trade Union to conduct research on collective contracts, labour dispute mediation and services for staff so as to protect the lawful interests of staff.
- All 31 provincial branches of China Unicom have comprehensively implemented provisions on collective contracts, while 11 of them have additionally entered specialised agreement under "collective contract for protection of female employees" and "collective contract for wage negotiation" to protect the lawful interests of staff.

Occupational health and safety protection

Safe production represents a top priority for China Unicom. In rigorous implementation of the "Production Safety Law of the People's Republic of China" and other relevant laws and regulations, production safety inspection is conducted at all levels on a regular basis to meet the view of "specific checks based on past lessons, focused checks on important aspects, and in-depth checks on issues identified". Rectification is facilitated through inspection and remedies are carried out as and when problems are identified. The safe production accountability system and relevant supervision and appraisal has been enhanced, while preliminary proposal management and emergency response action has been deeply integrated with production operations. Emergency drills have been strengthened to improve the capability to respond to emergency as a preemptive move. A campaign known as "Snapshot on hidden danger in the surrounding" to enhance safety awareness is launched for staff to spot and check on potential hazards and risks. Remedial measures on safety hazards have been conducted to create a sound environment of safe production.

Safe production training: **40** sessions

Coverage rate of safe production training:

100%



A fire drill conducted at China Unicom Shandong to train staff in emergency response while enhancing fire safety awareness and promoting skills to escape fire.

Enhancing staff quality and capability

Ongoing education and training

- Efforts have been made to drive the development of training course materials. The Company offered long-term training with a special focus on network technologies through the provision of 107 classroom or online courses over 325 learning hours. 80 business related courses were organised focusing on Internet-oriented transformation, innovative businesses and new staff induction.
- Innovative training methods are implemented through organising "O2O learning classes" for all product managers in the Group. The tripartite online learning platform comprising the Network College, "WO Academy" and "WeChat Academy", with focus in the Company's key businesses and operations, launched 10 sessions of online learning programmes and registered a total enrolment of 28,000. The online live broadcast recorded over 30,000 views, while the subscriber version of "WeChat Academy" on WeChat saw 103,000 followers registered.

- A series of “Frontline Talent Fulfillment” staff skill contests were launched. In 2018, 4 group-level contests, including Big Data Innovation, e-Commerce, Cybersecurity and B Field Innovative Development (Ladder to the Heavenly Palace), and 22 provincial contests were organised. A total of 210,000 staff participated in different skill and labour contests throughout the Group.

- Continuous and increased efforts to develop a more institutionalised, structured and standardised system for education and training, while providing targeted training in specialised skills for key groups such as managers, outstanding young management talents, specialists and mini CEOs.

11,527 online courses were held

Enrolments in online learning platforms exceeded **11.25** million

◎ Managers at various levels

17 sessions of leadership training classes were organised with a cumulative enrolment of more than 1,500 attendees; utilising the “One School, Five Institutes” premium external training resources to select senior management officers and professional core employees over 25 times.

◎ Outstanding young management talents

Two sessions of advance learning classes were organised in the Spring and Fall terms, with 88 potential outstanding management talents being selected for medium- to long-term study with study leaves.

◎ Professional sequence staff and strategic talents

164 training classes on specialised skills learning were organised with a special focus on professional sequence staff, cultivating 23,547 attendees for core backbone talents. The “U Growth Programme”, “Engine Programme” and “Accelerator Programme” were orderly rolled out, and 6 sessions of Group-level training were completed with an enrolment of 25,480 attendees.

◎ Training in new technologies and new businesses

80 courses on subjects such as Big Data, AI and Blockchain were launched on the online school, with a total enrolment of 2 million from the Group participated in the learning. 72 training sessions targeting key groups and professional on innovative ability were held focusing on innovative business and Internet operation, and Big IT; and 4 sessions of 5G technical training were organised as part of the 5G deployment, so as to form a professional 5G wireless team comprising more than 100 staff deployed across the country.

◎ Building of the internal job position accreditation regime

Internal accreditations for three positions, namely retail specialist, smart home engineer and market auditor, were launched, while the publication of the “Guide for the Development of China Unicom “Smart Home Engineer” Training and Accreditation Regime” was released as a compilation of graded job position accreditation standards and training course outlines by expertise in relevant disciplines, resulting to the development of 73 accredited online courses and train-up of 80 lecturers and 120 appraisers.



China Unicom Tianjin organised contests based on servicing skills and industry Internet skills, which served as practical platforms for interaction and sharing with a competing atmosphere underpinned by comparison, learning, catching-up, mutual aid and the desire to exceed. Through these contests, the aim of enhancing learning, production and harmony through competition were achieved.

◎ Encouraging staff participation in management

China Unicom has full respect for staff rights in information, participation and supervision and places a strong emphasis on staff participation in corporate management. Staff participation in corporate decisions not only enhances employees’ autonomy and initiative, but also contributes to more scientific decision-making, thereby fostering a positive atmosphere for the mutual development and progress of the Company and the staff.

The Group has established an operating mechanism for the periods when the general meeting of staff representatives is not in session to inspect and procure the rigorous implementation of the resolutions of the general meeting of staff representatives of the Group by relevant units and departments. The e-platform for staff representative proposals has provided a closed-loop mechanism for handling staff representative proposals and other reasonable staff requests. In 2018, 15 provincial branches departed from the customary practice of holding general meetings of staff representatives only at the beginning or the close of the year and convened more than 2 meetings in a year, resulting in a notably higher frequency of general meetings of staff representatives compared to previous years.

The “Corporate Affair Open Public Forum” of China Unicom has facilitated mutual understanding and support between the management and staff. The provincial branches have established a system to normalise the corporate affair open public forum, holding 381 briefings to inform staff on important matters such as the achievement of periodic business goals, appointment and removal of officers, procurement tenders, staff benefits and others.

523 general meetings of staff representatives convened

1,295 items of matters involving staff interests heard and considered

China Unicom Shandong encouraged full staff participation in management. Through organising “Massive Reflection and Deliberation” as an opportunity for service quality upgrade initiative, staff of all positions participated actively in the initiative to make suggestions. During the event, a total of 406 suggestions for improvements were collected and 117 of them were adopted, involving system support, service processes and standards, and other areas.

In 2018, the Group's General Manager, together with general managers of relevant departments from the headquarters, met twice with all the Group staff to interactively discuss sub-division reform for all production scenarios, Internet-oriented transformation and other topics. The number of online participants reached 23,000 at peak. General Manager's online activity system was introduced in 21 provincial branches. Actions were taken to manage staff requests in a timely manner which enhanced staff recognition and support for corporate reforms.

447 “Online Meeting with General Manager” sessions held, reaching out to **172,000** employees

10,463 staff queries raised, of which **4,653** were given instant response by the General Manager



General Manager of China Unicom responded to staff queries during the “Online Meeting with General Manager” session under the “Group CEO Vs Mini CEOs” initiative.

China Unicom Beijing branch focused its “Online Meeting with General Manager” activity on topics relating to reform development such as staff benefits and remuneration, among discussion on other general issues, to address topics which employees were most concerned. A specialised human resources event was also organised. China Unicom Shanxi branch launched special programmes in connection with sub-division reform for all production scenarios with a special emphasis on the provision of valuable references for reform, bringing into full play the positive effects of two-way communications on fostering unity and solidarity. In addition to live interaction, China Unicom Heilongjiang and China Unicom Fujian branches further provided a 7*24-hour general manager's letter box for employees' queries and reviewing the comments received from time to time, in order to handle staff demands on a real-time basis.



Care for the well-being of staff

In adherence to the principle of serving our staff, close communication and care are the keys to show concerns and make efforts to resolve the most practical issues directly affecting the employees. Initiatives such as leisure and tournament activities, improvements in workplace conditions and care for staff healthcare have resolved the practical difficulties of staff and warmed the hearts of employees.

Comprehensive employee services system

- A system of summer and winter break daycare groups was built for the employees, in which 220 daycare groups was established and nearly 7,000 children benefited from the care.
- Improvements were made to the workplace conditions for junior staff, while a construction fund of RMB53.19 million was committed to “Five Small” construction across 17 provinces. The conversion of 4,228 junior units was completed.
- Attention is paid to the special needs of female workers through hosting talks and forums on female workers' rights and the Marriage Law, as well as applying health insurance for female workers and promoting special services such as breastfeeding and exclusive car parking for pregnant staff. Collective contracts for female workers have been signed to standardise and institutionalise female workers' rights.
- Exploring the development of an exchange caring programme to concern for employees who work in foreign locations, showing care for overseas employees on work and personal life and to provide timely assistance.

© Rich variety of cultural and recreational activities

China Unicom is actively engaged in promoting culture and health among grassroots staff. Taking actual conditions into account, each branch company encourages grassroots staff to take part in various cultural, artistic and sporting activities based on personal interests and preferences. Such activities are very much welcomed and loved by grassroots staff and have greatly enhanced employees' sense of belonging, honour and reward and staff morale, to the benefit of development in corporate culture.

China Unicom offers strong support to the promotion of the Ping Pong (table tennis) culture and the inheritance of the spirit of this national game. Strategic partnerships with Chinese Table Tennis Association and International Table Tennis Federation have carried on through four Olympic cycles. "Table Tennis at WO" tournament continued to be organised in 2018, featuring teenager divisions and table tennis culture promotional activities, setting a good example in the encouragement of universal participation in sports.



National Finals of 6th China Unicom Table Tennis Challenge



Mr. Zhang Xielin, former head coach of China's National Women's Table Tennis Team, supported to train the young players.



China Unicom Software Research Institute hosted a speech contest: "Growing with Reform"



China Unicom Guangdong Staff Sports Meet



China Unicom Shandong Outward bound training



China Unicom Tianjin Fun Sports Meet

© Care for staff health and development

China Unicom highly concerns about the development of staff health. In 2018, the Company continued to commit to staff assistance programmes and improvements to the medical protection system, aiming to enhance the sense of reward and happiness for the staff.

The Company implements an EAP aid programme on an ongoing basis, not only making continuous efforts to enhance the promotion and education of psychological health, evaluating on training, and providing platform for consultation and counselling, but also enhancing to build a professional psychological consultation team. Currently, the Group has 300 certified EAP consultants and psychological counsellors, and psychological counselling services have been rolled out extensively. In 2018, more than 40,000 individual psychological consultation sessions were conducted.

In addition to providing various staff health insurances, the branch companies also further explored on more comprehensive medical protection solutions.

China Unicom Fujian developed and commenced the operation of a "health appointment" platform, covering all grassroots staff in the province, developing a green channel to solve difficulties faced by grassroots staff who want to seek specialist consultation at "major hospitals". The trade union also engaged well-known medical experts to provide consultation visits, enquiry services and medical check-ups in community campaigns.

China Unicom Heilongjiang started the first "Staff Health Cottage" in the province to provide numerous free services to staff, offering free health checks and large-scale medical aid campaigns targeted mainly at staff of grassroots level units.

China Unicom Yunnan organised rehabilitation activities for frontline staff of branch companies in the border regions and Tibetan regions.

China Unicom Zhejiang organized staff rehabilitation for more than 3,000 frontline employees, including over 1,700 contract or dispatch workers. The initiative enhanced corporate solidarity and was widely praised by the employees.



China Unicom has purchased critical illness insurance for staff. For the year, 6,016 claims with a total amount of RMB41.48 million were paid through critical illness insurance and the staff mutual aid fund. Staff sense of belonging has been notably strengthened as a result.

China Unicom opened files for 5,245 employees who were subject to various difficulties to procure real-time information of their problems, so that assistance plans were drawn up and put under dynamic management to make sure no single employee was left out.

RMB30.22 million in contributions to staff aid

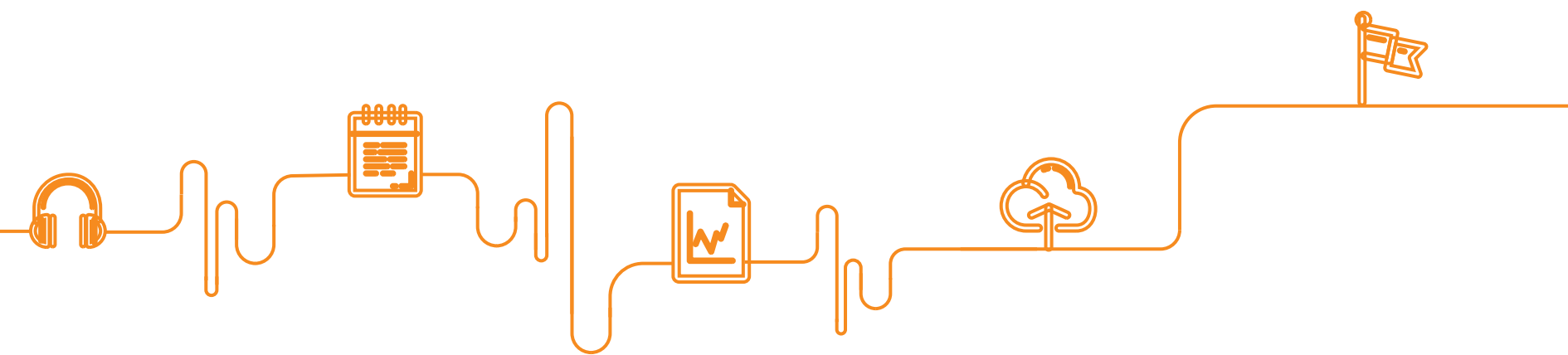
RMB28.53 million in contribution to consolation fund

New Operation

EMBARKING ON NEW INTERNET-ORIENTED TRANSFORMATION

Constructing smart premium networks	32
Enriching smart application products	34
Enhancing smart service standards	36
Maintaining a secure cyberspace	39
Persisting in low-carbon green development	41
Sharing benefits with society	46





NEW OPERATION: Embarking On New Internet-oriented Transformation

The acceleration of the Internet-oriented new operation with full force is an important means by which China Unicom implements the new development philosophy, and is closely related to requirements such as customer-centric perception and experience, network security assurance, low-carbon green operation and delivery of social benefits. As a responsible large-scale state-owned telecommunication enterprise, China Unicom concerns itself not only with economic benefits, but also social and environmental benefits, in the course of transformation into an Internet-oriented operation, in order to share harmonious development with the society.

Measures adopted in 2018

- Implemented universal information access service with a total of 987,000 4G base stations in service covering 90% of the population, and abolished data “roaming” fees.
- Enriched “Smart + life” applications by creating an integrated privilege system and establishing a home Internet operation centre.
- Customer satisfaction continued to improve as NPS increased by 13 points and service by 6 points.
- Safeguarded emergency telecommunication, strictly cracked down on telecommunication frauds, ensured information security for the public and maintained social stability.
- Practised low-carbon development through energy-saving technologies, paperless office, waste recycling and innovative green applications. More than RMB100 million in dedicated funding was earmarked for energy conservation and emission reduction in 2018.
- Continuously contributed to the society with RMB11.04 million of donations to third parties in 2018. Took part in volunteer activities with the number of registered volunteers reaching 44,000.
- Enhanced customer services with new technologies and new channels as the number of users served through Internet channels reached 31.65 million.
- Enhanced system enquiry functions to ensure consistency in account balance enquiry for all channels, and improved the payment functions for various services on the web and in the mobile app.
- Conducted a universal staff service campaign under the theme of “100x dedication and 10/10 satisfaction”.

Actions to be taken in 2019

- To advance the universal information access service and narrow regional digital divide.
- To engage in emergency telecommunication assurance and further purify the cyberspace.
- To conduct ongoing NPS assessment and seek consistent improvements in service means and channels, in order to continuously enhance customers’ perception and word-of-mouth.
- Taking into account people’s social circles, to further expand channels through closer cross-sector cooperation in order to better fulfill the telecommunication needs of local people.
- To focus on electromagnetic radiation control and further introduce innovative green applications.
- To further improve the Company’s resource and service regime, launch external donation programmes, and expand the Company’s volunteer team in an active move to foster a civilised culture.

CONSTRUCTING SMART PREMIUM NETWORKS

In active implementation of the Cyber Superpower strategy, China Unicom earnestly engaged in network optimisation, evolution and speed upgrade, and built premium networks in a holistic manner to provide better services to its customers.

Creating the ultimate network experience

China Unicom is dedicated to building premium networks. It cares about user experience and seeks to provide customers with high-quality networks with broad coverage and high speed.

• **Staying ahead in terms of 4G network speed and offering lag-less experience in HD videos:** In 2018, China Unicom made a total investment of RMB 17.83 billion in 4G networks and had a total of 987,000 4G base stations in service covering 90% of the population. With the employment of technologies such as Big Data and AI, we precisely predicted network service volume and provided effective solutions to key customer complaints to ensure good user perception. According to the statistics of Broadband Development Alliance, China Unicom stayed ahead of its peers with a 4G download speed of 23.57Mbps in 2018.

• **Speed upgrade for home broadband for 7 years in a row:** In 2018, China Unicom made a total investment of RMB9.16 billion in broadband and data networks. The total number of our broadband ports reached 215 million, of which FTTH ports account for 82.3%. The mainstream speed for home broadband increased to at least 200M, while ongoing improvements were made to the Smart WO Family Package with options available for family sizes ranging from 2 to 5. Customers can choose according to their needs, enjoying maximum value and convenience.

A total of **987,000** 4G base stations in operation

4G population coverage reached **90%**

To offer more satisfactory network experience to small community residents, China Unicom Shandong branch invested RMB154 million in the city of Weifang to carry out 417 conversion projects in the old communities to facilitate 200M+ connection for 400,000 users.



Removal of aerial "spider webs".



Rectification of network boxes and cable hubs.

China Unicom Sichuan branch employed multi-dimensional analysis on the Big Data platform to enable rapid network construction on a rolling basis in response to users' demand. As a result, all cities at township level or above in the province achieved contiguous 4G coverage. Coverage along airport expressways, railways and high-speed railways reached 94%. Network NPS improved by 5.7% year-on-year.

China Unicom Jiangxi branch created "WO Mini Maintenance", a network data housekeeper, in a breakthrough from traditional models, resulting in significant enhancement of network maintenance efficiency. It could better fulfil customers' needs with the aid of cross-platform intelligent analysis, with a data accuracy rate of 99.3%.



Cross-platform data interoperability for the safeguarding of our premium networks

With the implementation of its sixth speed upgrade and tariff reduction, China Unicom Beijing branch generally upgraded its broadband users to 100M with 200M as the mainstream speed. Its broadband network equipment were evolving towards 10GPON with 1,361,200 users getting 1G capability. The network fully meets the requirements of 2K/4K HD video services and largely meets those of AR/VR services, enriching the daily life of our customers.



Advancing intelligent network evolution

While keeping up with its existing network development, China Unicom continued to explore future-proof intelligent network architecture and evolution strategy, and make its network more centralised, flexible and intelligent in the transition to an Internet-oriented network operation, providing customers with agile, self-service, online and personalised network services.

- The construction of the next-generation CUBE-Net 2.0+ architecture has been expedited, with a view to gradually achieving network cloudification, automation and intelligentisation based on SDN/NFV, cloud, ultra-broadband, AI technologies, among others.
- Through the integration of end-to-end differentiated servicing ability for mobile networks, we accomplished integration with common APPs, with a daily average of more than 1 million successful service calls and nationwide coverage.
- Major efforts were made to drive the cloudification and virtualisation of core networks to provide a foundation of cloudified networks for IoT and 5G development.
- We strengthened proprietary research and development in network software, embraced open-source technologies, and promoted network decoupling and open-up in order to expedite network re-architecture with the help of an open technological ecology.

In connection with the development of China169, the backbone network, we fully deployed IPv6 in active implementation of the "Action Plan for Advancing Large-scale Deployment of Internet Protocol Version 6 (IPv6)". We expanded the functions and scope of application for the deployment of automated, centralised SDN controllers to further enhance the quality of selected important services. We maintained our leading position in the Internet sector, underpinned by an average intranet latency of 32.22 ms, outperforming other carriers for 32 consecutive months. As at the end of 2018, our domestic backbone networks had a capacity of 240T, while our domestic IPv6 interconnection bandwidth and international interconnection bandwidth reached 3112G and 2427G, respectively.

In connection with the development of industry Internet, a number of new features went online after development and testing were completed. Networking tests and automated connection with Ali Cloud and Tencent Cloud were completed, enabling an automated provisioning workflow. The construction of connection resources in two batches with respect to 139 self-owned DCs and more than 40 cloud service providers' DCs were completed. The integration of IPRAN networks with Industrial Internet for 334 cities were completed. The upgrade of SDN functions for PE equipment across the whole network were completed, whereby all local networks are able to meet the requirements of corporate cloudification and inter-cloud connections.

China Unicom Guangdong branch deployed VXLAN switches on the edges of carrier networks in 21 cities to facilitate fast data traffic diversion and dispatch and seamless switch of services across the cities, in preparation for the formal SDN/NFV deployment. China Unicom Guangdong branch will step up with the deployment of 5G carrier networks with the gradual introduction of new technologies such as SDN, NFV and MEC, etc, to realise centralised network resources, agile services and open capabilities.

At the 2018 Mobile World Congress (MWC) held in Barcelona, China Unicom, ZTE and Intel jointly issued the “China Unicom White Paper on Edge-Cloud Platform Architecture and Industrial Ecology” to announce the official commencement of large-scale Edge-Cloud trials and construction of pre-commercial networks in 15 provinces / municipalities covering a range of scenarios such as campuses, stadiums, industrial parks, industrial Internet and the Internet of Vehicles. We jointly demonstrated Edge vCDN and edge intelligent analysis services at the Intel booth.



Offering more concessions through tariff reduction

China Unicom has brought more concessions for hundreds of millions of users by actively advancing the key tasks of “four reductions and one abolishment”.



Threshold of the ice cream packages lowered to allow maximum freedom in data usage.

- **Uniform data tariffs nationwide:** With effect from 1 July 2018, the data “roaming” fee was abolished to the benefit of more than 200 million users.

- **Substantial reduction of international roaming/Hong Kong-Macau-Taiwan roaming rates:** data roaming tariffs for 143 countries and regions were lowered by an average of 46% and a maximum of 97%. Daily-rate unlimited data pack services are offered in 174 countries and regions, while the data allowance in some packages has doubled.

- **Facilitating data freedom for the public:** as at December 2018, the average unit mobile data tariff decreased by 59% compared to the end of the previous year. The threshold of the ice cream package tariffs was lowered and multiple users are free to share data. Daily average 4G data usage reached 62PB, representing a year-on-year growth of 165%.

- **Innovative launch of Internet packages:** launched Tencent King Card which offered unlimited dedicated data for over 100 APPs. Jointly launched a diverse range of Internet packages, such as Ant Treasure Card, JD Strong Card and Weibo Micro-Card, etc. to satisfy the personalised needs of users and let them enjoy the benefits of data to the fullest extent.

- **Home broadband and integrated concessions:** Greater concessions for the integrated

fixed-line + mobile packages were offered, as home broadband tariffs as at December 2018 decreased by 41% compared to the end of previous year.

- **Contributing to mass entrepreneurship and mass innovation and accelerating the development of smart enterprises:** the unit price of SME Internet leased-line bandwidth was reduced by 36%, with special concession for the “entrepreneurial and innovative” enterprises.

- **Offering benefits to the military, medical and education sectors in fulfilment of our social responsibility:** as comprehensive contribution to the society, preferential services, concessionary packages, discounts on mainstream products and exclusive direct fibre lines are offered to the military, medical personnel and teachers.

ENRICHING SMART APPLICATION PRODUCTS

Leveraging its basic telecommunication networks and strengths in novel technologies, China Unicom has made strong efforts in areas such as smart living and smart industries, introducing a wide range of “smart+” applications to facilitate more convenient and intelligent living for the public.

Forging a smart brand

In 2018, China Unicom continued to intensify its brand image. As a corporate brand, China Unicom owns outstanding brand assets which are innovative, progressive, trustworthy, open and cooperative. As a brand in government and corporate services, China Unicom is required to satisfy government and corporate customers’ demand for customised and amalgamated innovative services and for a brand with formidable strengths in network and technology. As a brand in mass-market services, “WO” is oriented towards the general consumers and is required to meet general consumers’ need for services that suit their interests, offer more convenience in perception and acquisition, as well as the need for a young and vibrant brand with a strong sense of affinity.



The China Unicom Brand Regime



The cartoon character of the "WO" brand

Enjoyment of smart living

◎ Prioritising customer experience

In 2018, China Unicom launched a universal staff service campaign under the theme of "100x dedication and 10/10 satisfaction", whereby all channels were engaged in united actions and all staff acted in concert to genuinely embrace the servicing culture and spread the message "100x dedication and 10/10 satisfaction" through words and actions. They provided genuine services to customers with the caring attitude and satisfactory and professional quality of service typical of China Unicom staff. In the meantime we continued to enhance compliance management over business activities with the establishment of a system of assessment and inspection to ensure ongoing improvements in user experience of products and services.

- Based on NPS survey results, media monitoring and customer satisfaction polls, we conducted data analysis on the perception of the same user across 5 scenarios and 43 dimensions, including physical business outlets, mobile APPs/online stores, 21 online customer service, broadband installation, relocation and maintenance and international roaming surveys, among others, in order to construct an integrated cloud map tracking customers' experience with our services from "service sign-up" to "service feedback".
- For our broadband service, we sought to formulate solutions in four critical aspects: convenient customer experience, automatic order workflows, one-stop service for installation and maintenance, and end-to-end order monitoring.
- Engaged in proprietary research and development of APPs such as WO Sales Made Easy and WO Marketing. We allayed customers' concerns on information security by simplifying the ordering processes, and enhanced convenience and fast response to requests for better customer perception.

In the course of upgrading wireline telecommunication facilities of old communities, China Unicom Weifang branch in Shandong has persisted in a customer perception-oriented approach. Through on-site announcements, phone or SMS notifications, WeChat customer service and other channels, advanced notices on the upgrade arrangements were given to customers in the communities to minimise inconvenience caused to them. Communications with customers emphasised that the upgrade would facilitate "three-network integration" and "fibre Internet connection" with higher speed and greater stability, in order to win residents' support for and understanding of the upgrade work. By allowing customers to choose the timing of upgrade and providing free replacement of upgrade facilities, maximum customer support was received, in a genuine realisation of "100x dedication and 10/10 satisfaction".



◎ Innovative 4G products

In 2018, China Unicom continued to introduce improvements to its Internet-oriented product portfolio and enrich its data product portfolio. Launching scenario-based marketing via APP touchpoints of our Internet partners, while utilising each other's resources to facilitate deep product integration, we established a complete and flexible 2I2C application and privilege regime, providing customers with products of higher value-added and services of better quality.

- Our 2I2C service has been focused on new areas for cooperation, such as terminal, express delivery and travel, with the launch of 2I2C products with Xiaomi, YTO Express and Ctrip. We iteratively optimised products of existing cooperation, as we continued to enhance the breadth and depth of our product coverage.
- Our 4G contract package portfolio has been simplified to drive the transition from contract products to data products.
- We continued to enhance promotion of and optimise our Ice Cream Package.
- For mobile video, we embarked on comprehensive cooperation in content + data + membership benefits with online video APPs, teaming up with ten major partners including Tencent, iQIYI, Youku, MGTV and bilibili, etc. Products based on membership benefits have provided better video experience and services to the wider customer base of China Unicom.
- The Company was not involved in any return of sold or delivered products because of safety or health reasons.

© Enriching our integrated services

In 2018, China Unicom continued to implement its business philosophy of Big Bandwidth, Big Data Traffic, Big Integration and Big Video, as it consistently enhanced its “Smart WO Family” integrated products targeted at general home users, developing integrated home information service solutions on the back of high-speed broadband, Big Data Traffic and a wide array of video contents in a move to construct a smart home ecosphere and speed up the commercialisation of smart home products.

- We have built a home Internet operations centre to conduct centralised operation of services such as smart gateways, smart homes and home clouds.
- We installed “optical modem + wireless router” two-in-one smart gateway terminals for new broadband users, allowing them to carry out intelligent control, remote management and the download of applications at the terminal via a client APP.
- Our smart home engineer team continued to upgrade their servicing ability to provide a full range of services for home networks and comprehensively fulfil customers’ Internet needs at home.
- We provided services such as smart speakers with voice call service, intelligent video cameras and home cloud to meet the needs for voice calling, video surveillance, infant care and elderly care at home.
- Our video subsidiary currently has an HD video inventory of 100,000 hours, and we have also acquired a full range of TV contents from iQIYI in a strong effort to provide customers with richer product experience.

🌐 ENHANCING SMART SERVICE STANDARDS

In line with its customer-centric principle, China Unicom seeks to serve customers through its business outlets located across the nation, customer service hotline “10010”, online stores, SMS, official Weibo and WeChat customer service accounts, making ongoing improvements to its service regime and operation and service modes in sustained enhancement of the standard of customer service.

📞 Enhancing counter service

In 2018, China Unicom continued to enhance the service standard of its counter channels and improve the efficiency of self-owned business outlets.

- Focusing on customer perception and critical issues in frontline services, we rolled out QR code payment at self-service terminals and began to optimise the operational workflows at our business outlets, with a view to solving the problem of “two long-waitings”.
- We continued to optimise the billing process and further simplified our front desk operations, shortening the duration of the sign-up process for integrated services at counters from 35 minutes to 12 minutes.
- Support for the business outlet performance assessment system has been strengthened on the back of the WO Store platform.

Tmall Smart Living Pavilion, a flagship New Retail store jointly developed by China Unicom and Alibaba, is a fashionable physical store focused on selling digital 3C products and powered by advanced New Retail technologies. The store design is novel, fashionable and cool. Tmall Smart Living Pavilion not only provides a new shopping experience with customised offers or products through interactive scanning of on-site QR codes, but also supports convenient online shopping, allowing customers to place orders online via mobile apps and pick up their orders in-store or through direct delivery. Merchandise sold at the store are mainly the latest digital gadgets, allowing shoppers to experience tangibly the charm of various trendy digital products at ease.



China Unicom's smart living experience store



China Unicom's smart living experience store



Inside China Unicom's smart living experience store

Expanding Internet services

China Unicom has been actively developing and enhancing Internet-based customer services. To guide users' migration from traditional service channels to online self-service channels, we have held 28 promotional sessions and introduced the live broadcast of PK games, including 29 million showings of the "Most Beautiful Customer Service Representative" Tournament resulting in significantly enhanced servicing abilities and influence. Over 97 million customers are using Internet channel services, representing a growth of 4.4pp in user penetration. Our fan base grew by 69.4% on a cumulative basis, while the volume of Internet services grew by 35.2%.

- Customer service hotline: we continued to conduct "customer hotline perception enhancement initiative" to optimise IVR levels and broadcast contents and to enhance our ability in online problem solving. The quality of manual services of our customer service hotline has increased by 1.9PP, and the overall problem-solved ratio of our hotline stands steadily at over 96%, reflecting a notable rebound in customer perception.

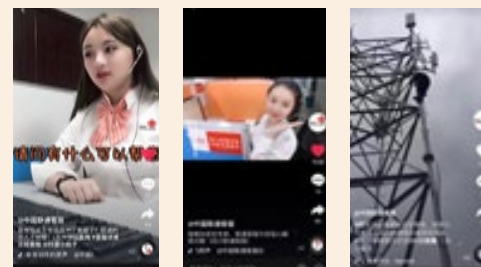
- In connection with Weibo/WeChat and online customer services: the official "China Unicom Customer Service" WeChat account reported a 99.5% rate for the timely handling of customer enquiries and complaints, building a strong reputation among customers. The "China Unicom Customer Service" WeChat account has grown into a first-class platform for authoritative information dissemination with the development of 5.35 million fans.

- In connection with the open knowledge base: we resolved customer enquiries through the "WO Knows" knowledge and support platform, where there are 500,000 counts of open knowledge. Meanwhile, "China Unicom BBS", our fan sharing and interaction platform, has assembled 3.63 million active fans who have contributed a total of 610,000 posts attracting 100 million views.

China Unicom Beijing has sped up problem resolution – eliminating ineffective steps in workflows, shortening response time and employing upgraded technologies for a transparent, on-record and traceable complaint handling process. An open assessment model based on coordination between multiple online and offline touchpoints has been developed. Through open and transparent measures such as progress enquiries via WeChat, online stores/mobile APPs and customer satisfaction surveys covering all scenarios and all workflows, we have achieved transparency in the handling of complaints and effective communication of customers' suggestions such that all suggestions and demands from customers are being properly attended to.

Users of Internet channel services exceeded **97 million**
growth of **4.4**pp in user penetration of Internet channel service

Commenced national first-class operation of the "China Unicom Customer Service" TikTok account. In four months of operation, 175 professional and positive promotional videos about crowdfunding services, business operations and maintenance services, etc. have been posted, garnering 450,000 likes.



Strengthening complaint management

In 2018, China Unicom continued to strengthen complaint management using a matrix complaint management model. No instances of complaints about abusive charges have been reported during the year, indicating notable success in complaint management. The Company regards complaint resolutions on both client and Company ends as part of the close-loop complaint management system, aiming at "solving one type of problem through the handling of one complaint" so as to enhance the ability to resolve complaints from the root.

- We have effectively enhanced our ability to resolve customer complaints through customer hotlines and service counters and efficiency in handling complaints by consistently strengthening the frontline deployment of back-office ability to settle complaints, standardised support for service planning and knowledge base, expansion of the authority of frontline service and tiered handling of complaints, etc.

- We continued to improve the mechanism for direct complaints and problem resolution from the root by building a dedicated team for root-cause rectification and a virtualised specialist team. We have improved the functions of the system for root-cause rectification by integrating the processes for warning on direct complaints and root-cause rectification.

- We routinely monitored abnormal movements in complaints on a daily basis, and identified and issued warnings on popular customer complaints in a timely manner, instructing provincial branches for swift and proper settlement to avoid collective complaints.

- On the back of root-cause rectification and the flagging and deflagging mechanism, focused efforts have been made to resolve critical and common issues among all complaints.

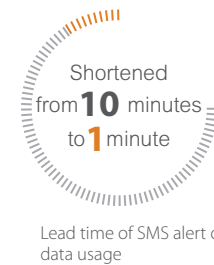
China Unicom Mongolia branch has enhanced customer perception through multiple means. The scenarios for service remedies have been increased, while business departments have been encouraged to participate in the complaint handling process. A flattened mechanism for communication has been established through the use of WeChat groups and QQ groups to improve information feedback and communication among complaint handling departments at different levels. In addition, a “call centre group for the sharing of public opinions” has been established to handle popular and material complaints in a speedy manner, seeking instant interaction with specialised departments to solve customers’ requests in a timely manner.



Persisting in transparent services

In meticulous implementation of the “Laws of the People’s Republic of China on the Consumer Rights Protection” and other laws and regulations pertaining to the protection of consumer rights, China Unicom exercises stringent regulation over billing and charges, protects customers’ right of information relating to consumption and services, and strengthens consumer education on product and service knowledge.

- Supervision and management of billing has been strengthened. Billing performance assessment has been conducted to enhance the accuracy in daily billing operations through appraisal, inspection and reporting.
- Management of service fees has been strengthened. A special initiative has been launched to address unsolicited value-added service charges and a platform for centralised verification of value-added services has been established to curb unsolicited value-added service charges from the root.
- Management of channel partners has been strengthened. Amendments have been made to improve the “Measures for the Administration of Value-added Services” and nationwide promotion and training has been organised to ensure genuine implementation of regulated management.
- Promotion and supervision of policies regulating package sales has been strengthened. In strict adherence to a simplified tariff structure for service recommendation, regulated tariff promotion, higher tariff transparency and satisfaction of user demand, we offer a simple tariff structure that is easy to understand and strictly prohibit ambiguous tariff structures and usage terms to eliminate any unreasonable fee items. Emphasis has been placed on the promotion of packages with clear and simple tariff structures and nationwide uniform tariffs to increase tariff transparency. We regulate the promotion of service tariff policies, as package and promotional information is publicised and shown in mobile APPs and online stores in a timely manner.
- Message billing is operational nationwide, while ongoing upgrades have been made to the billing system with continuous improvements to the accounting process.



Improvements in customers’ word-of-mouth

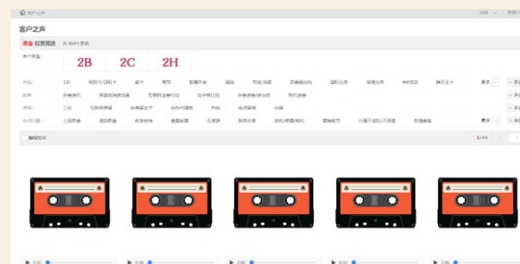
China Unicom is committed to enhancing customers’ perception and word-of-mouth on all fronts. NPS assessment has been introduced to conduct comprehensive monitoring of all business units at all levels of the Company, so that the Company will be able to understand customers and accommodate their needs, and all business units will be able to improve in a customer-oriented manner.

- The NPS survey and assessment is operational in 31 provinces across the nation covering the three principal dimensions of network, business and services in support of close to 300 customer service personnel, providing approximately one million times of data services throughout the year.
- We continued to conduct NPS customer word-of-mouth and satisfaction survey, reporting a year-on-year increase of 13.0 points for business NPS and 6 points for service in 2018.
- We launched a “special initiative on customer perception improvement” to drive internal process improvements and rectification of key issues from the root in a problem-driven approach on the back of the flagging and deflagging mechanism for key service issues.
- A CEM customer perception management platform has been initially established, enabling operation and application at multiple levels with centralised support in NPS assessment, online media monitoring and random satisfaction interviews. Information such as customers’ voices and satisfaction poll results at various touchpoints is consolidated to comprehensively improve customer information and enable precise customer service with Big Data analysis.

China Unicom Guangdong branch has launched a campaign called “The initial determination – listening to customers’ voices” campaign, seeking to understand the genuine needs of customers by listening to their views through three ways: in person at the site, through online communication, and collectively by different lines. Members of the management put on earphones to listen to the genuine voices of customers, while listening to recordings online and collecting suggestions through the “Customers’ Voices” platform. As at the end of 2018, the “Customers’ Voices” had collected 864 customer enquiry recordings. Findings of the campaign would be followed up as key issues to facilitate the closed-loop handling of “identifying, analysing and solving” customers’ problems.



Listening to customers’ voices in person



The “Customers’ Voices” platform

MAINTAINING A SECURE CYBERSPACE

Safeguarding emergency communication

Implementing emergency communication assurance plan

In 2018, China Unicom amended its Group-level emergency communication assurance plan, including the master plan and 8 specialised emergency plans, and organised more than 1,740 emergency drills during the year.

Fully safeguarding communication in floods and other natural disasters

In 2018, some areas in China were battered by serious floods, with mountain floods, mudflows and slippery slopes in certain districts. With a dauntless spirit, China Unicom established an emergency team on 24-hour standby to ensure communication for key customers such as the CPC, government and military authorities, anti-flood and anti-drought command departments so as to ensure communication security during the flood period. We committed an aggregate of RMB137.11 million to emergency work, dispatched 78,431 emergency workers and 31,670 emergency vehicles, and sent 75.55 million emergency SMSs.

RMB137.11 million committed to emergency work **78,431** emergency workers were dispatched

Communication assurance for Beijing Summit of the Sino-African Cooperation Forum

During Beijing Summit of the Sino-African Cooperation Forum held in September 2018, China Unicom deployed more than 6,900 staff and 970 vehicles to ensure stable network operation in important areas such as the Great Hall of the People, National Convention Centre and Diaoyutai State Guesthouse. We deployed a new situational awareness system enabled by Big Data and intercepted 100% of 482 threats identified during the summit, achieving “zero failure” in the key areas.

Communication assurance for the Shanghe Summit in Qingdao

During the Shanghe Summit held in Qingdao in May 2018, network operation was stable in important areas such as the Qingdao International Convention Centre and the media centre, where “zero failure” was reported. China Unicom deployed more than 6,800 staff, 1,010 vehicles to ensure uninterrupted communication services. Lighting at Fushanwan involved 112 UTN equipment and 1,000 IoT cards, while we conducted signal monitoring at the IoT base stations to ensure safe and reliable operation of the system and equipment. We have also developed a “halt with a click” system and a 1.2T big bandwidth DDoS cleansing system to carry out attack cleansing at the source.

Communication assurance for the first Import Expo

At the first Import Expo held in Shanghai in November 2018, China Unicom carried out network optimisation based on the principle of “One Pavilion, One Policy” and “One Scenario, One Policy”. Network operation was stable during the Import Expo as we deployed more than 6,500 staff, 980 vehicles, 2 patrol boats and 2 drones to ensure “zero failure” in the key areas. We deployed for the first time an intelligent network failure identification system and network management robots and implemented NOC production functions such as network failure prediction on the back of AI, Big Data and cloud computing. The system was triggered for over 1000 times during the Import Expo. 5G network was deployed for core indoor and outdoor areas such as the WH Pavilion and the media centre to enable 5G HD videos for live media coverage.



Safeguarding information security

Improving the information security work mechanism

In meticulous and thorough implementation of the requirements set out by the National Network Security and Informatisation Work Conference, and in strict accordance with the Cybersecurity Law, China Unicom has issued a series of administrative measures for business and system security to ensure the safe and stable development of the Company’s network and information security.

- In 2018, close to RMB600 million was invested in fixing latent cybersecurity issues and no material security breaches were reported during the year.
- Major efforts were made to enhance centralised technical support ability in order to provide technical assurance for branches and subsidiaries.
- Actively conducted data security inspections and closed loopholes with 1,989 loophole checks nationwide to effectively lower security risks.
- Driving full implementation of various tasks through the accountability and appraisal system.

100% implementation of control through real-name registration

● China Unicom has rigorously implemented the MIIT’s requirement for control over real-name registration. We achieved 100% real-name registration for our telephone users by ensuring real-name registration by new users, optimising the ordering process of online channels, conducting self-inspection and clean-up of real-name registration issues for IoT cards, cleaning up distributor accounts and reducing distributor irregularities.

◎ Enhancing cybersecurity ability

- Over the years, we have gradually developed a range of security and servicing ability, such as abnormal data clean-up, Zombie and Trojan monitoring, malicious mobile APP monitoring, cybersecurity situational awareness, secure configuration manager and loophole management, among others.
- “China Unicom Cloud Shield”, a security product offering defense against DDoS attacks, has gained extensive recognition from more than 70 government and corporate clients, including the Industrial and Commercial Bank of China, Alibaba and Tencent.

◎ Ensuring security of customers' personal information

In thorough implementation of the “Regulations for the Protection of Personal Information of Telecommunication and Internet Users”, China Unicom has formulated the “China Unicom User Privacy Policy” and related protocols to require China Unicom and related companies to obtain legal authorisation for the collection and use of necessary personal information of users.

- Management of public disclosure and confidentiality of customer information has been strengthened with rigorous implementation of the “seven prohibitions” regarding customer information.
- The purpose, method and scope of collecting and using user information, channels for enquiring and correcting information, and the consequence of refusal to provide information are publicly set out on the online store to give clear notice to customers and increase our ability to safeguard customer information security.

China Unicom Tangshan branch in Hebei province engaged in network information security in a multi-discipline and multi-dimensional manner. In 2018, a number of network and information security assurance tasks for major events were completed. Approximately 50,000 harassment/scam phone calls were dealt with. It actively cooperated with the police on a number of on-site arrests and suspensions of relevant phone numbers for the gathering of evidence.

◎ Purifying the cyberspace

◎ Rigorous crackdown on malicious attacks

- We cracked down on malicious mobile APPs by strengthening interception, running a three-tier security audit comprising security against APP viruses, security in contents and features and billing security, monitoring complaints on an ongoing basis, and barring number-changing APPs.
- Actions were taken against non-compliant APPs, as over 500 non-compliant APPs and close to 4,000 non-compliant online games were identified at the WO store through inspection, and approximately 50 APPs with potential security issues were instantly removed.
- Leveraging our technical strengths in Big Data, we have built and optimised an “Hawk Eye” system and formed a centralised operations team to enhance accuracy in the screening of fraud and harassment numbers, and the number of reported cases have substantially decreased as a result.
- Spam SMS interception methodology is optimised dynamically, resulting in a monthly average interception of 143 million spam SMSs.
- A new international scam call interception system has been put into operation and 388 million international scam calls have been intercepted.

China Unicom Shanghai branch has adopted innovative algorithms to conduct precise interception of “debt call” spam SMSs with an improved accuracy rate of 99.3%. During the peak season, a daily average of close to 3,000 spam SMSs were blocked and the monthly average number of complaints relating to spam SMSs decreased by approximately 85%.

China Unicom Hainan branch has applied the Hawk-Eye anti-scam system to provide users with a secure and clean cyberspace and raise public awareness. In 2018, 1,783 anti-scam reminder SMSs and 534 voice alerts were sent and approximately 2,560 phone numbers making abnormal calls were suspended. 485,000 page views of and 272,000 visits to malicious webpages were stopped.

China Unicom Maoming branch in Guangdong has developed an anti-scam regime comprising technical monitoring, suspension and interception, channel tracking and joint actions with the police to protect the people from telecommunication scams. Through precise interception, total voice calls in Shuzai and Magang, two key victim towns suffering from scams, reduced by more than 55%. Joint efforts have been made to curb the card head grey industry chain and 112 malicious card buyers have been locked down on a real-time basis to cut off the local card supply.

China Unicom Jiangsu branch has developed a Big Data-enabled, 360° anti-scam regime and successfully blocked an average of more than 2 million abnormal calls per day with an accuracy rate north of 90%, effectively reducing the volume of reported phone numbers roaming to key areas suffering from telecommunication scams as mentioned by the Central Government, such as Maoming and Longyan.

◎ Cybersecurity promotion and community welfare services

- We were the first to roll out a free-of-charge anti-fraud community welfare service which accurately identified suspected victims throughout the whole network and, working with the police, alerted users to prevent losses. An average of more than 1,000 alerts were sent each day.
- More than 970 million SMSs containing various types of security tips were widely disseminated.

China Unicom Liaoning branch launched a wide range of cybersecurity promotional activities: sending 12 million promotional SMSs, reaching out to 31.50 million users via our online stores and WeChat public account, organising 18 sessions of community outreach during the promotion week and over 400,000 showings of promotional messages at business outlets.



Rolling messages on LED screens at business outlets



Community outreach



Promotion via online stores

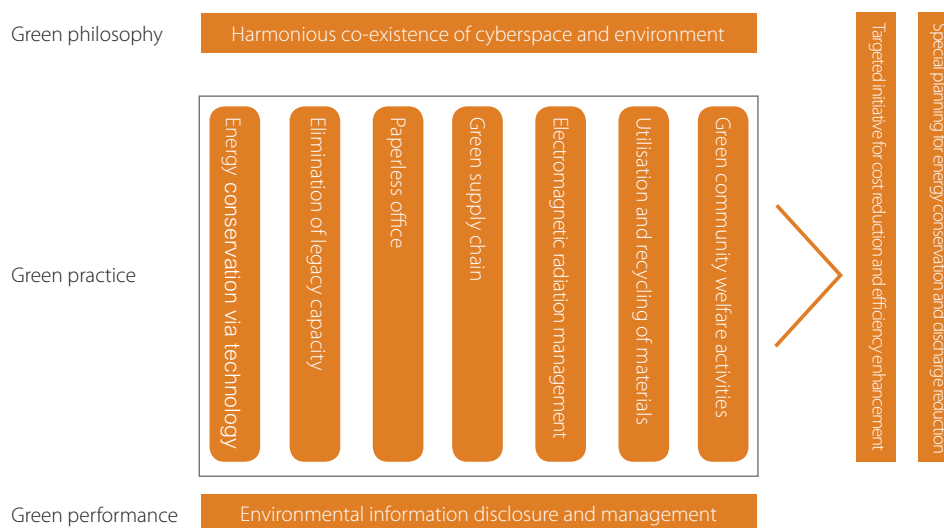
PERSISTING IN LOW-CARBON GREEN DEVELOPMENT

China Unicom is resolutely committed to pollution prevention and remedy. In strict accordance with laws and regulations pertaining to environmental protection, such as the Environmental Protection Law of the People's Republic of China and the Energy Conservation Law of the People's Republic of China, we have incorporated the low-carbon green development philosophy into our corporate strategy and production operations in active implementation of green management, green network, green operation and green application, with a view to contributing to the realisation of a beautiful China with blue sky, green land and clear waters, satisfying the growing demand for a pleasant ecological environment of the public.

Refining green management

Strengthening management system

China Unicom has developed a “three-in-one” green management system underpinned by the green philosophy, green practices and green performance. We implemented the general requirement for “cost control and mechanism reform” through targeted initiatives and special planning. We deeply engaged in energy conservation and eliminated inefficient capacity, so as to reduce network energy costs and mitigate the environmental impact resulting from greenhouse gas emission. We regulated the treatment of pollutants and wastes to enhance the standard of our refined green management. The Company is committed to increasing the efficiency of water consumption as active efforts have been made to promote the recycling of water resources. The Company promoted awareness in water conservation, while conducting regular maintenance checks in each part of the water supply system to eliminate water resource wastage and leaking. The Company's water resources mainly comprise tap water in buildings or properties. During the reporting period, there was no issue in sourcing water.



China Unicom's "Three-in-one" Green Management System

Driving Control work

China Unicom spares no effort in tackling the “three critical issues” to ensure practical implementation of key deployments in relation to eco-friendly development.

- We have formulated a particular implementation plan for pollution prevention and remedy, underpinned internally by low-carbon green development and externally by focused efforts on the ecological environment.
- A green development monitoring and data collection system¹ has been established. Pollutants discharged in 2018 included 5,296,000 tonnes of carbon dioxide and 2,400 tonnes of sulphur dioxide.
- Improvements have been made to the green procurement system and administrative systems for the disposal of wastes.

1. ESG indicators such as the density of water consumption, total volume and density of hazardous (non-hazardous) wastes have yet to be covered in full. We will next seek to improve China Unicom's environmental governance system in accordance with the ESG Reporting Guide issued by the Stock Exchange of Hong Kong.

- We highly regard environmental protection education, building green business outlets and promoting paperless office.
- We undertook major initiatives in water and power conservation, and formulated the “2018 China Unicom Building Energy Conservation and Discharge Reduction Plan”, resulting in a 18.2% reduction in power consumption and 24.6% reduction in water consumption on a per capita basis.
- We have supported low-carbon green development of the industry and launched training and exchange programmes in energy conservation and discharge reduction, and we have also joined the “Internet+ Energy Conservation” Industry Alliance.
- Dedicated funds for energy conservation and discharge reduction have been earmarked with a special focus on energy conservation upgrades and the application of energy conservation technologies.

China Unicom Cloud Data Company has established a working group for energy conservation and discharge reduction in data equipment rooms and published the “China Unicom Cloud Data Company Limited Administrative Measures for Energy Conservation and Discharge Reduction (Trial)”. It identified energy conservation potential of the power source systems and cooling systems at existing bases and conducted ongoing research and application of new energy conservation technologies.

In December 2018, China Unicom joined the “Internet+ Energy Conservation” Industry Alliance and was designated as a deputy general secretary unit. The Alliance is aimed at consolidating resources in the industry to deepen energy conservation efforts and assist the innovative development of sectors relating to “Internet+ Energy Conservation”, coordinating energy revolution and eco-friendly development on behalf of the government, enhancing macro-control of energy conservation and supporting the development of the energy conservation and environmental protection industry.



“Internet+ Energy Conservation”
Industry Alliance Inauguration

Funds committed to energy conservation and discharge reduction exceeding **RMB100** million in 2018

◎ Building a green supply chain

China Unicom implements quality accreditation for environmental management, setting out clear environmental requirements and energy-saving conditions for equipment procurement. Suppliers are required to obtain accreditations such as SA8000 and ISO14000.

We comprehensively advanced the full operation of e-tenders and e-commerce with totally digitised “sunshine procurement” and “green procurement” in an effort to lower environmental costs in transactions and enhance environmental awareness on the part of suppliers.

We have tightened up the social responsibility requirements for terminal suppliers as we seek to build a responsible supply chain system. For customised terminal products, we focused on power consumption testing and continuously worked with manufacturers for improvements to ensure compliance of these terminals with energy conservation, environmental and safety standards.

📶 Construction of green networks

◎ Applying green technologies

China Unicom adopts highly energy-efficient network development strategy to drive cost reduction and efficiency enhancement for telecommunication facilities at source.

In 2018, we continued to employ efficient power modules and smart dual-circulation air-conditioning and achieved a 2-5% improvement in power system efficiency, a 30% air-conditioning energy saving and electricity saving of 20.54 million kWh for newly built systems in the first year.

The self-developed loose coupling channel closed-end technology (China Unicom Cloud Shelter) has been adopted to facilitate closure of the cooling passage of traditional telecommunication equipment. Compared to traditional methodology, machine room pPUE (partial power utilisation efficiency) decreased from over 2.0 to 1.5, delivering ongoing energy conservation throughout the entire life cycle of equipment operation.

To promote green data centres, energy-efficient and environmentally friendly equipment such as large cooling capacity centrifugal chillers, variable frequency circulation pumps, column precision air-conditioning, high-frequency UPS and amorphous alloy transformer have been employed in combination with energy-saving technologies such as residual heat recycling, natural cooling, HVDC, distributed power generation, photovoltaic power generation (lighting system). Through adjustments to the cooling system parameters and optimising UPS operating mode, etc., we enhanced our energy utilisation efficiency with PUE reaching as low as 1.33.

- Adjustments to the cooling system parameters: the temperature of water supply and recycling was raised from 7 °C -12 °C to 10 °C -15 °C. Approximately 2-4% electricity could be saved for every 1 °C raised.
- Natural cooling: the natural cooling mode was turned on according to weather conditions. The mode operated for approximately 3,600 hours annually and accounted for 41.1% of total cooling time in the year, contributing to a power saving of approximately 33.6%.
- Optimising UPS operating mode: highly redundant UPS with low loading rates have been closed down to raise the average loading rate. Meanwhile 10% of the degradation of fully loaded UPS can be saved.
- HVDC: compared to traditional UPS, fewer levels of variation can facilitate power saving of approximately 15%.

The cloud data base of China Unicom Huerhot branch trialed the “smart cloud energy conservation” unit and achieved 6% system energy conservation. It was named a Green Data Centre Exemplary Unit by the MIIT, and awarded the titles of “Unit of Innovation in Energy Conservation Technology for the Telecommunication Industry” and “Outstanding Data Centre Operation and Maintenance Award”.



At the Xiangjiang Road IDC Complex of China Unicom Harbin branch in Heilongjiang, power consumption for the operation of equipment and air-conditioning accounts for 20%-25% of the total power consumption for overall operations and maintenance and is hence a priority in energy conservation. Through the introduction of a ventilation energy conservation system, significant energy conservation have been achieved with energy saving of 72.3%. In the future, the system will be broadly deployed.

China Unicom (Hong Kong) Global Centre strictly complied with local ecological and environmental requirements in its IDC and terrestrial fibre cable projects. It also actively promoted collective fulfillment of environmental responsibilities by partners in the supply chain. The projects were awarded international LEED Gold certification and BEAM+ accreditation of Hong Kong in recognition of their top standards in green construction internationally.

◎ Capacity optimisation and upgrade

In deepening supply-side structural reform, China Unicom eliminated obsolete capacity and achieved network optimisation and upgrade as well as cost reduction and efficiency enhancement by stepping up 2/3G network streamlining, fixed-line business consolidation and decommissioning legacy equipment. In 2018, 500,000 square meters of equipment room area were vacated leading to close to 300 million kWh of power savings per year.

China Unicom Shandong branch has been actively driving innovation in energy conservation and consumption reduction models. Its hardware has been optimised to reduce energy consumption, while software optimisation has been focused mainly on frequency reduction for 2/3G networks to achieve cost reduction and efficiency enhancement for greater environmental, economic and social benefits.

◎ Managing Electromagnetic Radiation

China Unicom deploys mobile telecommunication base stations in strict accordance with the provisions of the Ministry of Ecology and Environment (“MEE”) and the local ecology and environment authorities, while strengthening management of electromagnetic radiation to ensure compliance with national standards in terms of electromagnetic radiation levels. In accordance with MEE Order No. 41, we have completed environmental impact registration forms for all of our construction projects.

In accordance with the “China Unicom Administrative Regulations for Environmental Protection in relation to Electromagnetic Radiation at Telecommunication Base Stations (Trial)”, we have enhanced the filing of mobile telecommunication base stations, testing for electromagnetic radiation, disclosure of testing results and handling of complaints.

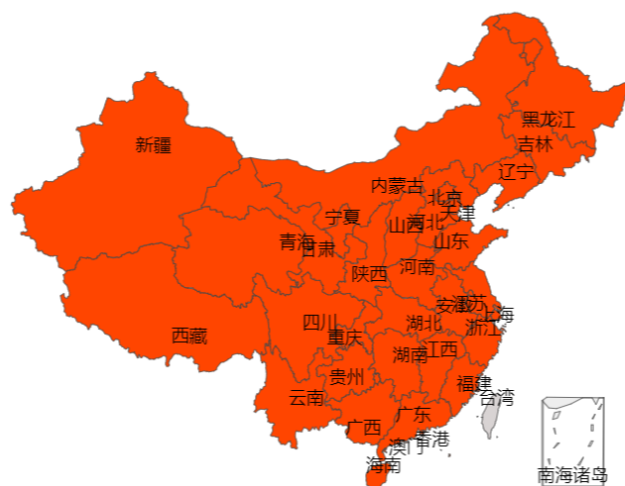
We were the first to develop a nationally centralised electromagnetic radiation monitoring and information disclosure system for mobile communication base stations, allowing the public to access electromagnetic radiation data and monitor China Unicom’s electromagnetic management in active response to stakeholders’ concerns.



中国联通基站电磁辐射信息公示平台
ChinaUnicom EMF Information Publicity System

请输入基站名称或站址

查询



Interface of China Unicom EMF Information Publicity System

Enhancing green operation

Building green office

In adherence to the notion of “low carbon, discharge reduction and green office”, China Unicom has built a green and intelligent store network characterised by “regulated management, standardised layout, modernised equipment, digitalised operation and paperless processing” through developing digitalised business outlets. Our centralised paperless system handled a total of 106 million business transactions in 2018, reducing paper and labour costs by approximately RMB112 million.

Facilities at business outlets have been consolidated into an integrated equipment. We promoted online order taking and centralised processing at the middle platform to enhance the ability to acquire customers through self-owned online channels while teaming up with third parties to expand online channels, so as to reduce the operating costs of business outlets and labour costs in implementation of the green operation philosophy.

106 million paperless business transactions

Total cost savings of approximately

RMB112 million

Upcycling materials

China Unicom continued to enhance the disposal of obsolete materials. Storage and management of materials pending disposal is conducted in strict accordance with environmental requirements. Additional methods of disposal compliant with such requirements have been introduced to increase the efficiency of disposal and reduce environmental pollution. In 2018, the reused materials were worth approximately RMB101.87 million. Proceeds from the disposal of obsolete wires and cables, obsolete batteries and miscellaneous assets amounted to RMB440.01 million, RMB94.46 million and RMB85.58 million, respectively. Upcycled materials were valued at RMB108.51 million.

We comprehensively advanced Internet-oriented operation in connection with asset disposal. We strengthened cooperation with Alibaba, jointly establishing an “open, transparent, sunshine and efficient” intelligent asset exchange platform and connecting China Unicom’s asset disposal bidding platform with Alibaba’s auction platform. 150 branches and subsidiaries of China Unicom have joined Alibaba’s auction platform, with 17 of them having conducted 131 auctions of obsolete assets. As a result, the yield rate of disposal has increased by about 50% for terminals and about 10% for wires and cables.

We have also introduced trade-in service, financial instalment and handset insurance services to lower the barriers for handset upgrade by users and to drive the green and healthy development of the industry. We teamed up with Apple to launch a handset upgrade campaign for existing customers, which not only met the handset upgrade demand of Apple fans but also effectively reduced wastage of resources.

Reuse of materials worth approximately **RMB102 million**

Proceeds from the disposal of miscellaneous assets amounting to **RMB85.58 million**

Upcycled materials valued at **RMB109 million**

China Unicom Guangxi branch has adopted an "Internet+" online platform auction model, to maximise value preservation and creation for the Company's obsolete assets. Throughout the year, 603 sets of obsolete batteries, 13,934 sets of obsolete telecommunication equipment, 4,164 sets of obsolete office equipment and 26 retired vehicles were auctioned for a total income of RMB4.013 million.

China Unicom Inner Mongolia branch reused old and redundant equipment to build cloud resource pools with a centralised intelligent platform for maintenance, operation and management. Infrastructure hardware was 100% sourced from retired old equipment, reducing purchase costs by approximately RMB2 million. The resource pool is equipped with 35 intelligent network management systems, resulting in hardware investment savings of approximately RMB3 million.

◎ Taking green actions

China Unicom is a strong advocate for environmental protection and places a strong emphasis on green charitable campaigns. Our staff contribute to the conservation of biodiversity and ecological restoration and the building of a beautiful China, starting from day-to-day matters.

In June 2018, the National Low Carbon Day promotional campaign was held in the office of the Beijing Winter Olympics Organising Committee. China Unicom signed the "Low Carbon Proposition" together with all Winter Olympics partners to kick-start a low-carbon initiative: "It is our collective vision and responsibility to fully implement the Olympic ideal of eco-friendliness, sharing, openness and integrity and organise a spectacular, extraordinary and superb Olympic event. To support the goal of low-carbon emission at the Beijing Winter Olympics, we, as official partners of the Beijing Winter Olympics, solemnly propose the joint adoption of low-carbon green actions to help achieve 'Green Olympic Games' at the Beijing Winter Olympics."



China Unicom participated in the National Low Carbon Day promotional campaign.



China Unicom Rizhao branch in Shandong province launched the "Tree Planting for Green Cities" initiative.



China Unicom Canzhou branch in Hebei province launched a collective volunteer service campaign to combat illegal mini-advertisements.

🔍 Exploring green applications

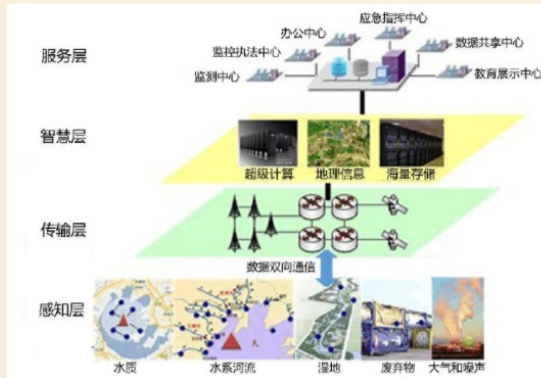
Externally, China Unicom is focused on the environmental vertical. Leveraging our technical strengths in Cloud, Big Data, IoT and mobile Internet, we continuously introduced innovative green products and applications and launched green informatisation solutions to support low-carbon industrial developments, thereby making active contributions to the realisation of low-carbon green development and pollution prevention and remedy.

- We promoted green electronic top-up cards to reduce the production of paper cards. In 2018, electronic top-up cards accounted for close to 90% of our total top-up card sales.

- We have been driving the replacement of physical SIM cards with eSIM to gradually reduce the significant costs associated with card production, transportation, storage and physical SIM card replacement incurred by carriers and users, reducing consumption of raw materials and environmental pollution.

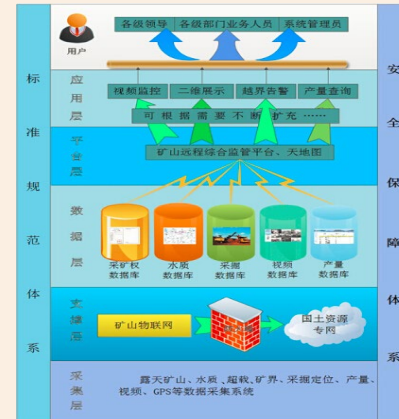
- We have developed a process to rewrite used empty cards into blank cards for reuse to avoid wastage resulting from disposal. According to our estimates, more than 2 million empty cards can be reused.

China Unicom Hubei branch utilised modern information technology to build a smart environmental protection platform that integrates environmental monitoring, emergency command and mobile law enforcement, in order to enhance the ecological environment monitoring network as well as management and governance capabilities. Statistics showed that the percentage of good air quality reached 79.7% and 100% of water was qualified in cities engaging in smart environmental protection. It helped to solve environmental issues which the public was highly concerned about.



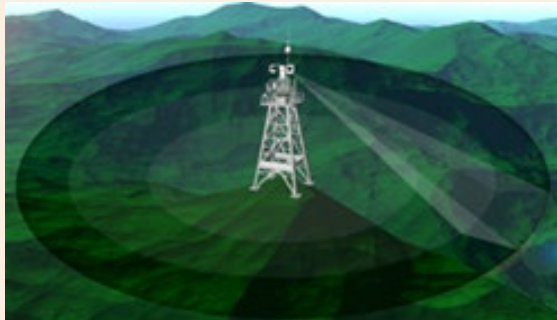
Overall Framework of Smart Environmental Protection.

Leveraging its integrated ability to employ systems integration + fibre network + IoT, China Unicom Chuzhou branch in Anhui province has built an integrated intelligent monitoring platform for mineral resource exploitation in Dingyuan County, deploying 22 monitoring points to effectively curb illegal mining and prevent environmental pollution and water / soil depletion. With a significant exemplary effect, the project is replicable in other parts of the country.

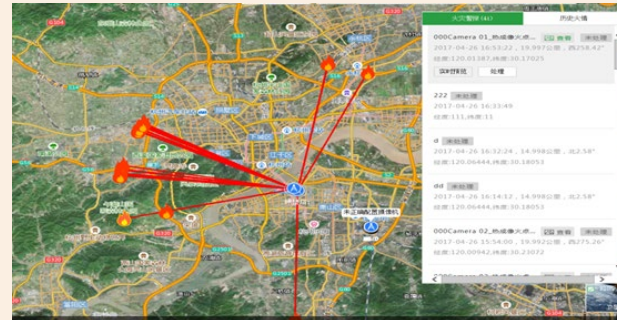


Integrated Intelligent Monitoring Platform for Mineral Resource Exploitation.

In 2018, China Unicom Hebei branch fully advanced the building of a monitoring platform for the prohibition of straw incineration with the use of infrared thermal imaging video surveillance, an internationally leading technology. The governance with respect to the prohibition of straw incineration in the province became more informatised and intelligent, resulting in "environmental management on one single platform". Currently, system development has completed at three cities, namely, Handan, Langfang and Zhangjiakou, and 803 monitoring points in 36 counties (cities / districts) have been put into full operation with strong approval from local environmental authorities.



Thermal imaging video cameras on the tower patrolling on a round-the-clock basis.



Fire is identified and located in a timely manner.

To enhance treatment of water pollution, China Unicom Fujian branch has built a green ecological water network and adopted an "Internet+ river chief system" philosophy to create a powerful tool for supervising river protection – the "integrated management and information platform for the river chief and lake chief system" – providing information support and a scientific management approach for the joint management and protection of rivers and lakes by the government and the community. China Unicom Fujian branch was contracted to build 16 district- or county-level platforms serving more than 20,000 users, winning recognition from the 5 cities of Nanping, Zhangzhou, Ningde, Longyan and Quanzhou.

SHARING BENEFITS WITH SOCIETY

With a strong focus on the responsibilities of a central state-owned enterprise and undertakings relevant to the current times, China Unicom holds in high regard social and livelihood issues and proactively takes part in community welfare on the back of our own expertise and technical strengths. We engaged in charitable donations, disaster and poverty relief and volunteer services in order to contribute to improvements in livelihood, spread our love, and facilitate shared and harmonious development for the Company and the society.

Proactively making external donations

The Company makes donations taking into account its ability with well-defined rights and responsibilities in an honest manner, with a view to continuously contributing to the society.

RMB11.04 million

in external donations

Causes of donation	Amount (in RMB thousands)
Donations to areas of targeted poverty alleviation (poverty aid)	9,450
Donations to cultural and sporting programmes	70
Donations to education (schooling assistance)	620
Donations to other charitable relief and public welfare programmes	50
Donations for the construction of social and public facilities	40
Other targeted areas for assistance	110
Donations to medical care and hygiene programmes	20
Donations to programmes for the disabled (assistance for the disabled)	20
Donations to environmental protection programmes	20
Other donations	630
Total	11,040

Statistics of China Unicom's external donations in 2018

Calling on all staff to make donations, China Unicom Pudong Branch in Shanghai has provided financial aids to underprivileged students in Sifangwu Town, Huining County, Gansu Province for 8 years in a row since 2010, with an aggregated donation of more than RMB23,000.



Helping the underprivileged with love

China Unicom always cares about the underprivileged in the society. Through initiatives such as corporate donations, charity shows, employment assistance and social services, we spread our heartwarming care to the disabled, children, university students, and foreign workers.

◎ Care for the disabled



China Unicom Chongqing branch donated telecommunication service products with a total worth of RMB56 million to the disabled and facilitated unified standards, data sharing, business streamlining and service management enhancement through the building of an intelligent information management platform. Throughout the year, more than 20,000 disabled persons benefited from China Unicom's actions of care.

China Unicom Zhejiang branch hosted a "Voice of Love" charity show featuring performances by kids from a school for the blind in Zhejiang, aiming to arouse social attention and recognition for these kids.



China Unicom Zhejiang branch launched the "Lion Charity Card" series, a product offering concessionary tariff, for the disabled in the province and their families. It donated RMB600,000 to the Foundation for the Disabled each year and distributed 100,000 "Lion Charity Cards" in 3 years, in a new attempt at community welfare in an Internet+ age with the cultural characteristics of Zhejiang.

◎ Care for children

China Unicom Guangdong branch launched a campaign known as "Small Points for Big Charity Free Lunch from WO", calling on China Unicom customers to provide free lunches to designated primary schools in impoverished areas by donating their reward points. The campaign was met with overwhelming response and the service platform received support from approximately 100,000 customers, raising more than RMB300,000 in donation.





China Unicom Sichuan branch launched the "Operation Glove" calling on each staff to donate "a pair of gloves to warm up the winter". Approximately 2,000 pairs of gloves were donated to underprivileged children in primary schools and schools for left-behind children in 28 poverty aid villages.

© Care for workers

China Unicom Shenzhen branch in Guangdong province gave away heartwarming telecommunication gift packs containing King Cards to migrant workers in Shenzhen before they boarded the "charity coaches" that took them home before Chinese New Year. Telecommunication packs with free data were also provided to migrant workers at factories and construction sites, so that they could better enjoy the warmth and happiness of connecting with their families. At bus and train stations, ginger tea was served, gift packs were prepared and signboards were held high to welcome or farewell each worker who was returning home for Chinese New Year, who also each received a "heartwarming gift pack". In 2018, the staff of China Unicom Shenzhen branch participated in the "Warm way home" campaign for more than 9,000 times. 5,293 sessions of activities were held covering more than 140,000 workers.





China Unicom Zhoukou branch in Henan province organised a “Care for Migrant Workers” campaign providing free voice calls and free Internet, while giving away China Unicom King Cards and offering discounts for high-speed fibre broadband products for the benefit of more than 100,000 rural residents in Zhoukou.

China Unicom Dongguan branch in Guangdong province launched a campaign to care for sanitary workers in a variety of ways: 100 business outlets in the city were used as charity stations to provide water and a place to rest for sanitary workers; gift packs were given away to the workers; free drinks and snacks and resting zones were provided to athletes during the sanitary workers’ sports day, and telecommunication network assurance was also provided for the event. More than 10,000 sanitary workers have benefited from China Unicom’s heartwarming actions.



© Care for university students



China Unicom Nanjing branch in Jiangsu province took solid actions to support the CPC Youth League Provincial Committee and Tertiary School Committee in relation to university students’ innovation and business venture. More than 800 students from tertiary institutions in Nanjing participated in a summer camp event, where they received systematic training on team culture development, business venture consultation, venture skill enhancement and exemplary cases in business venture, etc. from prominent coaches hired by China Unicom. Business venture assistance was provided to students with outstanding performance during the summer camp.

👤 Enthusiastic participation in community welfare and volunteer activities

In 2018, China Unicom endeavoured in the promotion of volunteer service spirit underpinned by dedication, love, mutual aid and progress, and deeply advanced the “Learn from Lei Feng” campaign for volunteer services. In 2018, the Company had 43,873 registered volunteers who participated in 50,412 times of volunteer services and activities, contributing the “Positive Energy of China Unicom” to drive the development of community welfare.

43,873 registered volunteers
50,412 times of volunteer services and activities

China Unicom Xinjiang branch continued to organise the “China Unicom Charity Library” donation initiative. As at 2018, 271 libraries had been built and 250,000 books had been donated for the benefit of close to 150,000 primary and secondary students of different races in Xinjiang.





China Unicom Sichuan branch launched the “Charity Dream-making” community welfare campaign and donation ceremony to donate education informatisation products worth over RMB66 million, including quarterly membership card for Daoxuehao (導學號), smart safety watches for kids, campus robots, “online learning cards”, “Love Is Around” accident insurance worth RMB300,000 and a RMB100,000 charity education fund.

China Unicom Sichuan branch has designated “May 4th” each year as the Civilisation and Community Welfare Day, on which its branches at city and prefecture levels throughout the province would organise community welfare activities suited to their local needs. In Chengdu, young volunteers promoted “civilised travel” and searched for “best smiles for civilised travel” at metro exits, commercial plazas and residential communities. They put scattered shared bicycles back to the stands in an organised manner according to their colours and brands, and gave away mineral water to sanitary workers, metro staff, traffic police and other citizens passing by in an effort to raise China Unicom’s social reputation.



◎ Active involvement in overseas community welfare

On 1 March 2018, China Unicom (Hong Kong) was awarded the “Caring Company” accreditation in community welfare by The Hong Kong Council of Social Service.



On 19 November 2018, we were awarded the “Green Office” environmental accreditation by World Green Organisation.

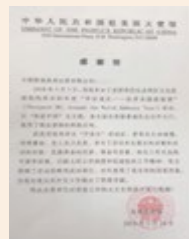


On 18 March 2018, staff of China Unicom (Hong Kong) joined the “Race for Water” charity run organised by “A Drop of Life”, a charitable group, to raise funds for disaster relief and poverty aid in remote areas. A HK\$30,000 donation was made.

On 4 November 2018, our Hong Kong staff joined the fifth “Innothon 10 KM 2018” to promote healthy life to IT workers and the public. A HK\$80,000 donation was made.



In May 2018, China Unicom (Americas) participated in the annual “Gateway in Washington D.C. – Visits to Global Embassies” organised by the Chinese Embassy in the U.S., making positive contributions to the Embassy’s public relations campaigns in the U.S. and showcasing a positive image of China in an effort highly commended by the Embassy.



On 7 December 2018, China Unicom (Americas) participated in the festive toy donation campaign hosted by the Mayor’s Office on Asian and Pacific Islander Affairs (MOAPIA) of Washington D.C. to care for the well-being and growth of local teenagers, and its efforts were highly commended by the US Chamber of Commerce Foundation.

In November 2018, China Unicom (Americas) participated in the “No-Shave November” community welfare initiative, during which participants refrained from shaving and combing to invoke conversation and raise awareness for cancer. A donation of approximately USD400 was made to the cancer research centre.

New Energy

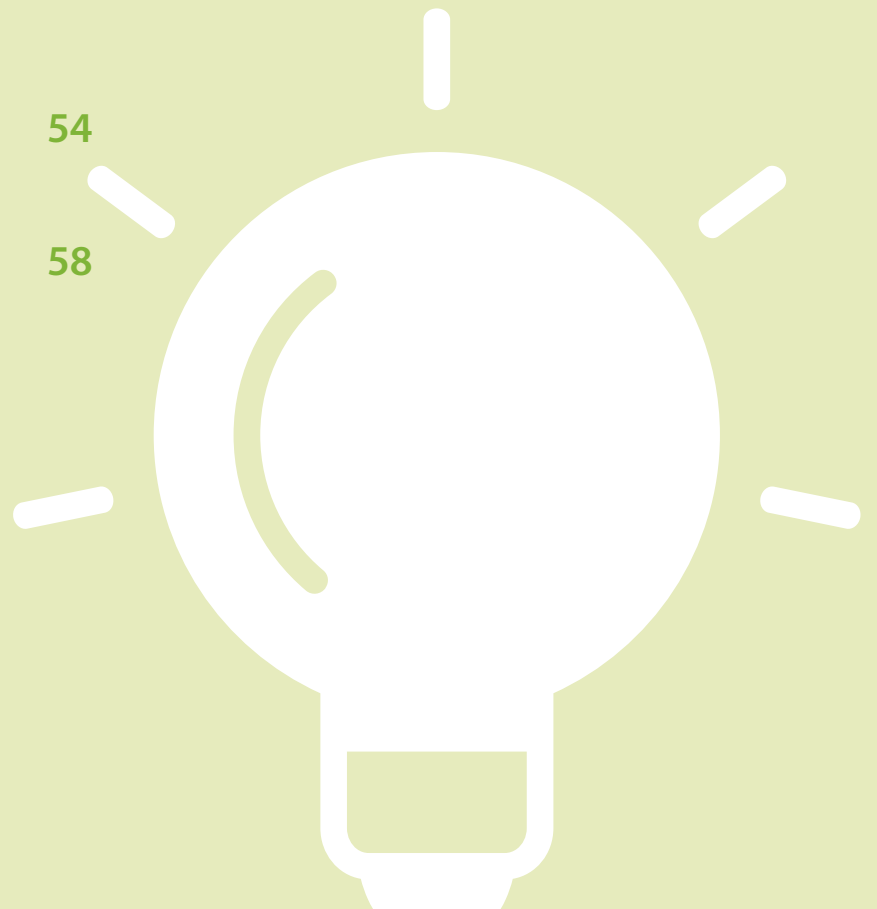
FOSTERING NEW VALUE IN INNOVATIVE DEVELOPMENT

Contributing to the building of smart industries

54

Developing smart futuristic technologies

58





NEW ENERGY: Fostering New Value in Innovative Development

China Unicom is focused on strengthening its new energy for innovation development. Innovation is the primary driving force for development and a sharp tool for converting the old energy to a new one. With a consistent emphasis on innovation as the basis for development, China Unicom has been vigorously driving the construction of smart networks and stepping up with deployments in areas such as cloud computing, Big Data and Internet of Things (IoT), as well as actively involved in AI and blockchain with a strong focus on the application of new technologies in daily life and industries to bring pioneer developments that are innovation-driven and leveraging on the first-mover advantage, with a view to the comprehensive enhancement of customer service.

Measures adopted in 2018

- Carried out futuristic network technology research, introduced SDN/NFV to gradually build smarter networks, and completed scale 5G pre-commercial trial and testing.
- Faster deployments in cloud computing, IoT, Big Data, AI, blockchain and etc., and initiated innovation business and service innovation.
- A diverse range of “Smart+” applications rolled out and new products were continuously developed.

Actions to be taken in 2019

- To carry out ongoing R&D and applications of SDN/NFV technologies, expediting 5G technology R&D, and trial deployment, as well as to actively unfold 5G experimental network and trials relating to the testing of 5G features.
- To further enhance capabilities in new Internet technologies such as cloud computing, IoT and Big Data, so as to develop more diverse informatisation application services.
- To further enhance planning and guidance in the research of futuristic technologies and to further improve the systems and regulations for R&D operation and management.

CONTRIBUTING TO THE BUILDING OF SMART INDUSTRIES

Enhancing cloud servicing ability

Led by the cloud business, China Unicom has developed a new ecology of Cloud + Network integration in the joint effort with its cooperation partners. While actively exploring new paths for Internet-oriented operations, an operating system with an integrated platform has been built to facilitate a one-stop service for service validation, billing and settlement on the WO Cloud platform, driving Internet-oriented maintenance, products, operation and management in full force to provide swift, flexible and demand-driven dedicated network cloud access services for users.

- In connection with public cloud, cooperation with strategic partners in the mixed-ownership reform has been enhanced, as the “Cloud Fibre Smart Enterprise” special cloud initiative for SMEs has launched close to 100 products for the comprehensive development of an integrated Cloud + Network product system, serving 34,000 customers during the year.

- In connection with private cloud, China Unicom consistently focused on six key sectors and 36 key areas, leveraging the unique advantages of WO Cloud in Cloud + Network integration, multiple cloud and hybrid cloud management to provide customers with premium one-stop private cloud solutions.

- In connection with cloud services, a dedicated operation team has been formed to provide integrated construction + maintenance services underpinned by fast response to demands, fast delivery of resources, uniform management of operations and maintenance and safe operations. A customer service appraisal system has been developed, under which customers’ feedback are collected through a monthly service appraisal form to facilitate settlement through internal coordination. A centre for centralised monitoring of operations and maintenance has been set up to further optimise the process for solving escalated breakdowns and to provide rigorous time limits for the handling of breakdown problems, so as to enhance customer perception.

- A total of 41 public resource pools and 44 exclusive private cloud resource pools have been deployed nationwide. Computing capacity of more than 500,000 cores has been commissioned and storage capacity has reached 40PB, while network capacity has exceeded 1,000G. The four major cloud data centres provide 20,199 cabinets and all data centres are directly linked to the core backbone network of China 169 with latency of less than 5ms and total outlet bandwidth of approximately 3.24T.

- China Unicom has actively sought memberships with domestic and international organisations for cloud computing standards, while owning 15 cloud computing software copyrights. The number of employees holding top-level cloud computing certificates has increased substantially.

In 2018, China Unicom became the domestic cloud storage service provider of Guizhou-Cloud Big Data’s iCloud. Meanwhile, the Company has received the 2018 PRC Trustworthy Cloud Technology Innovation Award, Outstanding Products and Solutions in Cloud Computing and Big Data Service Award, PT Expo China Annual Award for Outstanding Scenario Application, and Annual Award for Outstanding Power Source Project Management Team.

China Unicom Chuzhou in the Anhui province has built an underlying cloud platform for the Chuzhou taxi (including online car hailing) monitoring platform with cloud computing, Big Data and IoT technologies to carry out centralised management of taxis (including online car hailing). The platform can enable real-time monitoring of taxi (including online car hailing) and providing timely report of vehicles in unusual operation, so that relevant authorities can adopt measures to provide convenience and safety assurance for the travelling public.

Building Big Data paradigm

Backed by the China Unicom Big Data Company, China Unicom provides professional specialised data intelligent services to government and corporate clients in a bid to become an “integrator of data resources, guider of innovative applications and developer of industry ecology”. The Company has made innovative proposition of the data value regime to create a Big Data security system covering the entire life cycle based on scientific data values, which has received ISO/IEC2700 and Grade III national classified protection converging with international standards in data security.

- **Data asset integration capability:** Stressing the focus on key areas and scenarios for “data” and “smart” demands in key industries, China Unicom provides clients and partners with data sharing and application development services, and others, subject to safety and compliance, in an effort to becoming an expert in the operation of data intelligent services.

- **Data monetisation ability:** a three-tier industry solution (elementary, standard and platform-grade) with 12 major operating products, including 8 well-formed regimes, have been developed. Over 1,000 partners have signed up with broadly enthusiastic response from the industry.

- **Ability to operate the data platform:** in accordance with the standard design of a three-tier structure, two core platforms (production and capability exposure) complemented by two auxiliary platforms for data security and data governance have been created to enhance three servicing capabilities, namely, data capability, infrastructure components and production operations.

Serving more than **20** sectors
More than **1,000** clients and partners developed

China Unicom Beijing has implemented a Big Data governance system with “two horizontal and three vertical dimensions” to manage and assure on the structure. It is a technology-driven platform with security and management as basis, supported by security management and reflected in service management, ultimately resulting in the realisation of Big Data value. During significant national events such as the NPC and CPPCC, “Belt and Road” summit and the 19th CPC Congress, Big Data technologies were employed to facilitate real-time monitoring of pedestrian flow and public sentiment monitoring in successful completion of various important assurance tasks. The Company helped the government and relevant public transport authorities to determine the locations for building highways and public transport stations such as metro stations, and to improve the arrangement of public transport frequency. In the meantime, there were analysis in the trends of the spread of epidemic diseases in cooperation with medical and health authorities to realise the social value of enterprises.

Facilitating IoT development

China Unicom’s IoT is built around the strategy of an “IoT + platform” ecology featuring end-to-end overall servicing ability. With persistence in an innovation-driven approach, cooperative development and synergy advances, the Company teamed up with up/downstream partners along the value chain in coordinated innovation to contribute to transformation towards city digitalisation so that the mass may enjoy a smart life. As at the end of 2018, there were nearly 110 million IoT connections serving more than 15,000 corporate clients and covering key industrial sectors such as manufacturing, agriculture, transportation and logistics. China Unicom ranked among one of the top ten in “2018 WIOTRL”, the international world IoT convention.

- **Network ability:** through latest virtualisation technologies and common servers, a dedicated core NB-IoT network has been built. NB-IoT commercialisation in major Chinese cities has launched, as eMTC out-field pilot tests have been completed in Guangdong, Changsha, Xiamen and other locations.

- **Platform ability:** a stronger and more secure new-generation connection management platform has been announced. The platform’s strong ability in secondary operation provides more convenience to SMEs engaged in the development of customised innovative products and new commercial models.

- **Product ability:** global connected products are created to meet the requirement of domestic enterprises with global users for contract-signing and management at a single point, giving a boost to the international development of the enterprises. Meanwhile, more than 20 products were provided to solve social issues in the service of smart living.

- **Ecological ability:** through the joint establishment of the China Unicom IoT Industry Alliance, Innovation Expedition Centre and Incubation Laboratory, China Unicom has been consistently driving the growth of the IoT value chain towards maturity. Meanwhile, the IoT Developer Initiative has been launched and close to 100 applications received, providing a testing ground for SME innovation and business venture.

Nearly **110 million** IoT connections
Over **90 million** connection in fundamental platform
Serving over **15,000** corporate clients

The China Unicom Tianjin IoT platform provides one-stop IoT solutions to corporate clients with intelligentisation upgrade requirements, helping them to facilitate fast equipment access, management and in-depth analysis at lower costs, so that clients could acquire IoT capability, achieve product upgrade and enhance competitiveness. To partners in IoT ecology, the Company provides a platform for resource sharing and inter-connection of channels, ultimately accomplishing the aim of jointly facilitating fast development of the IoT industry by combining the strengths of all parties.



Innovative industry solutions

On the back of its competitive edge in cloud computing, Big Data, IoT and AI, China Unicom continued to step up with deployment in industry Internet. An industry Internet product centre was set up at the headquarters and 12 industry Internet companies were established across the nation to further improve the national support service regime, enhancing the servicing ability in proprietary integration and operation. In the meantime, product capability in industry Internet has been improved with the launch of 10+3 standard products and Internet solutions for key sectors.

- **Capability in solutions:** China Unicom has formulated and completed 74 innovative integration solutions relating to novel smart cities, with a 26% year-on-year increase in solutions available for nationwide application. The “Security Risk Control Platform Solution” was named for the “Top 10 Solutions in Network Security and industry Internet for Central Enterprises Award”, while the “Smart Livestock IoT Platform Solution” was named for the “2018 Exemplary IoT Application Project of China Award”.

- **Capability in integrated implementation:** a cloud relocation laboratory was built with a dedicated nationwide cloud relocation team supported by 227 staff to provide full support for the “cloud fibre smart enterprise” activity. The Company provided leadership in a number of large-scale cloud integration projects and fostered end-to-end business capabilities. The Snow Bright Project was honoured with the title “Excellent Industrial Solution in Safe Construction”.

- **Servicing ability in operations:** 24 nationwide operating system training sessions and provincial site training sessions were completed and more than 1,800 support initiatives were provided in various provinces in the country. The construction of the nationwide integrated operating system has progressed rapidly to provide the government and large enterprises such as central enterprises with assurance in operating services, while assurance for the “online policy deliberations and remote consultation” activity of the NPC and CPPCC has been completed with success.

Launch of standardised solutions

- **Smart brain for public administration:** in support to the nation’s drive for the “one net, one gate, one-time” reform in government services and faster progress in the construction of an “one-stop nationwide public administration online servicing platform”, China Unicom has committed full efforts to the building of the “3+X” smart public administration services products. Driven by the “cloud network” and guided by “digital intelligence” orienting towards government service and citizen service, China Unicom has facilitated real-time consolidation of data resources with the use of advanced AI technologies to enable an in-depth re-engineering of the service processes, with a view to achieving sound administration and benefits for the people through integrated online and offline high-efficiency services.

- **Smart brain for ecological environment:** focusing on the current requirements of eco-environmental governance, China Unicom has created the “Eco-environmental Brain 2.0” thanks to breakthroughs facilitated by AI and Big Data technologies. Based on the service cycle of monitoring, analysis, decision-making and governance, special efforts are dedicated to the making of products such as the blockchain-based reliable data platform for the monitoring of the ecological environment, joint eco-environmental protection and control, intelligent monitoring of public opinions on the eco-environment and smart river/lake chief 2.0, to provide strong informatisation support for eco-environmental management.

- **Novel smart cities:** guided by the city development strategy and riding on the strengths and expertise in new-generation information technology ahead of peers, China Unicom has fostered five major elements – a neural network with in-depth sensory abilities, a cloud-end heart providing shared high efficiency, a data-driven city brain, an administrative hub with joint command and a mutually beneficial industry alliance – for the construction of a data-centred and open-ended 4+N novel smart city regime: namely, one net (the integrated aerial and land intelligent sensory network), one cloud (the scalable cloud computing data centre), one data (a shared and open Big Data service platform) and one centre (a high-efficiency joint city command centre). On the back of the comprehensive abilities derived from the four “ones” described above, an open and reliable “strong platform” has been provided. Through extensive industry cooperation, N smart city was launched with strategic partners to offer “flexible applications” covering public administration service, as well as enterprises and the public, in a joint effort to create a new smart city ecology.

Launch of industry Internet 10+3 key products

10 proprietary products:

Industry	Public administration service						Ecological environment		General industries	
Name of product	Public administration service data sharing and exchange platform	One-stop public administration services	Internet + targeted poverty alleviation	Smart CPC organisation development	Confidential information integration	New county and region smart city cloud platform	Smart river (lake) chief integrated administration platform	Smart work site	Service outsourcing	Corporate commercial region

3 joint cooperation products:

Industry	Name of product
Medical care	Medical imaging cloud
Transportation and tourism	Industry surveillance and emergency command platform
General industries	Vehicle fleet administration platform

Smart education

China Unicom’s continuous efforts in the education sector has been repeatedly commended by the Ministry of Education as “China’s only carrier providing informatisation solutions in a systematic manner on the main battlefield of education”. In the education sector, China Unicom has provided integrated services comprising cloud platform and premium teaching resources to municipal, county and district education bureaus and helped to realise the cloudification of

education authorities and schools. For fundamental education, vocational education, higher education and teachers' training institutions all have rolled out the cloud desktop service, which has effectively enhanced the standard of education informatisation and management efficiency of schools and education management authorities. For pre-school, primary and secondary education, the nationwide project of "three connections and two platforms" has commenced, serving more than 620,000 teachers and students. "All Class Access" was also implemented nationwide in more than 500,000 classes and "All People Access" covered 9.2 million people.

China Unicom Jiangsu has sequentially built standardised examination venues for localities and schools in Nantong, Suqian and Nanjing University. Through upgrading the HD systems, it has enabled HD online patrolling and HDTV conferences, while a new full-frequency fraud prevention system has been built. Personal identification function has been introduced to the examination service to enable real-time transmission of examination data. Through extensive and in-depth application of modernised information technology in examinations, it committed to assuring a fair and unbiased examination setting, so as to help local authorities to advance the development of national standardised examination venues, contributing to the national education and examination reform.



◎ Smart medical care

China Unicom has provided integrated solutions for Cloud + Network applications to the medical and healthcare industry, offering a high-quality, highly reliable and highly secure cloudification service for hospital informatisation systems to various local medical institutions. National health information service, regional medical coordination service and other integrated health services for the benefit of the people are being offered to medical administrations and authorities at all levels.

◎ Smart public administration service

Adhering to the founding principle of "strong platform and flexible application" and offering to public administration clients the service model of "empowering platform + scenario application", China Unicom has enhanced the efficiency and effectiveness of the public administration services. Leveraging massive real-time public service operating data, China Unicom has proactively learned and continued to optimise the service process through multi-dimensional perception, thorough observation, real-time decision-making and ongoing progression. The Company has facilitated the transformation of public administration service management from "passive service" to "intelligent service", from "experience-based management" to "scientific management", from "manual service" to "systematic service", and from "public administration service informatisation" to "public administration service intelligentisation", introducing a new form of smart public administration service.

China Unicom Xianning in the Hubei Province provided assistance to the government to develop the digitised city administration platform. Based on digitised mapping and unit grid division to integrate multiple data resources of basic geography, area codes, and municipal and community servicing, and introducing an integrated city administration and public service command system that collects information from city supervisors and citizen service hotline. Through information sharing among multiple departments and coordinated operation, a new mechanism for public supervising and processing city administration and public service has been established underpinned by swift communication, accurate accountability, timely handling and efficient operation, leading to a comprehensive enhancement of the standard in city administration and public administration services.

◎ Smart transportation

In connection with smart transportation, China Unicom has actively explored to formulate improvement plans for smart transportation organisation work aimed at "eliminating traffic jams and keeping traffic smooth to alleviate traffic pressure". With technology-based and intelligentised transportation safety management as basis, smart transportation organisation improvement plan was formulated in order to bring new experiences in smooth traveling to the mass.

With the aim of "combining the remote and the vicinity, tackling root causes as well as perceived problems, working in relation to the near term, seeking active progress and enabling smart travelling", China Unicom Ningxia has contributed to the construction of intelligent transportation in Wuzhong City in Ningxia through the building of an intelligent integrated transportation management and control platform, a Big Data vehicle management and control platform, intelligent electronic police surveillance equipment and cloud storage systems, among others. Since the implementation of the construction project, transportation in Wuzhong City had significantly improved and illicit behaviors in transportation reduced substantially, bringing positive experiences in travelling to its residents.

◎ Smart environmental protection

In vigorous response to the national informatisation and strategic plan of the "uphill battle for prevention and control of pollution", China Unicom has integrated innovative technologies including Cloud, Big Data, IoT and AI and built on its river chief system and Ali Cloud Environment Brain 1.0 products to form a data closed-loop from the four segments of environmental monitoring, analysis, decision-making and governance through the four principal platforms of data management, data resources, learning algorithms and operating services in support of environmental authorities' effort to build a continuous circulation system of ecological improvements, in a powerful drive of the in-depth integration of the Internet and the development of ecological civilisation.

In July 2018, China Unicom Baoshan in Shanghai successfully implemented the first intelligent system for monitoring garbage spillovers, further cementing the achievements as a national hygiene town, as well as enhancing the standard of living quality for its residents.

◎ Smart tourism

China Unicom has consolidated industry resources and capabilities, and actively participated in open data cooperation to expand its fundamental data resources, to cementing the leading ability in data collection integration capability based on different content and types of data. Diverse application services on transportation and traveling data have been provided to build the tourism Big data platform (2.0), as well as premium products including tourism industry monitoring and emergency command platform, integrated scenic area management platform, and the Lexiang hotel platform.

China Unicom Xin'an in the Henan Province has consistently driving the development of a "smart tourism" platform as part of "Smart Xin'an" to apply the abilities of intelligent equipment in various city scenarios, so that its city life will become more efficient and more comfortable. With the help of the "smart tourism" project, Longtan Grand Canyon and Daimei Mountain Scenic Area have been accredited "One Diamond Smart Scenic Attraction" at the national tourism promotion conference.

◎ Smart manufacturing

To respond positively to the call of the State for transformation and upgrade of industrial manufacturing, China Unicom has launched an "Internet+ manufacturing" servicing model leveraging its expertise in informatisation and network resources advantage, helping to resolve critical issues in the value chain faced by the manufacturing sector and driving the optimisation and transformation of enterprises.

China Unicom Jiangxi has linked up various sections in the value chain and created the "Mass Service Link", China's first complete S2B2C ecological platform for the apparel industry, based on the current characteristics and critical issues of the sector and the current application scenario, with a view to helping enterprises in the textile and apparel industry to realise customisation, flexible production and intelligent manufacturing, thereby achieving Internet-oriented transformation.

◎ Smart agriculture

China Unicom has been actively building a targeted poverty alleviation big data platform and the WO land "Internet+ agriculture" cloud platform to promote agriculture-related informatisation application products such as agricultural tracking, home security protection, the Snow Bright Project, and others, to improve the production work of agriculture, rural and farmers, enhance the efficiency of agricultural production, and upgrade the standard of modernised management in rural villages.

China Unicom Miyang of Henan has built a number of information platform in an intensive implementation of the "e-commerce + industry + poverty aid" model on the back of its strengths in e-commerce platform. The e-commerce operations centre currently hosts 21 e-commerce companies and 9 business venture teams; while www.pangu1688.cn is hosting 689 companies with sales exceeding RMB30 million; the Miyang county specialty agricultural products tracking administration platform provides source tracking for 36 specialty products in Miyang County.



Miyang County e-Commerce Poverty Alleviation Rural Service Station

◎ Smart finance

China Unicom is committed to financial platform development, new-generation upgrades of financial products and enhancement of users' operating capability. In addition to serving users and partners well, China Unicom has also vigorously explored industrial customers and scenarios of different businesses to facilitate innovation and breakthrough in new value for the communication + payment/financial industry. In 2018, further communication with clearing institutions such as China Nets Union, UnionPay and the Clearing Centre actively provided access to various payment services, the number of banks China Unicom supported increased to 543. Meanwhile, the Company continued to drive innovative services such as channeling through types II and III accounts and credit cards, while building new systems such as cross-border payment, IVR payment and POS acquiring to support cross-border services. Financial service products such as WO Instalment, staff service, CPC fee assistance and poverty alleviation e-mall have been launched to provide more convenient and efficient financial services for internal and external customers.

🌱 DEVELOPING SMART FUTURISTIC TECHNOLOGIES

China Unicom has persisted an innovation-driven approach and has actively explored opportunities to deploy in key frontier areas, while enhancing proprietary innovation in an intensive effort to integrate the development of new technologies and mobile communications, driving ability enhancement in product and service supply.

Embracing Artificial Intelligence (AI)

Backed by ongoing research of AI technologies, China Unicom has been actively exploring and implementing AI applications in network, service and management.

- Use of AI to enhance network intelligentisation and active investigation in frontier sectors such as automated-driving network.
- Active use of AI to empower industry applications, providing solutions in areas such as smart city and smart medical care and facilitating the development of the real economy.
- Use of AI in intelligent customer service which drove solid results in customer service quality improvement, cost reduction and efficiency enhancement.
- Use of AI to enhance the intelligentisation level in human resources, finance and legal matters, achieving the intelligentisation of management.

In active implementation of the national AI strategy, China Unicom has led and participated in the formulation of a number of AI international standards and held numerous positions with international standards associations. The Company has participated in a number of AI-related source development projects under the Linux Foundation, and also served as the deputy general secretary unit of China Artificial Intelligence Industry Alliance.

Tracking blockchain technologies

With a strong focus on the research of core blockchain technologies and its innovative applications, China Unicom has actively explored and implementing applications of blockchain in network, service, operation and management, driving the development and scenario implementation of blockchain technologies to assist industrial transformation and upgrade. Study is made to apply blockchain technologies in the enhancement of network capability, adopting the decentralised coordination model of blockchain as an important supplement to the traditional coordination model for production, operation and management, in an active use of blockchain to combine with industry Internet.

China Unicom has led and participated in the formulation of a number of blockchain-related international standards. In 2018, there were 113 blockchain patents, ranking 6th globally and 2nd in China.



Expediting technology research

In 2018, China Unicom continued to drive technology research and built an innovative technology system consisting of four components, namely the organisational system, operating system, assessment system and incentive system, while at the same time a technological innovation informatisation platform was also built to solidify the foundation in technological innovation.

- In connection with international standards, China Unicom holds more than 100 incumbent positions at a number of important international standards associations and resource development organisations, among which more than 20 positions are important management roles, basically covering important communication and IT sectors in the international market.

- In connection with industry standards, China Unicom has led and participated in the formulation of 285 industry standards, ranking 3rd among members of China Communications Standards Association (CCSA) based on number of standards formulated, while many of China Unicom's staff hold important positions with CCSA.

- "Bidirectional ceiling antenna used in distribution system in mobile communication network room" was accredited with a silver award at 20th WIPO-CNIPA Award (China Patent Award), while numerous projects garnered industrial science and technology awards.

Accelerating 5G research and development

In 2018, China Unicom engaged in full efforts to drive the development of the entire 5G value chain in service, network, terminal and application, as large-scale 5G networking tests were conducted and construction plans were being deployed.

- Completion of three 3GPP international standards, including the China Unicom-led "4G/5G close coupling network structure", as well as the formulation of the 5G NR series corporate standards, while progress was made in the formulation of 5G NR related industry standards.

- Completion of 5G base station equipment features and technical requirements, internal and external field testing standards, and deployment plans and guides for the test of new technologies.

- 737 base stations were constructed in 17 cities to run outdoor field tests and service trials, among which five outfield sites have allocated to large scale network testing, driving the maturity in the 5G value chain.

- With persistence in the simultaneous synergy of the terminal and network, China Unicom issued China Unicom 5G Terminal White Paper to clearly specify the technical requirements of China Unicom's 5G terminals, in vigorous drive of the development of the 5G terminal value chain.

- China Unicom's 5G Innovation Lab officially established to focus on work including the innovation of 5G industry applications.

545 essays written on international standards submitted

285 leading industry standards and participation in formation in 2018

1121 patent applications made

441 patents granted

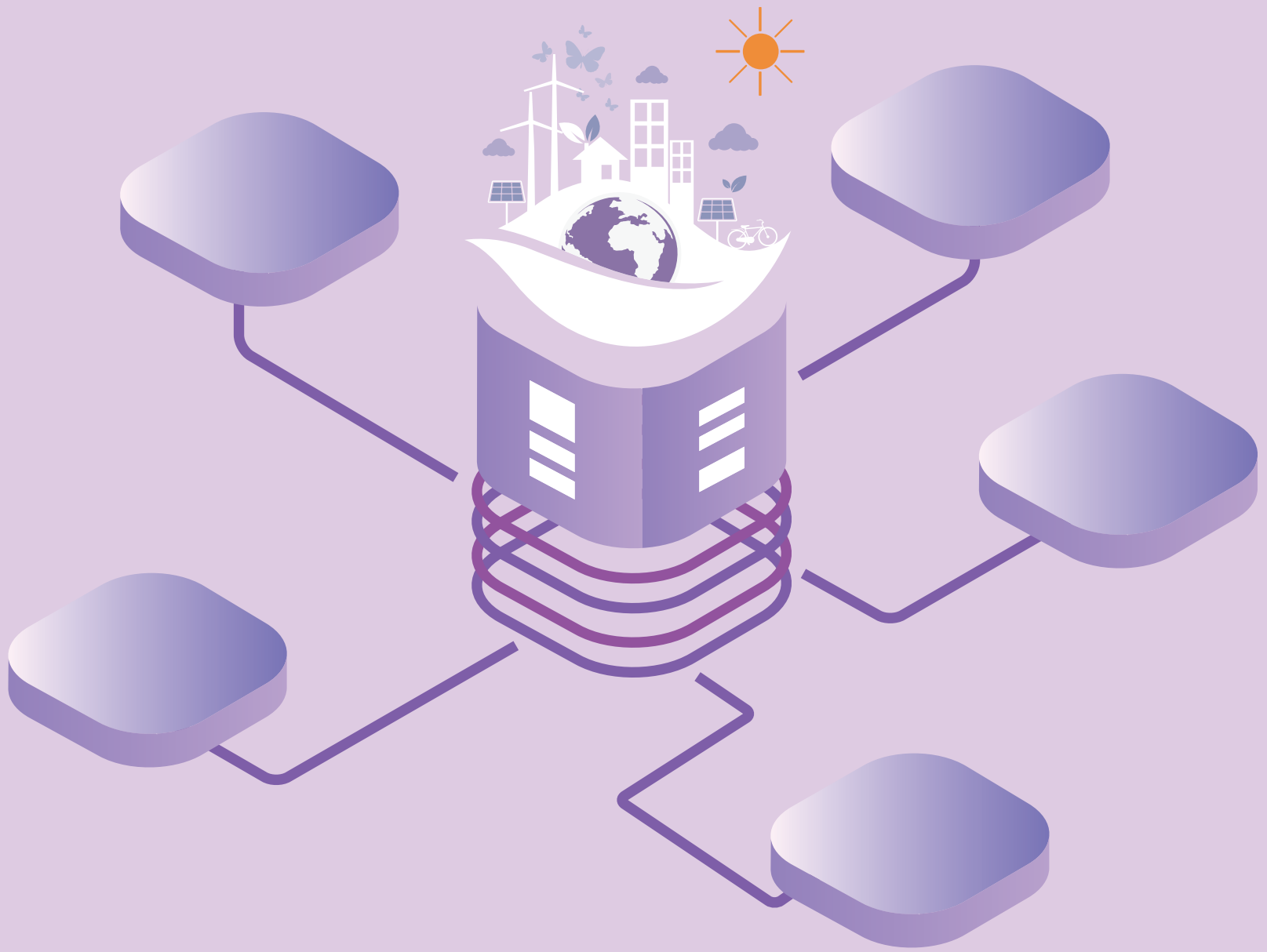
On 29 September, in midst of the PT Expo China, China Unicom joined hands with Huawei in performing China's first 5G off-site ensemble concert from different locations. During the concert, "China Unicom Song" was played simultaneously at three locations in Beijing in an ensemble of different instruments. The grandeur of the performance was broadcast live at the venue of the launching ceremony. The harmonious combination of Chinese and Western instruments was brought to the audience in millisecond-grade transmission, bringing to all an experience of a bright future 5G network would lead to.

New Ecology

FACILITATING NEW DEVELOPMENTS CONNECTING IN AND OUT

Co-development with partner operators	62
Starting a new chapter of mutual success for the industry	62
Deepening cooperation with Internet companies	64





NEW ECOLOGY: Facilitating New Developments Connecting In and Out

China Unicom has been actively building a new ecology connecting in and out and committed to the development of an open, shared, inclusive and win-win beneficial environment with ecological partners, teaming up to care for the daily needs of people. By building ecological capabilities, China Unicom has facilitated high-quality development for the value chain and providing support for the betterment of life for the people in concerted efforts.

Measures adopted in 2018

- Stepping up with the co-building and co-sharing use of telecommunication infrastructure facilities, and enhancing network service ability, the efficiency and quality.
- Driving concerted development and fulfilment of social responsibility among enterprises along the value chain such as equipment suppliers, terminal suppliers, open channel operators, virtual network operators and private capital enterprise partners.
- Deepening cooperation with Internet companies in the forging of capabilities in New Retail, brand promotion, channel touchpoint, industrial Internet, and other areas.

Actions to be taken in 2019

- To engage actively in cooperation with partners in the co-building and co-sharing of 5G construction.
- To further enhance cooperation in the value chain, leveraging more extensive cooperative Internet touchpoints to provide users with communication products with more favourable terms and network service at better quality.
- To deepen product cooperation and expand business scale in cloud computing, Big Data, Internet of Things (IoT) and industrial Internet.
- To investigate new capital cooperation with partners.

CO-DEVELOPMENT WITH PARTNER OPERATORS

In thorough implementation of the new development philosophy and based on the principle of “mutual success in cooperation and co-development”, China Unicom has been vigorously driving mutually complementary operations and in-depth cooperation in resources and innovation among peer operators in the industry with a special focus on enhancing network service ability and network quality, in order to generate synergies and enhance the co-building and co-sharing of telecommunication infrastructure facilities.

- Co-built and co-shared communication infrastructure facilities such as transmission pole lines, pipelines, underground cables and indoor distribution systems to reduce project investments and achieving efficiency of over RMB750 million.
- Co-built of 2,100 route-km of transmission pole lines, 4,900 route-km of pipelines and 3,690 indoor distribution systems.
- Co-shared usage of 6,500 route-km of transmission pole lines, 860 route-km of pipelines and 765 indoor distribution systems with partner operators.
- Opened up 8,540 route-km of transmission pole lines, 1,030 route-km of pipelines and 1,100 indoor distribution systems for co-sharing by partner operators.

Responsibility performance indicator	2016	2017	2018
Co-building rate for indoor distributed system (%)	73	71	79
Co-sharing rate for indoor distributed system (%)	63	93	93
Pole line co-building rate (%)	85	88	91
Pole line co-sharing rate (%)	92	95	95
Pipeline co-building rate (%)	85	92	94
Pipeline co-sharing rate (%)	86	98	96

STARTING A NEW CHAPTER OF MUTUAL SUCCESS FOR THE INDUSTRY

Targeting the value chain, China Unicom has expanded cooperation in an open-minded manner in numerous areas, including technology, services, resources and capital, to build a positive industry ecosystem.

Cooperation with equipment vendors

© Driving regulated management

- The procurement of supplies is conducted in strict accordance with the Company's relating regulations for procurement and in adherence to the principle of fairness, impartiality and openness.
- Intensive “transparent procurement” and “green procurement” have been implemented in active fulfillment of the Company's social responsibility. Through centralised procurement at the group level and the provincial level, procurement costs were lowered, as the amount of centralised procurement accounted for 88% of the total procurement amount.
- A procurement system has been established to comprehensively streamline and affirm China Unicom's procurement management systems of 1+2+N. In 2018, 16 procurement management systems were formulated (including new additions and amendments).

● Currently, there are already 25,000 suppliers providing 940,000 commodities for the e-commerce platform, while the number of annual orders amounted to 1,252,000, with a net transaction amount of RMB41.26 billion, representing a growth of more than 55%.

In the central enterprise procurement management benchmarking organised by the SASAC, China Unicom retained ranking 2nd in 2018. In the tender inspection organised by MIIT, no significant operational issue in procurement was identified, indicating notable improvements in tender compliance.

25,000

environmentally-accredited enterprises listed on the e-commerce market

◎ Driving equipment suppliers to fulfill responsibilities

● To prevent supply chain enterprises from making any negative impact on the society, a supplier black-list management mechanism was established to manage post-performance assessment of the e-commerce platform, with a view to enhancing real-time management and risk prevention in a relation to integrity and swift settlement, as well as building a legal risk prevention and management mechanism regarding procurement and communication.

● Internet+ procurement has been implemented through the promotion of the e-tender system and order trading system throughout the Group. With improving capabilities in e-commerce market, the Company is well-positioned to provide convenient procurement services for sunshine poverty aid.

● A total of 320 participants from our branch companies, subsidiaries and headquarters departments enrolled in 3 training sessions on the procurement system.

◎ Cooperation with terminals suppliers

◎ Building a mechanism and platform for strategic sharing

● At “China Unicom Partners’ Conference” convened in Chongqing in 2018 attended by about 1,000 partners and over 10,000 representatives of industry peers, China Unicom presented the plan for cooperation and operating strategy to the value chain. There were 54 brand partners at the crowd-funding conference, offering 315 types of products, more than 60 million sets of crowd-funding terminals, and 7.44 million sets of omni-intelligent devices, with an aggregate transaction amount of approximately RMB50 billion.

◎ Contributing to the development of the industry

● China Unicom has formulated and improved the terminal standards while protecting intellectual property rights. Amendments have been made to the 4G terminal standards, intelligent SMS specifications and VoLTE specifications, and 14 white papers have been issued, including the All Network Access Terminals (China Unicom) White Paper 3.1 and Novel Terminal White Paper V1.0. Among them, “China Unicom 4G+/5G terminal enterprise standard, industry standards and international standards” has received China Unicom 2018 Technical Standard Class I Award.

● The cooperation in the six-mode all network access terminals has continued to expand, accounting for a dominant share of the 4G terminal market. As at October 2018, six-mode all network access terminals accounted for 85.5% of market share, representing a year-on-year increase by 5.7%.

● MIIT approved eSIM trial in 7 cities, where strong efforts have been made to promote Apple Watch S3 based on the “one-number, two-terminal” eSIM to satisfy various forms of user requirements for smart terminal communication.

◎ Driving terminal suppliers to fulfill responsibilities

● China Unicom performs prudent checks on suppliers in respect of industry credentials, product sources and financial/tax auditing, with a special emphasis on the responsibility for after-sales services to provide genuine assurance that terminals are proactive and reliable in connection with the national economy, environmental protection and user experience.

● Assurance on energy-conservation, eco-friendliness and safety. Shortlisted terminal manufacturers are required to provide information on quality accreditation, environmental accreditation, as well as financial reports and guarantee that such information is true and valid.

● Requirement on manufacturing partners to put in place a comprehensive after-sales service mechanism.

● Key tests being conducted on power consumption in the test of customised terminals and work with manufacturers for improvements.

● Requirement on handsets and their preloaded applications launched by terminal manufacturers in association with China Unicom to be in compliance with relevant national standards and to have passed national tests on the grading of terminal safety to ensure security of user information on the terminals.

● In prevention of any negative impact of terminal supplier on the society, China Unicom has highlighted the responsibility aspect in the legal terms under the supplier cooperation agreement; meanwhile, China Unicom has also procured suppliers to assist users’ liaison with manufacturers to solve after-sales issues. Since 1 January 2013, all partner manufacturers have signed the “test undertaking”. If partner manufacturers violate pertinent national regulations resulting in a negative impact on the society, punitive measures will be adopted.

◎ Cooperation with open channel

● Open channel cooperation with approximately 200,000 partners have been carried out to build a sustainable ecological channel cooperation regime for the win-win benefits between China Unicom, channels and users.

● Partners ability in compliant sales has been enhanced; financial capabilities such as red packets, e-coupons and instalments have been made available to increase capabilities in cooperating partners.

● Platform functions such as facial recognition and auto photo matching have been made available, and devices such as ID readers and automated card writing ability were made for partners to help with legal and compliant operations and real-name registration.

● Consistently enhancement in IT support capabilities by accelerating commission settlement and ensuring honest operations, in an overall enhancement of fund efficiency for partners.

● To prevent channel partners from making any negative impact on the society, amendments were in place for business agency agreement to further specify the duties, rights and interests of the parties and the requirements and execution details relating to legal sales and honest operation by distributors.



Cooperation with mobile virtual network operators (MVNO)

Enhancing MVNO cooperation

China Unicom has always actively supported the development of MVNO enterprises in a “proactive, cooperative, open and mutually beneficial” manner. In 2018, the Company commenced MVNO business in cooperation with 31 enterprises, expanding the scope of pilot operations to cover 220 prefecture-level cities, including most provincial capitals and economically developed regions. China Unicom has been actively promoting healthy development of the MVNO business by assisting MVNO operators to enhance their competitiveness through differentiation, optimising the module product features on a continuous basis, introducing the new business model of intensive cooperation, opening up the ability of speed limitation on domestic data, and providing anti-harassment and scam call analyses.

Approximately **55.14** million MVNO users as at the end of 2018, representing over **67** % of market share

Assisting MVNO operators on real-name registration implementation

China Unicom has provided assistance to MVNO enterprises on real-name registration implementation and network information security in number of ways.

- Implementation of real-name registration has been linked to the phone number allocation policy for MVNO enterprises.
- Network interception of junk SMS and other malicious messages, as well as free anti-harassment and scam call analyses supported by daily tweet of suspicious numbers.
- Interviewing non-compliant enterprises to demand rectification and convening of real-name registration work meetings on a periodic basis based on business development conditions to procure MVNO enterprises to step up with real-name registration.
- Significant improvements in real-name registration in the MVNO business in 2018, as all MVNO enterprises conducted rigorous real-name registration for new users in accordance with regulatory requirements, while progress was also noted in the handling of junk SMS, scam calls and other malicious network information.

Cooperation with private capital in network deployment

Broadband cooperation with private capital

In 2018, China Unicom actively advanced broadband cooperation with private capital with a special focus in the southern regions, building 7.46 million new ports for private capital broadband cooperation, out of which 5.64 million were located in southern provinces and cities. There were close to 40 million private capital cooperation ports, accounting for approximately 16% of all broadband ports. A broadband cooperation plan has been drawn up with Founder Group to provide services to Founder users.

DEEPENING COOPERATION WITH INTERNET COMPANIES

Exploring “New Retail” pilot operations

China Unicom has engaged in intensive cooperation with various Internet companies such as JD.com, Alibaba, Suning, Tencent and Baidu, to explore the development in new retail operation.

- New Retail stores are established in cooperation, featuring intensive cooperation with strategy partners in areas such as supply chain, IT support, Big Data precision marketing, integrated online and offline operation, and intelligent applications.
- To replicate the experiences of new retail stores such as business model, mechanism and capabilities to China Unicom’s business outlets on a trial basis in order to enhance operating capabilities.
- A new retail platform system has been built to further integrate New Retail capabilities and export to open channel partners with a view to empowering, enhancing and increasing capabilities and capacities, and forming a novel cooperation model featuring joint operation, marketing and sales.

Enhancing cooperation in Internet promotion

China Unicom has launched campaigns on the Internet by taking opportunities presented by major events, such as leveraging the World Cup to strengthen promotion for Tencent King Card, Ice Cream packages, and other key businesses. Through the combination of TV and Internet advertising, China Unicom has built an all-touchpoint promotion and enhanced our brand affiliation by leveraging CCTV’s new core media resources and Youku’s privileged platform.



Pushing forward customer touchpoint cooperation

China Unicom and Internet partners collaborated to launch APP touchpoint cooperation. Through leveraging the partners' platforms, premium network services and concessionary packages to users were provided for the mutual benefit of users, partners and China Unicom. China Unicom has actively explored new models such as resource swap (SMA Model), launching extensive cooperation with Internet SMEs, FMCG companies, as well as banking and financial institutions to cover daily-life touchpoints of users.

- Cooperation with 54 Internet partners and 63 collaboration projects were in commence, including 139 Internet packages. More than 30 cooperative projects under the SMA business (resource swap model) were completed during the year.
- Channel touchpoint activities such as mobile qq, WeChat red dot diversion and b Station anniversary celebrations and Alibaba Singles' Day were successfully held.

During the cooperation, China Unicom conducted commission settlement, resource swap and ability output in a timely and proactive manner while in strict compliance with the cooperation agreement. In 2018, the number of 2I2C billing users, cumulative billing revenue and new users increased significantly as compared to previous year.

In a cross-industry cooperation between F.C. Internazionale Milano and China Unicom Qinghai, a new "Sports + Internet" model was launched in China, the first of its kind in the country, to present football fans with an exclusive Inter Milan Fan Card that combines communication interests and sports interests, in a move to satisfy the people's demand for quality life with the construction of a brand new sporting business ecology of the Internet era.



A press conference held on 7 November 2018 announcing the strategic cooperation between F.C. Internazionale Milano and China Unicom Qinghai.

More intensive cooperation in capital

Yunlizhahui Technology Company Limited was established in a joint venture with Alibaba to provide theoretical and practical guidance in digitalised transformation on the back of core technologies such as cloud computing, Big Data, IoT, AI and blockchain, offering comprehensive solutions, cloud product services and IT technical services in areas including government service, finance, eco-environment, police, and manufacturing, and others. More than 150 mainstream enterprises in the value chain have been assembled in a joint effort to develop "Platform + Application" capabilities.



China Unicom teams up with Alibaba as a forerunner in the digitalised transformation of government and enterprises

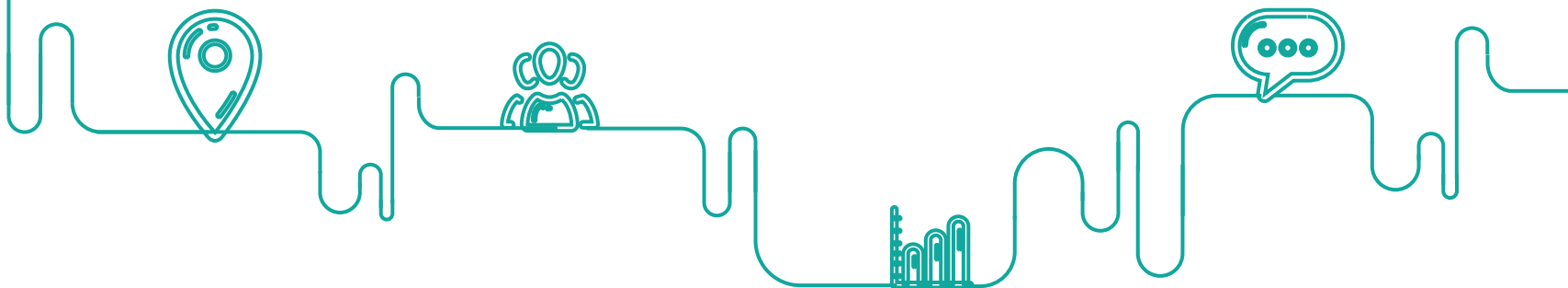
Yunjing Wenlv Technology Company Limited was established in a joint venture with Tencent to focus on Big Data-driven tourism, aiming to build core competitiveness in tourism big data and tourism application software, while providing core services such as "tourism big data, smart tourism development and operating services" for the empowering development of the tourism sector.

Yunjizhahui Technology Company Limited was established in a joint venture with Wangsu to engage in CDN and CDN-related security and edge computing services, aiming to drive comprehensive upgrade in the services and products of the CDN industry.

Robust Management

REGULATING THE PRACTICE OF SOCIAL RESPONSIBILITY

Strategy of responsibility	68
Organization of responsibility	69
System for responsibility	70
Capabilities on responsibility	71
Participation of responsibility	71

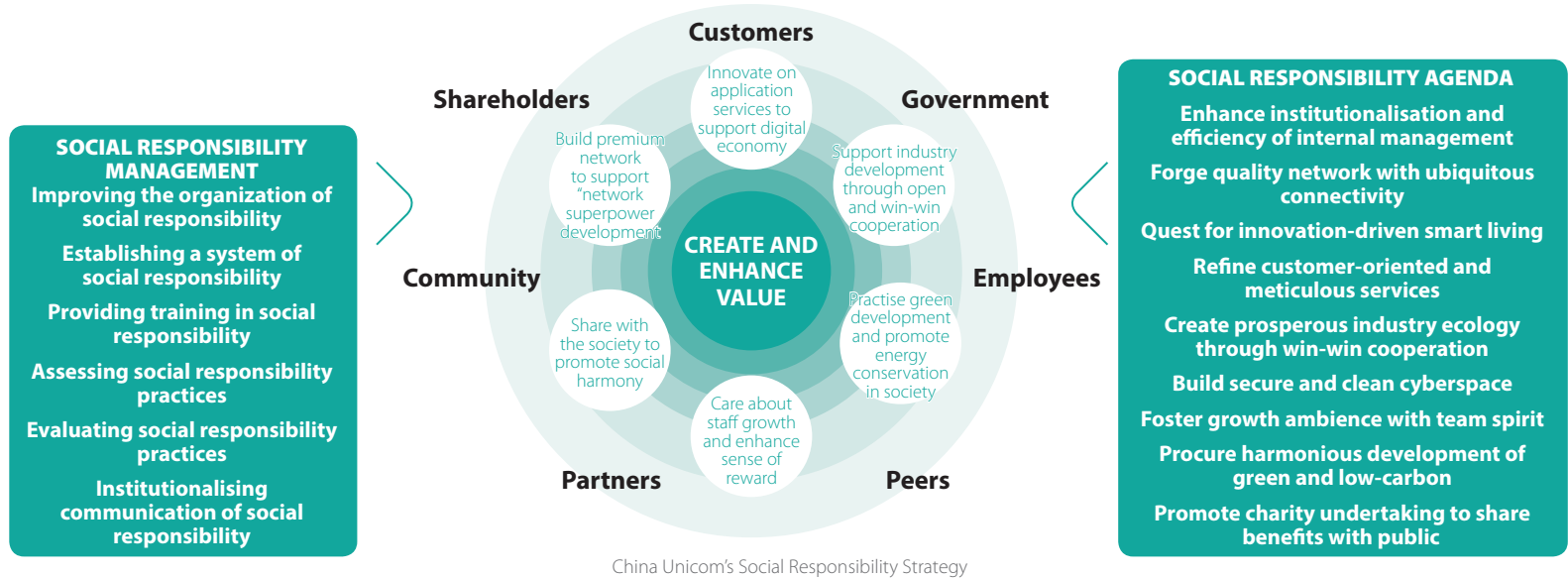




ROBUST MANAGEMENT: Regulating the practice of social responsibility

STRATEGY OF RESPONSIBILITY

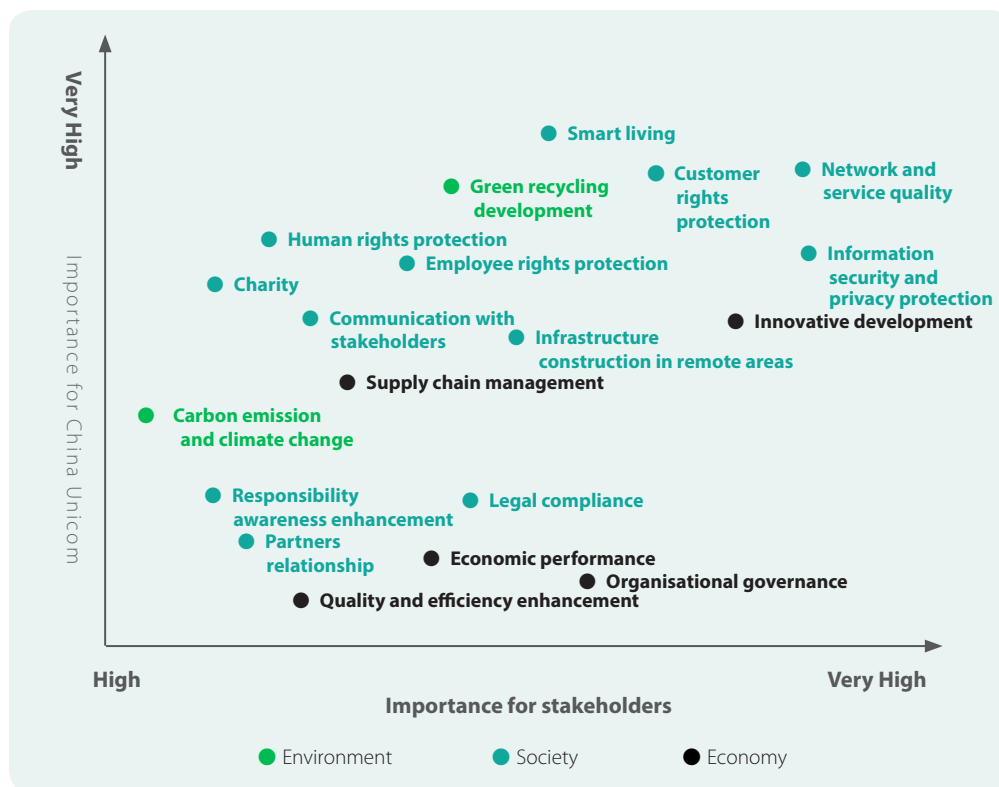
Led by the new development philosophies of “innovation, coordination, greenness, openness, and sharing”, the Company took practical steps to contribute to the “network superpower” strategy, “Belt and Road” initiative, supply-side structural reform, three critical battles and other national strategic deployment, fulfilling its obligations through responsible operations. It continued to enhance 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.



China Unicom has formulated a three-year social responsibility plan and determined nine substantial agenda according to social responsibility agenda selection procedures established under the principle of “closely following standards, regularly updating and sustainably improving”. Our social responsibility agenda will be reviewed every three years in close tandem with international developments and domestic trends as well as the standards of advanced enterprises, such that social responsibility implementation is guided by scientifically selected agenda to ensure the effectiveness, high standard and positive influence of our social responsibility implementation.



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



ORGANIZATION OF RESPONSIBILITY

China Unicom has formulated the “China Unicom Social Responsibility Administrative Measures” to specify the composition of responsible institutions and duties of relevant units. Under the leadership of Social Responsibility Guidance Committee, the Corporate Development Department/Legal Department serves as office in charge of daily work. Other relevant departments in headquarters, the 31 provincial branches and subsidiaries are responsible for social responsibility implementation and carry out responsibility practice in their respective business specialisations.

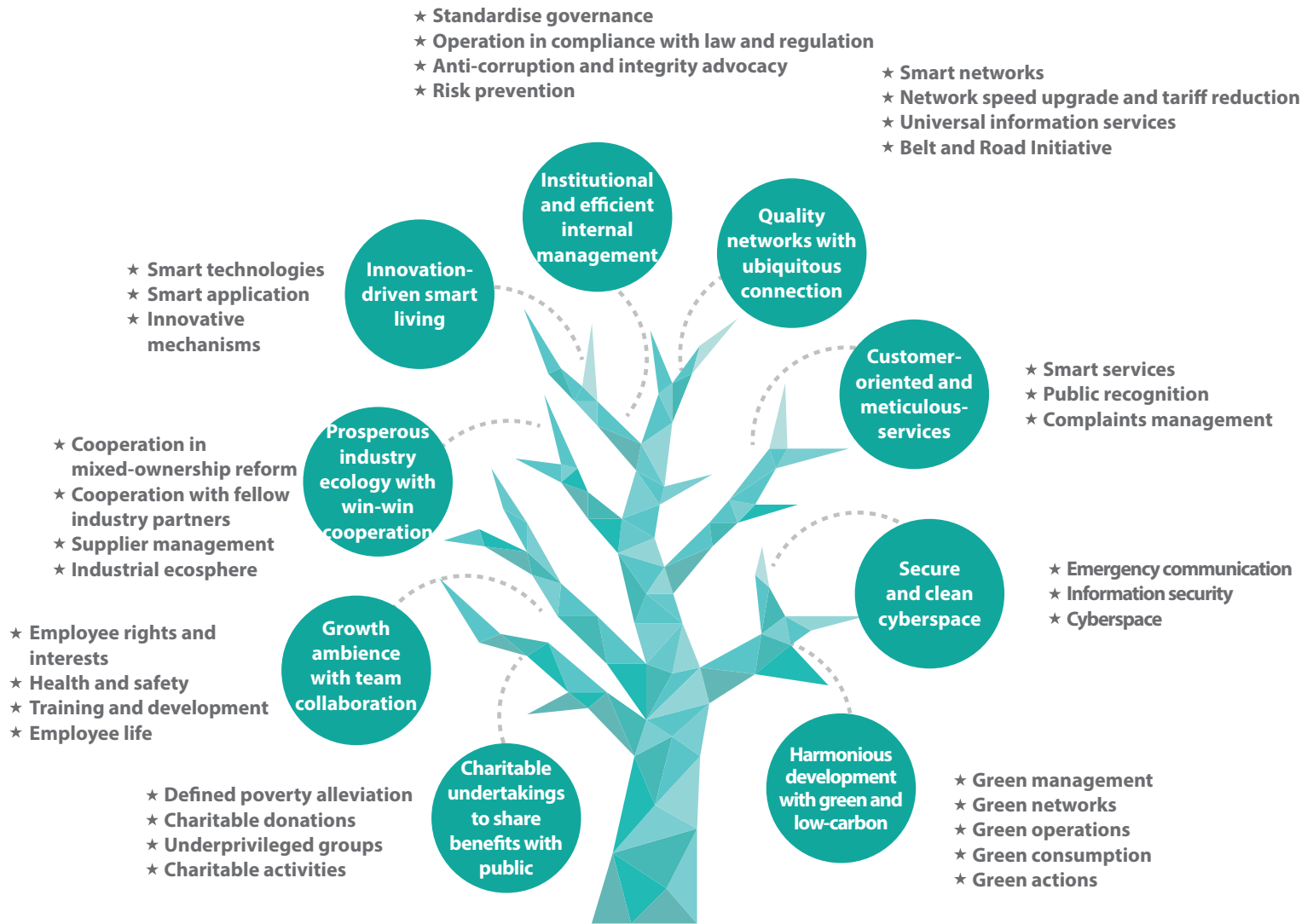


China Unicom's social responsibility working organisation and major duties

SYSTEM FOR RESPONSIBILITY

The Company's social responsibility management system comprises of organisation management, implementation management, communication management and performance management etc. In operation, we adhere to the principles of management first, incorporation into operations and joint actions by higher and lower levels. The formulation of social responsibility plans, promotion of social responsibility implementation and preparation of social responsibility reports are based on the said system.

In strict compliance with international and domestic social responsibility standards, China Unicom focused on nine substantial agenda of the Company and further optimised the "China Unicom Social Responsibility Performance Indicator System", which include 35 categories and 131 indicators, and drove social responsibility to be effectively integrated into enterprise production and operation on that basis.



China Unicom CSR Indicator System

China Unicom carries out social responsibility practice based on core agenda and professional specialties on a Group basis and establishes a social responsibility practice reporting system. Outstanding case of social responsibility practices are selected to include in social responsibility reports, while excellence social responsibility cases are chosen and reported to the SASAC, information and communication industry associations and Global Compact for promotion. In 2018, our 31 provincial branches reported more than 160 cases of social responsibility practices, among which 4 cases were recommended for inclusion in the SASAC topical research, while 3 cases were nominated for Global Compact awards for Chinese networks, with 1 of them winning the Best Practice Award.

📌 CAPABILITIES ON RESPONSIBILITY

China Unicom launched nationwide social responsibility training in 2018. Approximately 80 social responsibility management personnel from 31 provincial branches participated in training, with featuring talks by authoritative institutes and speakers on international reports and policies on sustainable development, the ESG policy of The Stock Exchange of Hong Kong Limited, the ESG policy for China A Shares, green finance and responsibility investment etc, which emerged with more profound understanding of social responsibility and broadened international horizon.



We have participated in the social responsibility Training Session for Central Enterprises hosted by SASAC of the State Council. Leaders, experts and scholars from SASAC, Chinese Academy of Social Sciences, WTO Tribune and Shanghai Jiao Tong University shed light on social responsibility theories and trends from different perspectives, while peers from Lanxess AG, State Grid Corporation and China Merchants Group shared their experience in social responsibility practices in great depth. Our employee also attended experiential training in the sales outlet of Southern Power Grid in Shanghai for a comprehensive enhancement in social responsibility awareness and capability.



Social responsibility Training for Central Enterprises

In 2018, China Unicom actively participated in various forums and seminars organised by social responsibility groups, paid attention to the social responsibility development trends, learned from outstanding enterprises and contributed its owns ideas, in order to support the ongoing in-depth development of social responsibility.

Host	Event
UN Global Compact	Received "2018 Corporate Best Practice Case on Sustainable Development" Award at "2018 China Business Summit on Achieving SDGs".
SASAC of the State Council	Participated in the topical research of "Research Report on Corporate Social Responsibility of Central Enterprises (2018)" and "Central Enterprises 'Belt and Road' Responsibility Fulfillment Report (2018)", completing questionnaires and reporting cases.
GRI Greater China Regional Annual Meeting	Engaged in exchanges regarding sustainability report and corporate ESG information management and disclosure.
KPMG	Engaged in exchanges regarding assessment on sustainable investment.
WTO Tribune	Received an award at 11th China CSR Reporting International Seminar and "Golden Bee CSR Report Honor Roll 2018" releasing ceremony.
Caixin Media	Received an award at the ceremony announcing 2018 China ESG50 Index constituents.
United Nations	Launched "Case For Change" activity with UN News, GSMA and iFeng Charity at "73rd United Nations Day" ceremony.

📌 PARTICIPATION OF RESPONSIBILITY

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

Practical issue	Stakeholder	Form of communication	Expectations for China Unicom
Enhance institutionalisation and efficiency of internal management	Shareholders	<ul style="list-style-type: none"> General meeting of shareholders Investor meeting 	<ul style="list-style-type: none"> Timely and transparent information access Long-term stable investment gains Corporate governance and risk control Legal compliance and clean operations
	Government	<ul style="list-style-type: none"> Face to face communication Meetings 	<ul style="list-style-type: none"> Fair competitive market order Efficiency enhancement and cost reduction
	Public and media	<ul style="list-style-type: none"> Phone communication and forums Internet-based communication 	<ul style="list-style-type: none"> Timely knowledge of Company information Interactive communication with the Company
Forge quality network with ubiquitous connectivity	Customers	<ul style="list-style-type: none"> Service hotline Weibo/WeChat NPS (Net Promoter Score) survey 	<ul style="list-style-type: none"> High-speed and smooth networks Innovative smart network services High-quality networks in remote areas
Quest of innovation-driven smart living	All stakeholders	<ul style="list-style-type: none"> Meetings Visits Weibo/WeChat 	<ul style="list-style-type: none"> Smart products that enhance the quality of living Innovative and progressive communication technologies Internet-oriented management systems
Refine customer-oriented and meticulous services	Customers	<ul style="list-style-type: none"> NPS survey In-depth visits and meetings Customer activities 	<ul style="list-style-type: none"> Favorable and transparent tariff policy Convenient and efficient service channels Effective after-sales service assurance
Create prosperous industry ecology through win-win cooperation	Partners	<ul style="list-style-type: none"> Partners' conference Meetings, visits Self-service portals of partners 	<ul style="list-style-type: none"> Wide scope of cooperation Fair and open opportunities for cooperation Extensive and convenient support services
	Peers	<ul style="list-style-type: none"> Interviews Meetings 	<ul style="list-style-type: none"> Stronger ability for complementary use of resources Cost savings and higher efficiency
	Customers	<ul style="list-style-type: none"> Interviews and hotlines 	<ul style="list-style-type: none"> Driving partners' accountability
Build secure and clean cyberspace	Customers and government	<ul style="list-style-type: none"> Service hotlines Weibo/WeChat Meetings and forums 	<ul style="list-style-type: none"> Smooth network connection anytime, anywhere Secure and healthy cyberspace Network information security and confidentiality
Foster growth ambience with team collaboration	Employees	<ul style="list-style-type: none"> Staff forums Staff representative assemblies Democratic informal meetings Online communication with the General Manager 	<ul style="list-style-type: none"> Protection of lawful rights and interests Training and career development opportunities Opportunities for participation in democratic management Support in adversity Safe and comfortable work environment
Procure harmonious development of green and low-carbon	Ecological environment	—	<ul style="list-style-type: none"> Green and eco-friendly operations Reduction of pollution through recycling
Promote charity undertakings to share benefits with the public	Community	<ul style="list-style-type: none"> Meetings Forums Villages support station 	<ul style="list-style-type: none"> Sustainable and effective donations Enhancing efforts in poverty aid and relief Charitable volunteering programmes

In 2018, China Unicom was engaged in extensive publicity initiatives and interaction, enhanced communication with the public and the media and vigorously developed a new ecosphere of corporate communication with internal as well as external interconnections, presenting China Unicom's open approach to communication.

- Persist in the transition to Internet-based publicity and develop a complete mechanism to cover the monitoring and reporting of public opinions and the provision of feedback and response.

- Hold 25 key publicity events in connection with, among others, the announcement of network speed upgrade and tariff reduction, launch of terminals compatible with six-mode all network access, ITU Telecom World, Winter Olympic Games and Winter Paralympic Games.

- Engaged in media publicity with the publication of 109 press releases and arrangement of 32 press coverage occasions.

- We have more than 150 million followers on national new media matrices such as Weibo and WeChat, and over 1 billion views per year on the Group new media platforms. We accredited with the most influential new media account among PRC enterprises and central enterprises 5 years in a row and the top enterprise for new media influence among PRC enterprises and central enterprises 4 years in a row. We were also accredited the PRC Enterprise Network Voice Award and New Media Broadcast Power Award for Listed Companies.

© Honors and recognitions

In 2018, China Unicom sturdily performed social responsibilities, disclosed responsibility performance promptly, and gained positive progress in social responsibility performance.

- China Unicom ranked 27th in "2018 PRC Top 300 CSR Development Index" published by Chinese Academy of Social Sciences, moving 10 places up compared to 2017.

- Included in "China ESG50 Index Constituents" for 2018 and received "Golden Bee 2018 Outstanding CSR Report – Leadership Enterprise Award" for our social responsibility report.

- China Unicom Henan's case of social responsibility practice, "Promoting Informatisation in Village Households and Contributing to Sustainable Agricultural Development", was awarded as "2018 Corporate Best Practice Case in Sustainable Development" by Global Compact.

APPENDICES

KEY PERFORMANCE

Type	Indicator	Unit	2016	2017	2018
Operations and development	Total assets	RMB billion	614.15	571.98	540.32
	Operating income	RMB billion	274.20	274.829	290.88
	Service revenue	RMB billion	238.033	249.015	263.7
	Profit before income tax	RMB billion	0.784	2.593	13.081
	Mobile billing subscribers	Million	263.822	284.163	315.036
	of which: 4G subscribers	Million	104.551	174.876	219.925
	Fixed-line local access subscribers	Million	66.649	59.997	55.899
	Fixed-line broadband subscribers	Million	75.236	76.539	80.880
	E-Commerce turnover	RMB billion	40.84	66.42	71.26
	Productivity	RMB Thousand/ Person • Year	883.5	923.9	1,007.9
Network capability	Number of 4G base stations	Thousand	740	852	987
	Number of fixed network broadband access ports	Million	189	202	215
	Broadband coverage rate in administrative villages in ten northern provinces	%	95	95	96
	Urban 20M or above broadband network coverage rate	%	89	93	97
	Rural 4M or above broadband network coverage rate	%	99	100	100
	Coverage rate of mobile network in township	%	100	100	100
	Coverage rate of mobile network in administrative villages	%	87	89	89
	International interconnection bandwidth	G	1,711	2,072	2,427
	4G network access rate	%	99.69	99.72	99.77
	4G network call drop rate	%	0.1	0.1	0.09
Commitment in Major Assurance Initiatives	Number of channels in rural and remote poverty-stricken area	Thousand	260	200	200
	Total times of emergency communication guarantee	Time	393	361	407
	Emergency communication vehicles called out	Thousand vehicle-times	124	137	133
	Emergency communication equipment inputted	Thousand set-times	115	109	94
Independent innovation	Personnel used	Thousand person- times	413	471	482
	Technological innovation input	RMB billion	4.82	5.81	11.5
	Number of personnel in technical activities	Person	4,508	4,195	7,703
	International standards documents	Article	614	649	545
	Industry standards	Item	226	228	285
	Number of patents applied	Item	621	648	1,121
Customer service	Number of patents granted	Item	232	346	441
	Monthly average complaint rate in the year	Person-time/million users	3.61	2.73	2.96
	Overall satisfaction rate	Point	77.5	77.99	80.42
	Including: Fixed line user satisfaction rate	Point	80.4	82.45	85.73
	Mobile phone user satisfaction rate	Point	78.8	79.13	81.94
	Fixed broadband user satisfaction rate	Point	72.5	74.62	76.17
People-oriented	Mobile Internet user satisfaction rate	Point	75.9	75.05	77.83
	Gender proportion of employees	Male:female	1.49:1	1.48:1	1.50:1
	Proportion of ethnic minority employees	%	6.81	6.89	6.77
	Proportion of female in senior management	%	11.7	10.6	11
	Input in employee training	RMB million	302.64	321.57	422.99
	Per capita training time	Hours	60	62	66
	Network college online learning person-time	Thousand person-times	4,585	15,333	11,250
	Network college total online learning hours	Thousand credit hours	3,750	13,096	7,040
	Number of safety production training	Time	32	37	40
	Coverage rate of safety production training	%	100	100	100
	Proportion of contracted employees in labor union	%	100	100	100
	Input to help and support employees suffered from difficulties	RMB million	9.67	9.37	30.22
Input in condolence fund	RMB million	35.71	28.38	28.53	
Employee turnover rate	%	1.77	1.94	2.16	

Type	Indicator	Unit	2016	2017	2018
Low-carbon development	Special investment in energy conservation and emission reduction	RMB million	200	100	100
	Energy consumption per unit of information flow	kg ce/TB	6.47	7.5	3.14
	Petrol consumption	Thousand tons	45.6	29.1	28.6
	Diesel consumption	Thousand tons	12.8	24.5	8.1
	Natural gas consumption	Thousand m ³	10,995.6	7,081	10,145.2
	Electricity consumption	Billion KWH	13,893	13,986	14.19
	Water consumption	Million tons	22,8925	22,2106	18,5731
	Water consumption/operating income	Tons/RMB million	83.49	80.82	63.85
	Coal consumption	Thousand tons	110.6	72.7	58
	Energy conservation	Thousand tce	156.5	169.2	163.2
	Greenhouse gas emission	Thousand tons	5,098.9	5,188	5,296
	Greenhouse gas emission/operating income	Tons/RMB million	18.60	18.88	18.21
	Sulphur dioxide emission	Thousand tons	6.6	8.9	2.4
	Chemical oxygen demand (COD)	Thousand tons	18.3	25.4	21.1
	Recycling upon scrappage and disposal	RMB million	2,711	1,242	621
Compliance management	Number of compliance training	Time	1,591	1,576	1,920
	Number of participant attending the compliance training	Person	254,628	253,530	248,193
	Number of registered volunteers	Person	17,042	23,998	43,873
Community responsibility	Participants in volunteer activities	Person-time	25,386	39,966	50,412
	Credit rating ⁽¹⁾	Grade	AAA	AAA	AAA
	Total tax paid	RMB billion	11.261	8.156	7.889
	Employment creation	Person	29,817	10,458	10,869
	Total donation	RMB million	9.347	12.651	11.04

- Note:
- This is rated by China Chengxin International Credit Rating Co., Ltd. to our wholly-owned subsidiary, China United Network Communications Corporation Limited.
 - Data in the report: The data and information disclosed in this report mainly sourced from relevant data collection systems and relevant statistical statements inside our company and cases about corporate social responsibility practice submitted by provincial subsidiaries. There is no material change in relation to the methods used for prepping the disclosure. The 2018 data quoted in this report are final statistical data. In case of any discrepancy between the financial data herein and those in annual report, the annual report shall prevail. The monetary unit adopted in this report is RMB.
 - Reference: Guiding Opinions on Better Fulfilling Social Responsibilities of State-owned Enterprises, The State-owned Assets Supervision and Administration Commission of the State Council (SASAC); Guidelines for preparation of Report on Performance of Corporate Social Responsibility, Shanghai Stock Exchange; Environmental, Social and Governance Reporting Guide, HKEX; Guidelines for Preparation of Social Responsibility Report, AQSIO and SAC; Guidelines for Preparation of China Enterprise Social Responsibility Report (CASS-CSR 4.0), Chinese Academy of Social Sciences; Sustainability Reporting Guidelines (G4 Edition), Global Reporting Initiative (GRI); Social Responsibility Management System of China Information and Communication Industry Enterprises, China Association of Communications Enterprises.
 - 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.

COMPANY HONOURS

- China Unicom was voted "Asia's No.1 Most Honored Telecom Company" by fund managers and analysts for three years in a row in "2018 All-Asia Executive Team" ranking organised by Institutional Investor. The Company was also honored with the awards of "Asia's Best CEO (Telecoms) – 1st", "Asia's Best CFO (Telecoms) – 1st", "Asia's Best Investor Relations (Telecoms) – 1st" and "Asia's Best Corporate Governance (Telecoms) – 1st".

- The Company was voted "Asia's No.1 Best Managed Telecommunications Company" by professional investors in "Asia's Best Managed Companies Poll 2018" by FinanceAsia. Meanwhile, the Company was also honored with "Best CEO in China – 1st", "Best CFO in China – 1st", "Best Managed Company in China – 1st", "Best Investors Relations in China – 1st", "Best CSR in China – 1st" and "Best Corporate Governance in China – 1st".

- The Company was accredited with "Platinum Award for Excellence in Environmental, Social and Corporate Governance" and "Highly Commended Investor Relations Team" in "The Asset Corporate Awards 2018". Meanwhile, Mr. Wang Xiaochu, Chairman and CEO of the Company was accredited again with "Best Chief Executive Officer".

- China Unicom was voted "Best Company in the Communications Industry", "Best Company in Hong Kong" and "Best Overall Investor Relations (Large-Cap)" by investors, analysts and investing professionals at "IR Magazine Awards – Greater China 2018".

- China Unicom was awarded "The Best of Asia – Icon on Corporate Governance" in the Asian Excellence Award 2018 hosted by Corporate Governance Asia. Mr. Wang Xiaochu, Chairman and CEO of the Company was named for the "Best Asian Corporate Director Award" in the "Asian Corporate Director Recognition Award 2018".

- The printed version and online version (ar2017.chinaunicom.com.hk) of China Unicom's annual report "Unicom in a New Era" won various top accolades at international competition: 5 gold awards at International ARC Award 2018; 7 gold awards in "Vision Awards" and "Inspire Awards" by the League of American Communications Professionals LLC (LACP) in 2018, 2 grand awards and 3 gold

awards in the internationally renowned Galaxy Award 2018 and 1 gold award at "International W3 Award".

- The Company's website (www.chinaunicom.com.hk) won a gold award in "iNova Awards" for three years in a row.

- China Unicom ranked 273rd in terms of revenue among "Fortune Global 500" for 2018.

- China Unicom ranked 27th among "2018 PRC Top 300 CSR Development Index" published by Chinese Academy of Social Sciences, moving 10 places up compared to 2017.

- China Unicom was included in "China ESG 50 Index Constituents" for 2018 and received the "Golden Bee 2018 Outstanding CSR Report – Leadership Enterprise Award" for its CSR report.

- China Unicom ranked the sixth among 500 outstanding IoT enterprises on "2018 World IoT Ranking List" announced by 2018 World IoT Convention, becoming one of the three PRC enterprises among the top ten companies on the list.

- "2018 Outstanding Cases in Targeted Poverty Alleviation by PRC Listed Companies" named by JRJ.com.

- China Unicom Pay Limited Company garnered "2018 Outstanding Enterprises in Mobile Payment in China Award", "Star Platform for Mobile Payment in China" and "2018 Technology League – Annual Carrier's Innovative Product Award" and "Top 20 of PRC FinTech Unicorns".

- China Unicom Cloud Data Co. Limited received "2018 PRC IDC Industry Digitalised Transformation Cornerstone Award", "Trustworthy Cloud Technological Innovation Award" and "Product and Solution Excellence Award for Cloud Computing and Big Data Service".

- The "Smart River Management Platform" designed by China Unicom Systems Integration Limited Co. received 2018 Pan Gu Award for Innovative Achievements (Innovative Products) in the PRC Electronic Information Industry.

INSTITUTIONS AND ORGANISATIONS

Major organisations newly joined by China Unicom in 2018

No.	Name of Organisation	Post
1	Trustworthy Blockchain Alliance	General member
2	China Information Industry Chamber of Commerce – Big Data Industry Chapter	Deputy council chairman
3	"Internet+ Energy Conservation" Industry Alliance	Deputy council chairman
4	China Cybersecurity Industry Alliance	Member
5	Big Data Technology and Application Alliance	Deputy council chairman
6	Big Data Industrial Ecology Alliance	Member
7	China Tourism Association – Tourism Marketing Chapter	Founding member
8	Tourism Big Data Industrial and Academic Research Alliance	Member
9	National Smart City Standardisation General Group	Committee member
10	China Tourism Big Data Institute	Founding unit

DESCRIPTION TO THE REPORT

Reporting period

From January 1, 2018 to December 31, 2018, with 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, "China Unicom", "the Group", "the Company" and "We" are used respectively in this report.

References

Guiding Opinions on Better Fulfilling Social Responsibilities of State-owned Enterprises, The State-owned Assets Supervision and Administration Commission of the State Council (SASAC);
 Guidelines for preparation of Report on Performance of Corporate Social Responsibility, Shanghai Stock Exchange;
 Environmental, Social and Governance Reporting Guide, HKEX;
 Guidelines for Preparation of Social Responsibility Report, ACSIQ and SAC;
 Guidelines for Preparation of China Enterprise Social Responsibility Report (CASS-CSR 4.0), Chinese Academy of Social Sciences;
 Sustainability Reporting Guidelines (G4 Edition), Global Reporting Initiative (GRI);
 Social Responsibility Management System of China Information and Communication Industry Enterprises, China Association of Communications Enterprises.

Clarification about the data

The 2018 data quoted in this report are final statistical data. In case of any discrepancy between the financial data herein and those in annual report, the annual report shall prevail.

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: <https://www.chinaunicom.com.hk>

Contact information

Address: China Unicom Corporate Development Department/Legal Department, No. 21 Jinrong Street, Xicheng District, Beijing
 Zip Code: 100033
 Fax: 86-10-66258674
 Email: yangwei3@chinaunicom.cn

INDEXES

GRI G4

No.	Page Disclosed	No.	Page Disclosed	No.	Page Disclosed	No.	Page Disclosed
Strategy and analysis		G4-8	P6, 73	G4-16	P4-8, 75	G4-23	—
G4-1	P4-5	G4-9	P6	Identified material aspects and boundaries		Stakeholder engagement	
Organisational profile		G4-10	P15, 25, 73	G4-17	—	G4-24	P71-72
G4-3	P6	G4-11	—	G4-18	P75	G4-25	P71-72
G4-4	P6, P34-38	G4-12	P42	G4-19	P68-70, 75	G4-26	P71-72
G4-5	P75	G4-13	P6, 18-20, 63	G4-20	P75	G4-27	P71-72
G4-6	P6, 13, 14	G4-14	P37, 63	G4-21	P75	Report profile	
G4-7	P20	G4-15	P45, 49	G4-22	—	G4-28	P75

No.	Page Disclosed	No.	Page Disclosed	No.	Page Disclosed	No.	Page Disclosed
G4-29	P75	Bio-diversity		Labor/Management Relations		G4-HR10	—
G4-30	P75	G4-EN11	—	G4-LA4	P27	G4-HR11	—
G4-31	P75	G4-EN12	P45	Occupational health and safety		Human right grievance mechanisms	
G4-32	P75	G4-EN13	—	G4-LA5	—	G4-HR12	P26
G4-33	P75	G4-EN14	—	G4-LA6	—	Society	
Governance		Emission		G4-LA7	P26, 29	Local communities	
G4-34	P18-20	G4-EN15	P74	G4-LA8	P26, 29	G4-SO1	P14-15
Ethics and integrity		G4-EN16	P74	Training and education		G4-SO2	—
G4-56	P18-21	G4-EN17	—	G4-LA9	P26-27, 73	Anti-corruption	
Disclosures on management approach		G4-EN18	—	G4-LA10	P26-27	G4-SO3	P21
G4-DMA	—	G4-EN19	—	G4-LA11	P25	G4-SO4	P21
Economics		G4-EN20	—	Diversity and equal opportunity		G4-SO5	P21
Economic performance		G4-EN21	P74	G4-LA12	P25	Public policy	
G4-EC1	P8, 73	Effluents and waste		Equal remuneration for women and men		G4-SO6	—
G4-EC2	—	G4-EN22	—	G4-LA13	P26	Anti-competition behavior	
G4-EC3	—	G4-EN23	—	Supplier assessment for labor practices		G4-SO7	P20
G4-EC4	—	G4-EN24	—	G4-LA14	—	Compliance	
Market presence		G4-EN25	—	G4-LA15	—	G4-SO8	P20
G4-EC5	—	G4-EN26	—	Labor grievance mechanisms		Supplier assessment for impacts on society	
G4-EC6	—	Product and services		G4-LA16	P26	G4-SO9	—
Indirect economic impact		G4-EN27	P43-44	Human right		G4-SO10	P43, P63
G4-EC7	P8-9, P32-33	G4-EN28	P44, P74	Investment		Grievance mechanism for impacts on society	
G4-EC8	P8-10, 43	Compliance		G4-HR1	—	G4-SO11	—
Procurement practices		G4-EN29	—	G4-HR2	P73	Product responsibility	
G4-EC9	P15, 62	Transportation		Non-discrimination		Customer health and safety	
Environmental		G4-EN30	—	G4-HR3	P26	G4-PR1	P63, 64
Material		Overall		Freedom of association and collective bargaining		G4-PR2	—
G4-EN1	—	G4-EN31	P42	G4-HR4	—	Product and service labeling	
G4-EN2	P45	Supplier environmental assessment		Child labor		G4-PR3	P34-35
Energy		G4-EN32	P63	G4-HR5	P14, 26	G4-PR4	—
G4-EN3	P74	G4-EN33	P63	Forced and compulsory labor		G4-PR5	P33, 35, 37
G4-EN4	—	Environmental grievance mechanism		G4-HR6	P14, 26	Marketing communications	
G4-EN5	P74	G4-EN34	—	Security practices		G4-PR6	—
G4-EN6	P42-45	Social		G4-HR7	—	G4-PR7	—
G4-EN7	P42-45	Labor practices and decent work		Indigenous rights		Customer privacy	
Water		Employment		G4-HR8	P14	G4-PR8	—
G4-EN8	P74	G4-LA1	P25, 73	Assessment		Compliance	
G4-EN9	—	G4-LA2	P26	G4-HR9	—	G4-PR9	—
G4-EN10	—	G4-LA3	P26	Supplier human right assessment			

Chinese Academy of Social Sciences CASS4.0

Name of Index	Page Disclosed	Name of Index	Page Disclosed	Name of Index	Page Disclosed	Name of Index	Page Disclosed
I. Preface (P series)		P4.1	P15	G2.3	P70	G5.2	P70-71
(P1) Specification of the report		P4.2	P19	G2.4	P71-72	(G6) Participation	
P1.1	P68-72	P4.3	P6, P34-36	(G3) Organisation		G6.1	P72
P1.2	P68, P75	P4.4	P6, P73	G3.1	P4-5, P69	G6.2	P71-72
P1.3	P75	P4.5	P7, P18-19	G3.2	P69-70	G6.3	P42, P71
(P2) Message from senior management		II. Responsibility management (G series)		G3.3	P69	III. Market performance (M series)	
P2.1	P4-5	(G1) Vision		(G4) System		(M1) Responsibility to shareholders	
P2.2	P4-5	G1.1	P15, P68	G4.1	P70	M1.1	P18
(P3) Focus of responsibility		G1.2	P41, P68	G4.2	P68-70	M1.2	P5, P18-19
P3.1	P68-69, P72	(G2) Strategy		G4.3	P71	M1.3	P21
P3.2	P6-14, P69-70	G2.1	P68-70	(G5) Culture		M1.4	P18, P75
(P4) Corporate profile		G2.2	P68	G5.1	P71	M1.5	P18

Name of Index	Page Disclosed	Name of Index	Page Disclosed	Name of Index	Page Disclosed	Name of Index	Page Disclosed
M1.6	P8, P73	M3.15	P63	S3.6	—	E2.6	P74
M1.7	P8, P73	M3.16	P63	S3.7	—	E2.7	P74
M1.8	P8	IV. Social performance (S series)		(S4) Responsibility to community		E2.8	P42
(M2) Responsibility to customers		(S1) Responsibility to government		S4.1	P40, P41	E2.9	P74
M2.1	P6, P8, P32	S1.1	P20	S4.2	P14-15	E2.10	P74
M2.2	P36, P42	S1.2	P74	S4.3	P15	E2.11	P42-43
M2.3	—	S1.3	P74	S4.4	P15	E2.12	P74
M2.4	P54	S1.4	P7-8	S4.5	P15	E2.13	P42
M2.5	P73	S1.5	P25-26, P74	S4.6	P46-51	E2.14	P42
M2.6	P59, P73	S1.6	P25, P74	S4.7	P51	E2.15	P44-45
M2.7	P59	(S2) Responsibility to employees		S4.8	P47, P74	E2.16	P44-45
M2.8	P20	S2.1	P25, P73	S4.9	P50	E2.17	P44-45
M2.9	P38, P44	S2.2	P26	S4.10	P50-51	E2.18	P44-45
M2.10	P20	S2.3	P26	S4.11	P74	E2.19	P44-45
M2.11	P20	S2.4	P27-28	S4.12	P8-11	E2.20	—
M2.12	P45	S2.5	P73	S4.13	P9, P11	E2.21	P45
M2.13	P40	S2.6	P26	S4.14	P8, P10	E2.22	P45
M2.14	P36-38	S2.7	P26	V. Environmental performance (E series)		E2.23	P42-45
M2.15	P37-38	S2.8	P26, P73	(E1) Green management		E2.24	P42-45
M2.16	P73	S2.9	P26	E1.1	P41	E2.25	P74
M2.17	—	S2.10	P25	E1.2	P43-44, P46	(E3) Green operation	
M2.18	P38, P73	S2.11	P26, P28	E1.3	P42-46	E3.1	P44
(M3) Responsibility to business partners		S2.12	P26, P28-29	E1.4	P42, P74	E3.2	P42, P44
M3.1	P62-63	S2.13	P29	E1.5	P42, P44	E3.3	P45
M3.2	P20	S2.14	P26-27	E1.6	P42	E3.4	P45
M3.3	P62-63	S2.15	P26-27, P73	E1.7	P45-46	E3.5	P45
M3.4	P62-65	S2.16	P25	E1.8	P42	E3.6	P45
M3.5	P20, P63	S2.17	P28-29	E1.9	P42-45	VI. Report appendix (A series)	
M3.6	P20, P62-65	S2.18	P29	E1.10	P74	(A1)	P68
M3.7	P20, P62	S2.19	P26	E1.11	P74	(A2)	P73-74
M3.8	P62-65	S2.20	P73	E1.12	P45	(A3)	P74
M3.9	P63	(S3) Safe production		(E2) Green production		(A4)	P72
M3.10	P62-65	S3.1	P26	E2.1	P45	(A5)	P75-77
M3.11	P42, P62-65	S3.2	P26	E2.2	P42, P62	(A6)	P78
M3.12	P63	S3.3	P26	E2.3	P42-43		
M3.13	P63	S3.4	P26, P73	E2.4	P41, P74		
M3.14	P62-65	S3.5	P26	E2.5	P74		

SEHK ESG Reporting Guide

Name of Index	Page Disclosed	Name of Index	Page Disclosed	Name of Index	Page Disclosed	Name of Index	Page Disclosed
A1	P41, 74	A2.4	P41-42, 74	B3	P26-27, 73	B6.2	P37-38
A1.1	P41, 74	A2.5	Note 1	B3.1	P26-27, 73	B6.3	P20, 59, 63, 73
A1.2	P41, 74	A3	P42-46	B3.2	P26-27, 73	B6.4	P32-33
A1.3	Note 2	A3.1	P42-46	B4	P14, 26	B6.5	P39-40
A1.4	Note 2	B1	P25-26, 73	B4.1	P14, 26	B7	P21
A1.5	P41, 74	B1.1	P25, 73	B4.2	P14, 26	B7.1	P21
A1.6	P44	B1.2	P25, 73	B5	P42, 62-64	B7.2	P21
A2	P41-46, 74	B2	P26, 29, 73	B5.1	63	B8	P46-51, 74
A2.1	P42-43, 74	B2.1	—	B5.2	P42, 62-64	B8.1	P46-51, 74
A2.2	P42-43, 74	B2.2	—	B6	P20, 32-40, 59-63, 73	B8.2	P46-51, 74
A2.3	P42-43, 74	B2.3	P26, 29, 73	B6.1	N/A		

Note 1: As the Company mainly engages in the provision of telecommunication services, packaging material used for the finished products is not applicable to the Company's business practice.

Note 2: As China Unicom is a massive entity and its business covers a wide geographical region, currently the Company is not able yet to produce full statistics regarding its waste production. The Company will establish related data collection system as soon as possible.

FEEDBACK

Dear Reader,

Thank you for reading 2018 Corporate Social Responsibility Report of China Unicom (Hong Kong) Limited, which is the third standalone corporate social responsibility report of China Unicom (Hong Kong) Limited. In order to provide valuable information to you and other stakeholders, in addition to facilitating the supervision of social responsibility works and enhancing the capability and standards of performing social responsibility, we would like to have your precious opinions and suggestions regarding this report.

Email: yangwei3@chinaunicom.cn

Fax: 86-10-66258674

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

● Your capacity:

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

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

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

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

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

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

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

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

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

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

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

● Any other opinion/suggestion?

Thank you for your feedback and precious time.



CHINA UNICOM (HONG KONG) LIMITED

75th Floor, The Center, 99 Queen's Road Central, Hong Kong

www.chinaunicom.com.hk