

Digitally Built a Mutually Beneficial and Win-win Ecosystem to Expand Cooperation

Cooperating with peers for win-win development

Pushing forward in-depth industry cooperation

Building a digital innovation ecosystem



DIGITALLY BUILT A MUTUALLY BENEFICIAL AND WIN-WIN ECOSYSTEM TO EXPAND COOPERATION

Seeking mutual benefit and win-win results through partnership and cooperation seems natural to the pattern of economic laws and social development. Under the new circumstance where global digital transformation accelerated, China Unicom continuously enhanced the cooperation with industry peers, strategic investors, Internet companies and value chain partners, pushed forward the industry collaborative development and network “co-build co-share”, driving the optimization and upgrade of the value chain and supply chain, as well as the new innovative ecosystem under the booming digital age, all together promoted the living quality of the people and elevated the development and quality of a Smart society.

Measure adopted in 2020

- More efforts invested in constructing an industry ecology. By deepening the network “co-build, co-share & co-maintain”, an accumulated 380,000 5G co-share base station were in use, saving more than RMB76 billion in capital expenditure.
- China Unicom brought along collaborative development of upstream and downstream partners in the value chain including equipment suppliers, terminal suppliers, channel partners, and virtual operators.
- Innovative cooperation was reinforced in digital consumption, industrial digitization and capital with strategic investors and leading enterprises in the industry.

Actions to be taken in 2021

- To steadily push forward the 5G network “co-build co share” and to explore sharing one single 4G network in rural and indoor area respectively.
- To drive upstream and downstream partners in the value chain to fulfill social responsibilities.
- To thoroughly explore 5G business cooperation models, expanding the new ecosystem of platform aggregation, and building a digital consumption ecosystem.
- To further deepen capital operation and accelerate to improve the shortcomings of core capabilities in the innovation field.

Cooperating with peers for win-win development

China Unicom upheld the philosophy of win-win cooperation for development, continuously expanded the depth and breadth of cooperation with operator peers, and took important steps to advance the construction of industry ecosystem and the network “co-build co-share”, thus vigorously boosted the sustainable and healthy development of the industry, cyber superpower and development of digital China.

Investing more efforts in constructing an industry ecosystem

China Unicom unremittingly pushed forward the construction of the industry ecosystem, firmly managed the vicious competition costing customer interests and industry value, driving a sound benign competition environment in the industry, and consistently released development bonus, all to fuel the healthy and sustainable development of the telecommunications industry.

Deepening network “co-build and co-share”

China Unicom deeply implemented the new development philosophy with the principle “win-win cooperation and collaborative development” to pinpoint enhancing on network supply capabilities and quality efficiency, and actively pushed forward the synergizing edges and in-depth cooperation in the fields of resources and innovation among industry peers, forming a collaborative synergy in development, and the commitment to becoming the premium operator with quality customer perception.

Comprehensively pushing forward 5G network “co-build co share”

China Unicom vigorously conducted the cooperation with China Telecom to co-build and co-share one single 5G access network in the full lifecycle of 5G development across the entire network.

- China Unicom enhanced cooperation management. The two parties simultaneously formed a 5G “co-build co-share” working group in the three levels of the headquarters, provinces and cities, prepared the “2020 Guiding Opinions on Fundamental Network Co-build, Co-share and Co-maintenance”, formulated unified technical specifications for “co-build co-share” network, as well as 4/5G network quality assessment standards, and perfected organizational and policy support.
- China Unicom built the world’s first large-scale 5G “co-build co-share” network in the shortest time and with the least investment, achieving network scale, coverage, bandwidth and speed doubled and providing the mass users with better quality mobile network services.
- China Unicom further pushed forward the 5G network “co-build co-share, co-maintenance and co-optimize”, along with the goal of “unification in user perception, business experience, network quality, and service support”, enhancing network quality through collaboration and realizing leading network quality and user perception.
- Being the world’s first scale commercialization of SA network, China Unicom vigorously pushed forward the development of the 5G value chain and 5G consumption upgrade.
- China Unicom’s work in 5G “co-build co-share” was fully recognized numerous times by the Central government leadership and received high praise from the ministries and commissions such as the State-owned Assets Supervision and Administration Commission and Ministry of Industry and Information Technology. Such work was also included by the People’s Daily in a series of reports *Intensifying New Infrastructure and Cultivating New Drives* on March 27.

Scale doubled:

380,000

on cumulative basis 5G base stations co-shared

Coverage doubled:

348

cities covered nationwide

Speed doubled:

Achieved the global highest speed

2.7 Gbps

in the 5G medium frequency band

Economic efficiency:

About

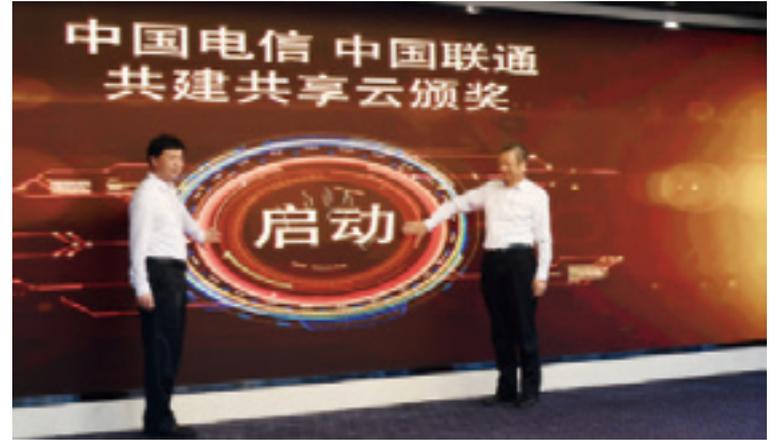
RMB76

billion, saving in investment

Operation cost saving

RMB9

billion/year



On September 9, 2020, China Unicom and China Telecom held a conference in Beijing to review the first year of work in the 5G network “co-build co share” and comprehensively deepened the “co-build co share” cooperation. Both Chairmen activated the “co-build co share” cloud ceremony.

4G “Co-build Co-share” reaching a new level

- China Unicom deeply advanced the 4G “co-build co-share” with China Telecom, focusing on scenarios such as complementary coverage, new scenarios, and station site integration, together exploring sharing one single network in rural and indoor area, which effectively expanded network coverage and improved network quality.

- 390,000 4G co-share communities were newly added throughout the year, with a total of RMB9 billion of investment saved and RMB1 billion of operation cost saved per year for both parties.

Full “Co-build Co-share” achieving substantial progress

- China Unicom expanded in-depth fundamental resources “co-build co-share co-maintenance”, fully co-building on incremental resources, co-sharing on existing resources, while continuing to expand cooperation area and enhancing cooperation efficiency, which would improve the operating effectiveness and efficiency of the fundamental resources and lowering network expenses.

- The scope of cooperation with peer operators had expanded to areas including co-building optical cables, co-sharing fiber cores and cloud infrastructure.

Responsibility performance indicator	2018	2019	2020
4G co-building rate for indoor distribution systems (%)	79	79	65
Pole line co-building rate (%)	91	91	95
Pole line co-sharing rate (%)	95	97	92
Pipeline co-building rate (%)	94	92	94
Pipeline co-sharing rate (%)	96	93	97

China Unicom Shandong Qingdao focused on the pain points and difficulties of network maintenance and optimization, and carried out in-depth cooperation with China Telecom Qingdao to propose an innovative solution for the dynamic complementation of 4G equipment obstacles of the Qingdao Cross-sea Bridge. After the solution was deployed, both parties' network coverage ratio of the cross-sea bridge grew from an average of 72.69% to 98.15%. It was estimated that about RMB30,000 of expenses would be saved annually. By sharing resources, both parties optimized the coverage quality of the mobile network of maritime transportation facilities and surrounding areas, thus remarkably improving the livelihood of the local people.



The fault points and the road sections covered by China Unicom and China Telecom are well complementary



Left: On April 22, the number of 5G "co-build co-share" base stations by China Unicom Zhejiang Ningbo and China Telecom Ningbo exceeded 1,500



Right: China Unicom Shanghai and China Telecom Shanghai conducted a joint exercise for communication assurance at the International Import Expo



China Unicom Jiangsu comprehensively pushed forward "co-build co-share"



China Unicom Henan delivered sound "co-build co-share" results

Pushing forward in-depth industry cooperation

In a new era characterized by intelligent connection of all things, while facing the value chain, China Unicom embraced an open attitude, worked with all parties to co-build innovative alliances, co-develop business models, co-share high-quality resources, and together expanding new potential for 5G integrated development, as well as broadened cooperation in various fields such as technologies, businesses, resources and capital, creating a benign industrial ecosystem.

Deepening cooperation with equipment suppliers

China Unicom enhanced the regulation and management of equipment suppliers, embedded policies in the supply chain platform, and implemented whole-procedure digital operation of the supply chain.

Enhancing regulated management

- China Unicom observed the laws to call for tenders, and make selection by means of open tendering in strict accordance with the requirements of national laws and regulations. For projects that are not necessarily subject to tendering, it adopted innovative transaction tools like open competition and open direct procurement in line with the philosophy of the SASAC for open procurement to select qualified suppliers on the supply chain platform. The amount of centralized procurement stood at approximately RMB81.63 billion.

- By lowering the access threshold for suppliers, China Unicom widely adopted the product and technology qualification system, thus allowing small suppliers to fairly take part in procurement activities.

- China Unicom conducted credit reviews for enterprises in the tendering and procurement activities, and prohibited rule-violating and untrustworthy enterprises from taking part in the tendering and bidding activities.

Creating a digital supply chain

- China Unicom continuously upgraded the functions of the electronic tendering and bidding platform, offered the audio and video conference function, realized the “non-face-to-face” bid evaluation during the fight against the pandemic, and improved user perception.
- China Unicom continuously strengthened the capabilities of the e-commerce platform, providing diversified and convenient procurement supporting services for sub-divided units in the market front-line, product manager work stations and several procurement tools, and increased procurement efficiency comprehensively.
- China Unicom made a comprehensive plan to create a supplier management database, realized online closed-loop, whole-procedure and full-lifecycle management of suppliers, and provided support in fundamental information for supplier review.
- Based on the online operations during all processes of the supply chain such as sourcing, procurement, logistics, warehousing and disposal, China Unicom established a risk prevention and control management organization system with “centralized IT”, developed a digital risk prevention and control model driven by Big Data through such procedures as risk identification, risk assessment, risk response and risk control, implemented digital and intelligent real-time early warning and control of risks throughout the procurement process, and identified and eliminated potential risks.

Total number of e-commerce platform vendors
57,000

16,000
new vendors in the year

Vendors exited and downgraded
7,659

KPI	2018	2019	2020
Centralized procurement ratio (%)	88.6	90.6	91.4
Proportion of local vendors (%)	>99	>99	>99
Number of times of vendors information verification	8135	19072	25653
Proportion of electronic procurement (%)	58	68	88

Broadening cooperation with terminal suppliers

China Unicom established a trading platform of Woego and a service portal with terminal partners, enhanced the guidance and management of terminal suppliers, and improved the work efficiency and use perception of partners.

Building a cooperation and sharing platform

- As a nationwide comprehensive B2B trading platform, the Woego platform provides upstream and downstream partners in the industrial chain with services such as intelligent transactions, service empowerment, financial loans, channel marketing and other service solutions, also specialized solutions for intelligent ecology cooperation such as centralized operation, special area sales, exclusive consultants and special marketing. In 2020, the platform served over 30,000 small- and medium-sized channel trading customers.
- China Unicom built a service portal for terminal partners. With service experience as core philosophy, it realized online visualization and transparent management during the whole process from cooperation to terminal roll-out, constantly improving working efficiency and user perception of the partners.
- China Unicom proactively developed market-oriented multi-supplier cooperation. In 2020, the headquarters brought in 102 mobile terminal models and 314 pan-intelligence models and introduced over 240 provincial suppliers.

Driving terminal suppliers to fulfill their responsibilities

China Unicom organized a series of activities, namely “Resonance Operation 2020” and China Unicom “5G Anniversary Takeoff”, to empower over one hundred partners and one thousand of industries to fight the pandemic and resume production.

- China Unicom established an intelligent healthcare and elderly care supply chain system, created a communication platform for intelligent elderly care suppliers, and improved the suppliers’ capabilities to fulfill social responsibilities for healthcare and elderly care, thus the elderly could fully access the digital healthcare services.
- China Unicom required partners to conscientiously perform China’s 3C (China Compulsory Certification) and SRRC (State Radio Regulatory Commission) certifications for terminal products, and adopted environmentally friendly materials in transportation terminal products. Also, it promoted old-for-new services and made possible scientific recycling of old phones, and lowered environmental protection pressure.
- China Unicom reinforced efforts in governing the malicious software of phones, with all terminal suppliers promising not to install malicious software on terminal products. The Company timely and dynamically learned the prevention mechanisms adopted by terminal suppliers, and firmly safeguarded the legitimate rights and interests of the consumers.
- China Unicom actively communicated with terminal suppliers with negative news, and established a special group to rapidly implement such tasks as customer complaints, information verification, and customer appeasing, reducing negative social impacts, and maintained the corporate image and reputation.

China Unicom actively constructed an ecosystem for terminal cooperation, established a joint laboratory of 5G terminal innovation, a joint R&D center of 5G terminal innovation, and an innovation center of 5G terminal application cooperation together with 32 partners from fields including chips, module terminals, application content and chain channels, forming a sound landscape where the upstream and downstream of the value chain joined hands to make progress and achieved win-win cooperation.

On February 24, 2020, China Unicom united over 1,000 companies in the ecological chain to launch the “Resonance Action 2020”, a series of online activities for new ecological cooperation of the 5G terminal industry chain that lasted 37 days.

How to realize “similar frequency”?

By cross-border cooperation, China Unicom drove the new ecology of the value chain to realize cross-border and integrated evolution from a single chain of the communications industry and intelligent terminal industry to multiple chains. The Company shared the platform in which industry chain partners participated and resumed normal production and operation as soon as possible.

How to realize “vibration”?

China Unicom shored up the industry via the following five functions including cooperative alliance, empowerment roll-out, forum and salon, cooperative recruitment, and 5G+VR meeting participation, and revitalized the market by creating with partners the cultural and creative day, e-sports day, brand day, promotion day, and new product day.

On March 11, China Unicom worked with 21 partners such as chip suppliers, engine suppliers, XR terminal suppliers and XR application content suppliers to jointly build a 5G XR terminal ecological alliance and rolled out its project. China Unicom launched three empowerment platforms, namely, the XR terminal commercialization platform, incubation platform, and technology platform, as well as eight implementation plans in the 5GXR series scheme to jointly move forward the in-depth development of the 5G terminal industry into the professional fields.



Vigorously broadening the cooperation with channels

China Unicom reinforced efforts in digital innovation, empowered the transformational development of cooperation channels, realized a win-win situation for operators, cooperative channels and users through financial cooperation, privileges cooperation, and resource sharing, as well as the ecological and platform-based cooperation and operation, which achieved a new cooperative channel operation system featuring win-win among operators, cooperation channels, and users that were built for sustainability, high quality and ecology.

Reinforcing fair cooperation

- **China Unicom helped channel partners to fight against the pandemic and resume production.** China Unicom actively responded to the nation’s call to rapidly implement the working requirements for providing guarantee for both corporate pandemic prevention and control, as well as production and operation, and developed a mutual help plan “Six Sections and 18 Articles of Work and Production Resumption of Cooperative Channels”. The plan surmounted the difficulties, helped cooperative channels to fight against the pandemic, resumed production and rapidly restored production and operation.

- **China Unicom drove channel partners for transformative development.** China Unicom developed iterative and innovative digital capabilities, empowered channel partners via financial installment, agile supply chain and online marketing, improved the capability to operate cooperative channels, and brought along the transformative development of the channel partners. In 2020, the number of financial installment orders from channel partners grew by over 50% from the previous year, and the cloud shelf was made available to 28,000 channel partners in 30 provinces.

- **China Unicom improved the digitalization of IT systems.** China Unicom continuously promoted light platform tools, introduced partners in a fast manner, rapidly accepted business, quickly recorded the income, and drove partners to improve efficiency and increase benefits.

Driving channel partners to fulfill their responsibilities

- China Unicom comprehensively applied the portrait comparison technology and ID verification equipment to implement the “real-name registration system” and helped channel partners to conduct production and operation activities in line with laws and regulations.

- China Unicom strengthened training and publicizing all policies to ensure that channel partners well comprehended the related policies, relying on IT Big data capabilities to analyze and screen abnormal data, thus reducing the risk of rule-violating operation.

Number of channel partners

About **200,000**

Online channel partners of cloud stores

Over **4,000**

Reinforcing cooperation with virtual operators

China Unicom upheld the philosophies of “take initiative, cooperation, openness, and win-win results” and mainly adopted four measures, namely, “health promotion, fight against the pandemic, stronger innovation, and ecosystem building”, pushing forward the high-quality transformational development of the resale business.

Health promotion. China Unicom set up a full-cycle management and control mechanism to govern the problem of junk information of virtual network operator, lowered the crank call complaint ratio of virtual network operator by 76%, guided the healthy and compliant development of the virtual network operator, and created an industry atmosphere of integrity.

Fight against the pandemic. During the period when the pandemic stroke the hardest, China Unicom took nine major measures, including postponing payment time, guaranteeing resource supply and providing stronger operation support, to help cooperative enterprises weather through the hard time and assist them successfully to resume work and production.

Stronger innovation. China Unicom expanded the scale of value-added services such as Communications Assistant, Coloring Ring Back Tone, and Privileges, opened up the capabilities of 5G high-speed network, VoLTE high-definition voice and message billing, took the lead in launching the resale of the Internet of Things, and improve the innovative capabilities of virtual business services.

Ecosystem building. China Unicom carried out extensive two-way empowerment, realized all-rounded ecological cooperation through the cooperation platform for the virtual network operator, brought in high-quality products and capabilities of cooperative enterprises, enhanced the collaboration among internal subsidiaries, and made a joint effort to satisfy the needs of consumers for a good and intelligent life. In 2020, China Unicom cooperated with 28 enterprises in the resales business, and expanded the pilot scope to about 300 cities, covering the majority of provincial capitals and economically developed regions and the number of resales business users reached 61.73 million.

Number of resales users

61.73 million

Building a digital innovation ecosystem

The digital economy is closely tied with the digital ecosystem. Facing the development trend of consumer digitalization and industrial digitalization, China Unicom continuously deepened cooperation with strategic investors and leading enterprises in the industry in fields such as public innovation, government and enterprise innovation, and capital, to jointly provide customers with high-quality products and services and fueling economic and social transformation and upgrading.

Deepening cooperation in digital consumption

China Unicom actively broadened cooperation in the fields of digital product innovation to jointly provide customers with high-quality products and services.

- China Unicom formed a joint project group with Baidu, focusing on deepened and broadened cooperation such as Smart home, intelligent customer services, brand building and live-streaming interaction, constructing a system for tens of millions of ecological products, and providing customers with diversified products and services with optimal experience.

- China Unicom and Alibaba both gathered high-quality resources and conducted platform-connected and ecological cooperation of “scenarios, goods and people”, jointly expanded and strengthened product operation, channel operation and customer operation, and realized mutual benefit and win-win results. In 2020, China Unicom promoted digital village cooperation across China, with a total of over 6,000 digital villages established and 140,000 users covered.

- Cooperating with high-quality partners such as Tencent, iQiyi, Youku, Mango TV and Bilibili, China Unicom had over 20 million users of cooperative products based on “content + traffic + privileges”, and achieved an accumulative of over 30 million business subscriptions.

In April 2020, China Unicom signed a strategic cooperation agreement with People’s Daily Online to jointly construct an “intelligent media platform”. By doing so, the mainstream and authoritative voices and core socialist values could be passed on to the mass in a fast, accurate, and efficient manner. In the future, the two parties will further carry out cooperation in the value-added business such as fixed communications services, brand and public opinion services, joint construction of education platforms and 5G innovative services.



China Unicom signed a strategic cooperation agreement with People’s Daily Online

In December 2020, China Unicom signed a strategic cooperation framework agreement with Meituan. Based on the advantages of resource endowments, the two parties conducted in-depth cooperation centering around 5G, Internet of Things and Big data, pushed forward digital transformation and upgrading through off-line empowerment, and jointly explored more business models and development directions.



China Unicom signed a strategic cooperation framework agreement with Meituan

Expanding industrial digital cooperation

China Unicom valued to enhance the cooperation on government-enterprise products and key projects with upstream and downstream partners in the value chain, fueling economic and social transformation and upgrading.

- China Unicom consistently pushed forward the development and iteration of products by joint ventures such as Yunlizhihui, Yunjingwenlv, Yundee, Yundun, Smart Steps, and others, and improved the product and service capabilities in areas including Smart cities, tourism, industrial Internet, cybersecurity, and demographic Big Data. In 2020, there were a total of over 200 bid projects, with the amount of bid exceeding RMB730 million.
- China Unicom continuously deepened cooperation with partners in public cloud and adopted the principles of joint input of resources, effective connection of technologies, and reasonable distribution of revenue to create a new model of joint construction and operation of the public cloud.

In May 2020, Yunjingwenlv worked with the Guizhou Province to develop “Travel across Guizhou with One Code”, an all-area Smart travel platform. With just one QR code, the tourists traveling in Guizhou can access services concerning “food, accommodation, transportation, traveling, shopping and entertainment”. Currently, the platform has gathered over 20,000 basic data of 415 A-grade scenic spots, hotels, cultural facilities, restaurants, homestays, drawing maps of scenic spots, elaborate routes, and guides across the province, which has comprehensively improved the experience of tourist traveling in Guizhou.



Building a capital cooperation ecosystem

China Unicom conducted in-depth capital cooperation with BATJ and other strategic investors of mixed ownership reform and leading companies in the industry, boosted the two parties’ business cooperation via capital cooperation, and met the customers’ demands with differentiated services.

- In May 2020, China Unicom established iCloud Wisdom Technology Co., Ltd. with NetDragon Websoft Holdings Limited, National Engineering Research Center For E-Learning, and National Engineering Laboratory of Educational Big Data to provide customers with products and services with whole-procedure penetration and comprehensive solutions for education informatization.



- In November 2020, China Unicom established Beijing International Cloud Broadcasting Technology Co., Ltd. with CDV, Academy of Broadcasting Science, NRTA, and Beijing Gehua CATV Network Co., Ltd. to provide “service access with full cloud + full IP + full mobile + immediate access services” for video communication, driving video production and communication to develop in a full-media, intelligent and light manner.

