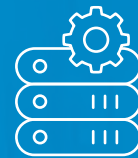




Digital Intelligence Innovation

In step with the development trend of the information civilization era, China Mobile maintained a steadfast focus on the goal of "becoming a world-class enterprise and a major force in building a cyberpower, a digital China, and a smart society", making dedicated efforts to build a new information infrastructure and a new information service system, democratize the "connectivity + computing force + capability" services, and continuously improve the quality of supply. The Company consistently worked to be a powerful catalyst of the digital intelligence transition in production, life, and governance across the whole society, improve the quality of customer service, push for an open and cooperative ecosystem, and strengthen network security. We applied a new generation of information technologies to build a modern industrial system to continuously unlock demands and empower the high-quality development of the whole society.



Leading New Information Services



Enabling a Future of Digital Intelligence

SUSTAINABLE DEVELOPMENT GOALS

Responding to SDGs

8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION





Leading New Information Services

China Mobile strove to build a new information infrastructure focused on 5G, CFN, big data, and capability middle platforms, innovatively built a new information service system of “connectivity + computing force + capability”, and created new models of value growth to promote the new generation of information technologies to become an essential service for the society.

Creating First-Rate “Connectivity Services”

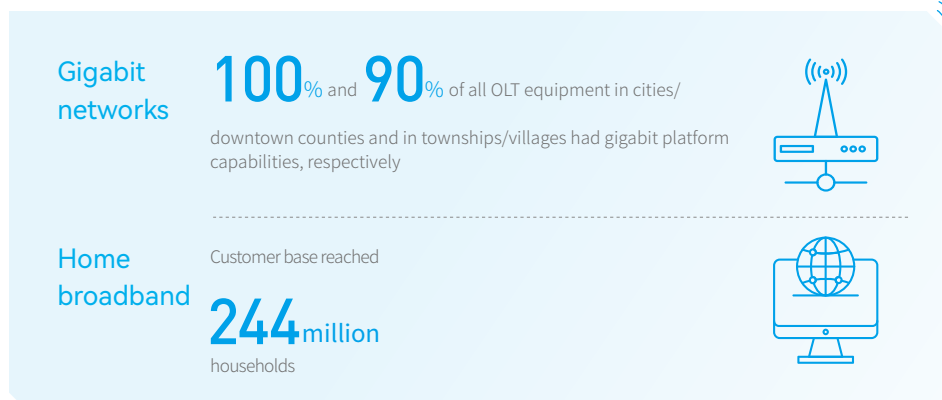
China Mobile continued to build and deploy 5G and gigabit optical fiber networks to provide high-speed, mobile, secure, and ubiquitous “connectivity services”. We aimed to build first-rate 5G networks to provide high-speed, mobile, secure, and ubiquitous connectivity services for the people and various industries.

► Strengthening basic connectivity

We strengthened the scientific planning, precise construction, co-construction and sharing of 5G networks, achieved multi-frequency coordination and efficient deployment by scientifically coordinating our 700MHz, 2.6GHz and 4.9Ghz spectrum resources, and continuously expanded the depth and breadth of 5G coverage. We furthered co-construction and sharing of 5G networks with China Broadnet, focused on building 700MHz frequency band network as a foundation and progressively expanded our indoor coverage with precise development of the 2.6GHz and 4.9GHz frequency bands, cementing our leading edge in 5G as we worked to build the world’s largest boutique 5G network with nationwide coverage, advanced technology, and excellent quality.



Thoroughly implementing the national “dual gigabit” network plan, we refined the gigabit deployment strategy and promoted pipeline coverage by category in response to customers’ needs in the market. We prioritized building of our platform capabilities and set up ports by demand, enhanced the end-to-end network capabilities of our household broadband and created a gigabit broadband boutique network connecting thousands of households.





Case

China Mobile's 5G served the ocean

Proactively responding to the strategy of building China into a maritime power, China Mobile launched 5G coverage projects across inshore, nearshore and offshore waters, and promoted the expansion of 5G networks into the ocean. In such way, we played an instrumental role in strengthening maritime supervision, promoting development of the maritime economy, and facilitating the life of fishermen and tourists. By the end of December 2022, our maritime 5G projects covered numerous coastal provinces such as Liaoning, Shandong, Jiangsu, Zhejiang, Fujian, Guangdong, Guangxi and Hainan, and achieved extensive coverage of nearshore waters.



© China Mobile built 5G networks in the "Offshore Communities"



© Fishermen stayed in contact with their families via VoNR

► Optimizing network experience

With a focus on users' experience, we continuously improved network quality and actively tackled quality issues. We have built a digital intelligence network operations and maintenance system to accurately identify and address network problems and precisely build and improve the efficiency of network resources, thereby providing high-quality network services to support diverse business applications.



• For individual users

- We led the industry in terms of both mobile network quality satisfaction and 5G Internet quality satisfaction.
- We were the first in the world to offer VoNR HD calling service; we introduced support for 720P HD video calls, making communication more effective and interesting.



• For household users

- We maintained a >99% timely rate for installation and maintenance service across the network.
- We provided "One Household, One File" quality optimization services for customers and completed network optimization for 158,800 communities, bringing continuous improvements in network stability and robustness.
- The success rate for automatic activation of household broadband services increased from 95.57% to 97.90%, and the time required for activating household broadband services was shortened from 22.72 hours to 20.53 hours.

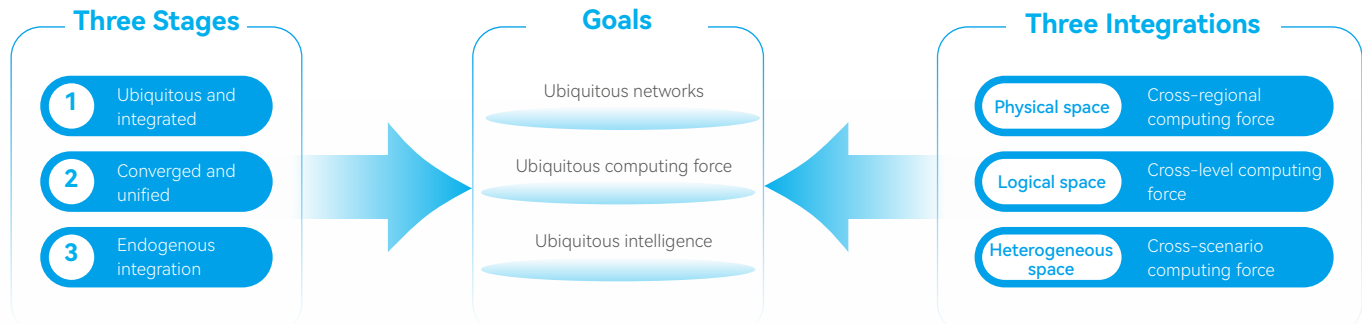


• For business users

- The overall satisfaction with of private line network increased from 93.53% to 96.57%, and the satisfaction with enterprise broadband network increased from 91.22% to 94.86%.
- The activation time for standardized use cases of private 5G networks was significantly reduced and the IoT activation timely rate increased by 55PP.

Enhancing Ubiquitous and Convergent “Computing Force Services”

China Mobile implemented the national strategy of channeling more computing resources from the eastern areas to the western regions. With the development goal of developing ubiquitous computing, co-existing computing and network, smart orchestration and integrated services, we optimized the layout of data centers and the planning of high-speed direct networks, sped up the construction of an extensive and integrated CFN, and developed instantly accessible “computing force services”. We built a three-level low-delay computing force service system with only 20 milliseconds delay nationwide, approximately 5 milliseconds delay within a province and 1 millisecond delay within a prefecture-level city, thereby promoting computing force as an essential service for the society like water and electricity.



Accelerating the construction of CFN and harnessing self-developed computing network technologies

Computing force refers to data processing capability. CFN is an innovative technical concept proposed by China Mobile in 2021 that refers to a new type of infrastructure offering one-stop service characterized by deep integration of computing force and network. Stronger computing force means stronger data processing capability, which would produce more accurate and useful data. Therefore, CFN will undoubtedly become an important foundation for creating a digital intelligence-empowered society.

Standing at the forefront of sci-tech innovation, China Mobile integrated the eight core elements of “ABCDNETS” and continuously promoted the construction of CFN. Among these core elements, Cloud, Edge and Terminal constitute the multi-layer architecture for ubiquitous computing force ; Network, as the bridge connecting users, data and computing force, constitutes the new infrastructure of CFN through deep integration with computing force; Data and AI are integrated into CFN as its “brain” and contribute to a unified, agile and efficient computing network resource supply system; Blockchain is the cornerstone for maintaining credibility of computing force transactions; Security is the foundation for ensuring the reliable operations of CFN and needs to be integrated into the CFN system to form an endogenous security protection mechanism.



► Promoting the deployment of computing network

We further promoted the deployment of computing network and accelerated the upgrading of infrastructure focusing on the “Three Integrations”. We implemented the strategy of channeling more computing resources from the eastern areas to the western regions and promoted a hierarchical layout of the national integrated CFN comprising national hub nodes, provincial data centers and edge data centers. We promoted the construction of “4+N+31+X” mobile cloud, network structure optimization and high-speed direct connections, and built a three-level low-latency computing force service system. We built nationwide cloud dedicated networks, accelerated the efficient coordination of central, edge and terminal computing force, and brought all connected devices to the cloud. We further enriched the diverse computing force resources, such as CPU, GPU and FPGA, and sped up the unified grid-connected management of social computing force, including cloud service providers, smart computing and supercomputing centers, to meet the demands for computing force in different scenarios.

4+N+31+X

4 refers to the four focal regional areas (the Beijing-Tianjin-Hebei Region, the Yangtze River Delta, the Guangdong-Hong Kong-Macao Greater Bay Area and the Chengdu-Chongqing Economic Circle); N refers to the super large-scale data centers planned within the 10 data center clusters as national hub nodes; 31 refers to the super large-scale data centers planned for each province; and X refers to the city-level data centers and convergence rooms planned for the respective localities.

In 2022

710,000+

cloud servers (including mobile cloud, network cloud, and IT cloud) launched

Floating point computing capacity reached

8.0 EFLOPS

Deployment of computing force resources

Strengthening the construction of mobile cloud resources: We added 62,000 new servers, bringing the total to 154,000 (excluding private cloud and computing force servers).

Optimizing the IT cloud resources layout comprising “one cloud and six centers”: We added 70,000 new servers, bringing the total to 342,000.

Fully supporting the cloud transformation of the network: We adjusted the disaster tolerance relationships in large areas, forming an overall layout of “8+X”, 16 provinces, and 21 nodes.

Transmission network optimization

Building an efficient and intelligent interconnection network: 508 data transmission flows in the backbone network and the cloud dedicated network are covered by direct connections, reducing network delay and improving relay efficiency; the number of prefecture-level cities with PE equipment deployed for cloud dedicated networks reached 304, supporting the on-demand access of social computing force resource pools nearby.

Building a ubiquitous network with flexible cloud access: We built OTN (Optical Transport Network), SPN (Secret Private Network), PTN (Packet Transport Network), PON (Passive Optical Network) and other networks, leading the industry in terms of underlay network coverage capacity; built the SD-WAN (Software-defined Wide Area Network) covering 31 provinces and connected the Overlay network to the cloud to meet the demands for flexible cloud access.

Building data centers

National Hub Nodes: We added nodes to and expanded our data center clusters to build strategic reserves.

Provincial Data Centers: We promoted intensive business deployment and made full use of existing land resources by building as much as needed and insofar as conditions permit to optimize resource utilization.

Prefecture-Level Data Centers: We sped up the retrofitting of facilities in old server rooms to cultivate their potential, increase efficiency, strengthen coordination and optimize allocation of server room resources.

► Innovating computing force network application

China Mobile continued to carry out R&D in core CFN technologies, actively building capabilities in key areas such as storage and computing integration, computing power routing, and in-network computing to gradually establish a complete technical stack and panorama of CFN. Based on the prototype of a “Computing Network Brain” and pilot projects on existing networks, we worked to enrich our instantly accessible computing force services and expedite the integrated allocation and smart supply of computing network resources. By building the CFN Innovative Test Infrastructure (CFITI), we advanced materialization of various new scenarios such as east-to-west data storage, east-to-west computing, east-to-west AI training, east-to-west rendering, central cloud training and edge cloud implementation, and computing force trading. Under our proposal of an innovative “computing force e-commerce” model, we built a unified trading platform for reliable computing network services, thereby revitalizing computing force resources across the society.

CFN has been adopted in a broad swath of scenarios, including in applications such as cloud XR and cloud games, in cloud-network integrated products such as cloud dedicated access and cloud internet, in industry solutions such as unmanned mining and port machinery remote control, and in new forms and models of business such as Internet of Vehicles (IoV) and metaverse. Going forward, China Mobile will seek to be a major force in supporting the digital vision of “ubiquitous networks, ubiquitous computing force, and ubiquitous intelligence” through the construction of the CFN.



Case

China Mobile launched the CFITI to advance “the east-data-west-computing project” profoundly

The CFITI was officially launched at the “Computing Power Network Innovation and Development” parallel session of the 2022 China Computational Power Conference. With a view to promoting the construction of enormous scientific apparatus for national CFN, CFITI was anchored in four key objectives: a new technology test bed, a national demonstration base, an industrial convergence platform, and a new business incubator. It featured a multi-node interconnected dual-plane test network for sci-tech innovation and business verification. With a starting layout of 1+9+9, it radiated from the northern base, the International Information Port (Beijing), as the central node (the “1”), to span the whole country, forming an innovative interconnected multi-node infrastructure. The two 9s were nine group-level nodes in the nine provinces of Zhejiang, Jiangsu, Guangdong, Shandong, Henan, Shanxi, Guizhou, Inner Mongolia, and Gansu, and nine characteristic provincial-level nodes in the nine municipalities/provinces of Beijing, Chongqing, Hunan, Fujian, Xinjiang, Yunnan, Hebei, Sichuan, and Ningxia.

Developing Open and Shared “Capability Services”

China Mobile continued to build an open and shared capability middle platform system of “business + data + technology” that incorporated the features of China Mobile as a telecom operator and as a brand while offering modular and ready-to-deploy “Ability as a Service” (AaaS). We built industry-leading capability middle platforms to democratize a cloud-based, digital, and smart life across society, aiming to enhance social, user, and business value all at once.

► Building capability middle platforms

The Company deepened the convergence and accumulation of integrated information technologies such as big data, AI, blockchain, security certification, and precise positioning. It optimized the “central kitchen” sharing mode as represented by service output, settle-in and development, and integrated applications. We also built a “capability supermarket” for middle platforms, gathering high-value capabilities from internal and external sources to establish open and shared middle platforms with industry-leading capabilities.

By the end of December 2022



Building industry-leading capability middle platforms

| Business middle platforms | Technological middle platforms | Data middle platforms |
|---|---|--|
| <ul style="list-style-type: none"> ◆ Accumulating common business capabilities and supporting agile innovation of products and services ◆ Improving quality and efficiency based on the cloud-native technology architecture via the application of intelligent processes, intelligent auditing, and intelligent operations and maintenance | <ul style="list-style-type: none"> ◆ Aggregating common capabilities such as communications, AI, and blockchain ◆ AI: The value of launching the Jiutian AI platform at scale exceeded RMB 3.9 billion ◆ Blockchain: Providing 12 production-level capabilities for commercial use, such as proof of existence and tracing | <ul style="list-style-type: none"> ◆ Gathering value data and building core data capabilities ◆ Hosting over 300PB of centrally shared value data, leading the industry in scale |

Wutong Big Data platform: improving the efficiency of sharing and opening up and empowering the development of industry ecosystem

Big data is a “digital treasure trove” in the new era. As big data permeate every corner of our society, economy and daily life, China Mobile worked to maximize the value of its platforms, actively stepped-up cooperation across the big data ecosystem with open platforms, open ecosystems and open portals based on its Wutong Big Data platform, and unleashed the value of data as new growth drivers.

In 2022, we set up four “centers” for different audience surrounding our Wutong Big Data platform: Product Promotion Center, Talent Pool Center, Ecological Exchange Center and Operations Management Center. We provided services to customers and front-line customer relationship managers in eight major industries such as IT and finance, assisted in hosting 23 large-scale exhibitions and served a total of over 70,000 customers. For college students, we held the “Wutong Cup” Big Data Application and Innovation Competition, and hosted big data training camps under our partnerships with universities, forming systems for cultivating internal and external talents, and providing opportunities for us to promote our platforms and brands. For partners within our business ecosystem, we gathered big data capabilities, opened-up D-PaaS (Data Protection as a Service) capabilities and built a multi-party secure computing platform to meet the diverse needs of our industry customers as we worked together to create a big data ecosystem. For our management personnel, we standardized rights management and operations to ensure system security.



© China Mobile hosted the Maker Hackathon 2022



Empowering a Future of Digital Intelligence

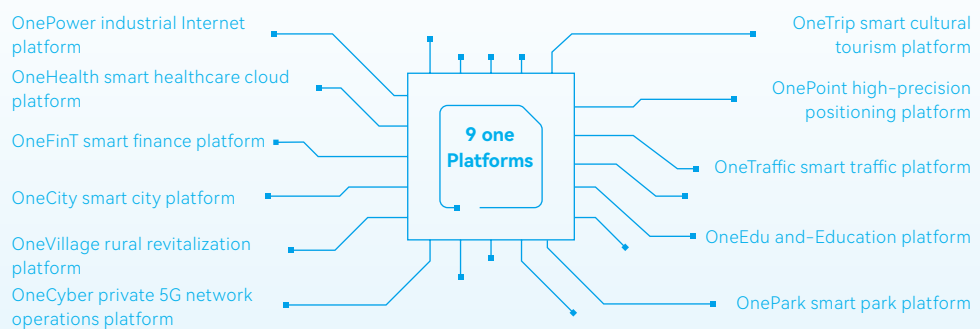
Fully deploying the foundation and capabilities of the new information service system, China Mobile actively developed a forward-looking business layout and diversified the product portfolio to cater to the varied needs of economic and social development. We pushed for the widespread adoption of high-quality products across industries and in people's lives to fuel the digital intelligence transformation in production, life, and social governance in the whole society.

Promoting Digital Intelligence Production

Profoundly implementing the "5G+" plan, we harnessed our strengths and capabilities in AI, blockchain, cloud, data, network, edge, terminal and security (ABCDNETS) to build secure, reliable, and stable information networks with visible services, amplify end-to-end capabilities in critical areas such as industrial Internet and IoV, and drive in-depth application of information across all forms and stages of production such as agriculture, industry, and service, thus boosting the digital intelligence transformation across sectors and industries.

9 one Platforms

The 9 one Platforms are a series of industry platforms developed in-house by China Mobile, and their capabilities provide the key foundation for us to serve the ToB market. Building on our key scenario capabilities accumulated over time, we developed a suite of packaged solutions for various industries, offered one-stop empowerment resources for our business partners and delivered integrated services to our customers.



► 5G+ industrial Internet

Leveraging the cutting-edge technologies of 5G+ industrial Internet, the Company developed an assortment of products and solutions for infrastructure construction, factory site upgrading, applications for key stages, and network security protection. Striving towards the three objectives of improving quality, efficiency, and scale, setting benchmarks for safe production, and promoting energy conservation and carbon reduction, we also introduced standard application scenarios such as machine vision-based inspections and AR remote operations and maintenance, consistently advanced our application scenarios from ancillary processes to core processes in production and optimized the 5G fully-connected factory capability system.

"5G Fully-Connected Factory" solutions and capabilities

| | |
|--------------------------------|---|
| 10 industry solutions | Electronic equipment manufacturing, equipment manufacturing, steel, petrochemical engineering, building materials, household appliances, textiles, mining, ports, and electricity |
| 3-level product system | Production line, workshop, and factory |
| Multiple standard applications | Standard offerings such as industrial quality inspections and industrial safety monitoring, and general capabilities such as new industrial smart gateways, high-precision indoor positioning, cloud-based equipment inspections, industrial identification, carbon management, digital twins and industrial low-code development |

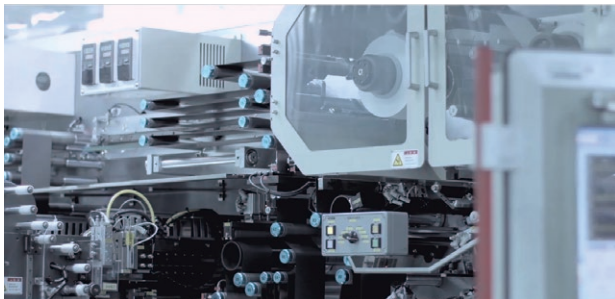
Smart Factory: Centered on the core architecture of "one industrial gateway/5G industrial terminal module + one private 5G industrial network + one industrial Internet platform + N 5G application scenarios", we provided industrial enterprises with "headquarters + branches" one-stop digital smart factory solutions building on standard 5G application scenarios such as large-scale data gathering, machine vision-based quality inspection, factory monitoring, cloud-based AGV and AR remote collaboration. By doing so, we equipped modern factories with "a smart brain", "keen eyesight" and "meticulous housekeepers" and promoted the digital transformation of industrial enterprises.

By the end of December 2022, China Mobile had implemented over **2,300** commercial use cases of 5G smart factory



Case CATL's 5G Smart Factory and China's largest private business 5G network

China Mobile, in collaboration with CATL, built China's largest private business 5G network in terms of coverage, covering over 5 million square meters in total and spanning several provinces, regions and municipalities including Fujian, Jiangsu, Sichuan, Guangdong, Shanghai, and Qinghai. It is currently the largest private 5G network for business in China in terms of scale. Integrating technologies such as 2.6GHz+4.9GHz networking, UPF+, and private 5G network operations platform, the project enabled a variety of 5G application scenarios such as central smart process perception control system, AI-powered ultra-high-speed full-scale video stream quality inspection, full-scale big data real-time inspection, augmented reality (AR) expert system, and smart logistics. By setting up cloud-based digital factories with our 5G technologies, we played an instrumental role in the intelligent upgrades of high-tech enterprises, which won us wide recognition including Top Ten 5G Use Cases at the World 5G Convention and the name of a "Global Lighthouse Network".



© CATL's 5G+ Smart Factory Inter-Provincial Private Network Project

Smart Mines: We developed an integrated solution for the mining industry featuring "one private 5G mining network + one mining industrial Internet platform + N industry applications". The solution was applied in a multitude of typical scenarios, such as remote control of equipment, AI video monitoring, and robot patrol inspections, to help achieve goals like fewer miners required, unattended operations, unmanned driving, and smart management and control and enable the intelligent management of the entire mining process from production to operations and emergency response.

By the end of December 2022, China Mobile had helped build more than **370** 5G-powered smart mines across China



Case 5G-powered smart mines became increasingly IT-based, digitalized, and smart

Catering to mining companies' needs for smart operations, China Mobile worked with Gaohe Energy to develop three information infrastructures, namely "private 5G mining network, cloud data center, and intelligent management and control platform", along with several smart applications.

In terms of network, we successfully tested the first underground 5G VoNR in China using the "Smart Mine" private 5G network based on centralized cloud architecture, enabling underground voice communication and authority management.

In terms of platform, we made operations visible and manageable over 5G networks, introduced real-time data gathering on underground mining, excavation, machinery, transportation and communication, and enabled intelligent control of the entire mining process.

In terms of applications, applications built on 5G network technology, such as 5G+ Smart Combined Mining, 5G+ Smart Excavation, 5G+ Patrol Inspection Robot, and AI-Powered Intelligent Identification of Key Areas, helped mining companies improve production safety, enhance quality and efficiency, and reduce energy consumption and emissions.

Smart Electricity: In keeping with the two key focuses of power generation from clean energy and intelligent distribution network, we created application scenarios such as 5G Intelligent Patrol Inspection, Three Automated Remotes for 5G Distribution Network, 5G Distribution Network Differential Protection, and 5G Intelligent Power Distribution Room. These scenarios helped power plants reduce the manpower needed and realize unattended operations while enabling highly automated power distribution which provided added reliability of power supply. This was a step forward for the power industry in digital intelligence transformation. Leveraging our strengths as a telecom operator, we co-authored the *White Paper on Network Security in 5G Virtual Private Networks for Electric Power*, in which we proposed a feasible and credible solution for ensuring the security of 5G virtual private networks for electric power.

By the end of December 2022, China Mobile had assisted numerous companies with more than **420** 5G smart power projects, including the State Grid Corporation of China and China Southern Power Grid Company Limited



Case 5G+ Offshore Wind Power – China’s first 5G offshore wind farm with deep coverage

Having regard to the complementary nature of 2.6G and 700M networks, Guangdong Mobile reused submarine optical fiber cables in offshore wind farm, sank UPF into onshore centralized control center, and provided continuous network coverage over a sea area of 1,256 square kilometers, with 700MHz macro base stations covering outdoors and 2.6GHz networks covering the fan towers. The project turned the area into a whole-new offshore smart park. We introduced application scenarios such as UAV Intelligent Patrol Inspection, 5G+ Electronic Fence, and and-Talkback Maritime Patrol Inspection and Emergency Response, enabled intelligent perception of people, property and goods, and addressed a handful of problems associated with traditional patrol inspections such as low efficiency and lack of security.

► Internet of Vehicles (IoV)

The comprehensive data processing capabilities applied by the Company in “vehicle, road, network, cloud, and image” contributed to the rapid growth of new IoV industries. Systematically targeting the three directions of connectivity services, information services, and vehicle–road coordination, we extensively explored digital innovations such as intelligent network connection, smart intersections, vehicle–road coordination, and high-precision positioning. We launched the world’s largest “5G+ BeiDou High-Precision Positioning” system, implemented China’s first 5G new infrastructure vehicle–road coordination projects in Suzhou, and participated in constructing national-level IoV pilot areas in Wuxi and Chongqing.

By the end of December 2022, we were empowering more than

35 million IoV front-load connections and operating more than **300** benchmark vehicle–road coordination projects



Case China Mobile enabled low-cost, high-efficiency digital transportation based on the OneTraffic smart traffic platform

China Mobile launched the “5G+ Precise Public Transport” project on Jiangxin Island, Nanjing using the in-house developed OneTraffic smart traffic platform. This was the first successful application of the 5G+V2X networking technology in China. We integrated data across various domains and across the island, and supported a wide array of application scenarios such as 5G Unmanned Vehicle, Smart Remote Control, Smart Road Early-Warning and Management, Bus Dispatch, 5G Smart Intersections, and 5G Smart Parking. The project reduced the infrastructure cost by 37% and increased the public operational efficiency by 27% and the average travel efficiency by 20%.



© 5G+ Precise Public Transport, Jiangxin Island, Nanjing

► Commerce and cultural tourism

We provided smart solutions and products for authorities, enterprises, institutions and individual users in industries such as cultural tourism, commerce and real estate. Our offerings enabled industry authorities to enhance control over the industries, helped enterprises improve their service efficiencies, and provided greater convenience to the public.

Smart Commerce: The Company provided scenario-based solutions with “private line + cloud + applications” for a number of industries such as retail, hotel, catering, and service, and developed the “5G + IoT + GIS + 3D Visualization” Smart Site Management Platform for the construction industry.

By the end of December 2022, we had launched over **300** smart commerce projects and over **4,600** smart site projects and seen a net increase of **1.488** million hotel rooms at smart hotels

Smart Cultural Tourism: The Company developed the OneTrip smart cultural tourism platform targeting cultural tourism supervision, smart scenic spots, smart cultural museums, and other key areas.

By the end of December 2022, the platform had provided digital intelligence services for **16** provincial cultural tourism institutions in Jiangsu, Xinjiang, and other provinces, **14,000** A-level scenic spots, and **1,227** national museums

Creating a Life of Digital Intelligence

Taking advantage of the scale of its 5G and gigabit optical fiber network, China Mobile continuously enriched its product portfolio and scenario applications closely surrounding the digital intelligence life of individuals and families. We explored and innovated a multitude of scenario applications such as Virtual Digital Intelligence Human, Cloud XR Virtual-Real Space, Cloud Tourism, and 4K/8K Ultra HD Live Video. We also upgraded our GoTone, M-Zone, and Easyown brands. With these measures, we continuously worked to make it easier for people to acquire, apply, and interact with higher-quality information and make their life more intelligent.

► Enjoying a digital intelligence life

By integrating our capabilities in communication, storage, data and content, we developed featured products such as Mobile Cloud Disk, Super SIM, Mobile Identification, Video CRBT (Color Ring Back Tone), Cloud Games and Cloud XR. We advanced online and offline integration in the context of our daily life scenarios, from food, clothing, housing to transportation, so everyone's material and spiritual needs could be better served.

Innovative digital life: Based on our cloud + big data + AI capabilities, we integrated a rich mix of content such as videos, games, music, animation, and reading. We also explored and advanced metaverse applications, such as Virtual Digital Intelligence Human and Immersive Entertainment, to continuously enrich digital entertainment for individuals.

Rich application scenarios of video CRBT

China Mobile pioneered video CRBT in 2018, upgrading the traditional ringback music to ringback short video and making it visible.

In 2022, China Mobile enriched the application scenarios of video CRBT with a focus on individual, enterprise, and media markets to continuously meet the needs of different market segments. The user count of our video CRBT reached 343 million.

Content Reserve: We continuously expanded our content library by bringing in quality content, establishing an original content incubation system, and furthering in-house productions, and set up a whole-new stage for content. We hosted over 16 million pieces of content in total, with more than 5,000 pieces of quality content focused on the Winter Olympic Games, the World Cup and other IPs.

Product Experience: We optimized the experience with the basic functionalities of video CRBT and accelerated R&D of new technologies such as 5G Ultra HD Adaptive Media Playback and Real-time Interaction. We built up an all-encompassing product matrix and actively explored a full range of new fields such as metaverse, digital collection, and content re-creation, constantly optimizing product functionalities and improving product experience.

Content Release: We supported the publication of content on livelihoods and public welfare via video CRBT by developing a smart publication ability featuring data integration, audience

Convenient mobile network: The Company actively enhanced diversified, scenario-based application capabilities to provide individual users and industrial organizations with greater security and convenience in the use of mobile networks.

Mobile Identification

We offered login and identification services for mobile Internet applications. We provided businesses with comprehensive one-stop solutions to user account usage and data management based on our unique data network identification + data capabilities as a telecom operator, thus shifting mobile phone numbers from being a mere communication account to being a multi-industry account system that served "communication, Internet, IoT, and banking". By the end of December 2022, our mobile identification service had been connected to more than **49,000** applications, with an average daily identification volume of **1.873 billion**.

Super SIM

The national security properties and the convenience of application upgrades featured by the Super SIM card allowed us to innovatively develop a suite of secure and intelligent 5G products. Guided by the goal of being "the new cornerstone of security in the digital intelligence transformation of society", we combined the different function modules of SIM card with a variety of technical solutions such as digital certificate, digital identity, and NFC, thus achieving identification service value, security service value, and livelihoods value and gradually making the Super SIM card our new information service infrastructure.

5G Message

As an Internet-based upgrade of SMS, 5G Message has unique advantages, including being APP-free lightweight, integrated content such as text, image, audio, and video, and SSH login cloud service, which enable it to provide a wide range of information application services for society. By the end of December 2022, 5G Message had been connected to nearly **13,000** applications.

Enriching Customer Benefits: We built a digital life service supermarket and brought our convenient digital benefit experience to thousands of households. By the end of December 2022, China Mobile's customer benefits supermarket hosted 10,243 benefit products under 10 categories from 6,442 brands. With the "Spark Plan of 10,000 Stores" initiative, we introduced joint products, conducted joint marketing and promotion, and equipped our business partners with the ability to market their digital products directly through our customer benefits platform.

By the end of December 2022, we had

287 million benefit customers

Foreseeing metaverse

Mobilizing its technical advantages and Ultra HD video-related capabilities, China Mobile actively built and expanded its presence in the field of metaverse and released the MIGU Metaverse Evolution Roadmap. More than 10,000 users interacted on our industry-first Real-Time Rendering of Single Bit Space. More than 100,000 concurrent sessions were recorded on our 5G+ CFN-based Distributed Real-Time Rendering Network; and our 5G+ CFN Whole-Scene Cloud Games also registered more than 100 million MAUs. Meanwhile, more than 1.8 million meta-settlers joined China Mobile MIGU's all-series products and received their "bit" statuses, and more than 57 million users tried out and interacted on our metaverse.

MIGU Metaverse Evolution Roadmap

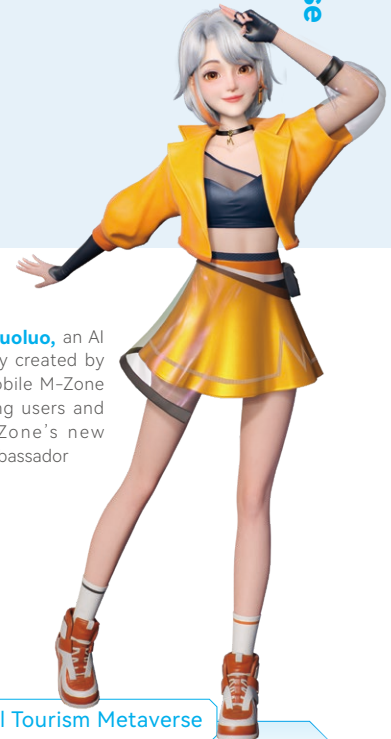


© China Mobile MIGU unveiled the MIGU Metaverse Evolution Roadmap

A Snowy Metaverse for the Winter Olympic Games

As the official broadcaster of the 2022 Beijing Winter Olympic Games, China Mobile was the first in the industry to achieve live broadcasts of 530+ games in full. We brought the first digital-reality "Snowy Metaverse for the Winter Olympic Games" to our users. During the games, China Mobile made history with the world's first large-scale 8K Ultra HD live broadcasts. By bringing panoramic photography, 5G+XR, AI subtitles and other advanced technologies to the arena, we built the world's first "Snowy Town" for the Beijing Winter Olympic Games and allowed users to experience the charms of ice and snow in the Metaverse for the Winter Olympic Games. Meet Gu, the L5 digital avatar of Eileen Gu, a Winter Olympic champion, was a complete sub-millimeter replica of herself. The digital avatars created for five Olympic champions – Eileen Gu, Xu Mengtao, Sui Wenjing, Han Cong and Ren Ziwei – performed at the online Spring Festival Gala, which brought sports games and the ice and snow culture closer to the general public. Our live broadcasts and derivative content on the Beijing Winter Olympic Games recorded 34 billion views, 71.1 billion online clicks and 67 million counts of overseas exposure.

Cheng Luoluo, an AI girl jointly created by China Mobile M-Zone and young users and also M-Zone's new brand ambassador



World Cup Metaverse

As the authorized broadcaster of the World Cup Qatar 2022, China Mobile created the world's first World Cup Metaverse. We pioneered the first Naked-Eye 3D Video CRBT based on a 3D rendering engine, which was played over 1.2 billion times. We also pioneered the "Watching Football in the Car" experience in a multi-screen and multi-angle intelligent cockpit (available to 80% of new-energy auto companies). We presented our users with a novel experience and brought them to the scene across mobile phones, tablets, VR/AR and TVs, and even enabled them to experience the goals from the players' view via cloud VR/AR. Our whole-scenario contents were played 36 billion times, and our metaverse digital intelligence products covered 40% of the games.

Metaverse Music Feast

M-Zone launched the world's first whole-scenario digital-real metaverse concert – the "M-Zone Music Feast". We created a customized immersive XR stage and invited celebrities to perform with Cheng Luoluo, the M-Zone digital intelligence ambassador, bringing a high-tech sensory feast to music fans. The live broadcast garnered over 376 million views in total.

Interactive Cultural Tourism Metaverse

China Mobile actively promoted metaverse construction in Xiamen and built a benchmark demonstration project of cultural tourism metaverse in China. During the 22nd China International Fair for Investment and Trade (CIFIT), China Mobile debuted the Metaverse AR night scene in Gulangyu, which brought a hyperspace experience with land-sea and digital-real spatial interactions.



► Building distinguished brands

Over the years, we have always been building our brands in adherence to our business philosophy of “optimizing customer perception and furthering market integration”. With a focus on business travel and family settings, GoTone provided exclusive courtesy services and maintained our high-value customers; associating with health, GoTone invited Olympic champions to fitness live broadcasts and conveyed positive brand connotations; associating with public welfare, GoTone organized charitable donations and enhanced its brand image. M-Zone built out the first metaverse space, cultivated its digital intelligence ambassador, and sponsored iconic events to spread its brand culture. Easyown launched customer upgrade plans for elderlies and delivery drivers, and developed products tailored for customer groups.



Case China Mobile “GoTone” enriched service offerings and improved user experience

China Mobile “GoTone” built a system of exclusive courtesy services for business travelers and offered customers with high-quality services and experience, including airport and high-speed rail VIP lounges, discounted hotel rates, insurance, etc. For example, the VIP lounge service had extended to 147 airports and 150 high-speed railway stations nationwide, and the hotel VIP service had extended to more than 300,000 hotels worldwide. In 2022, the GoTone exclusive courtesy service program served 4.13 million customers on 6.7 million instances in total. Our “GoTone 2022 Fitness Plan” provided fitness live broadcasts and invited Olympic champions and celebrities to lead fitness enthusiasts in completing 10 fitness sessions, which attracted over 10 million online viewers. We also launched the “GoTone Fitness Club” AI physical test and AI personal training, enhancing the digital intelligence fitness experience of “GoTone” customers and enriching the brand’s connotation of “innovation, motivation and sensibility”.



► Innovating smart home

China Mobile shaped a new smart home lifestyle that combines full-gigabit network connections with cloud-based applications, created a household information service portal consisting of broadband television, digital cinema and vertical content, and promoted our products and applications such as smart home network deployment, home security, smart voice remote controls, big screen content-on-demand services and and-Home smart voice. Meanwhile, we vastly expanded HDICT (home data, information and communications technology) application scenarios such as digital villages, smart communities, smart home, elderly healthcare, home education, and smart vehicle space. We have developed more scenarios in social, entertainment, home office and community contexts to provide comprehensive smart home products and services that extend into all processes and all scenes.

Smart Home Network Deployment

We provided different smart home network deployment services by classifying households into three classes based on floor area. We adjust our terminals and services offerings having regard to the users’ broadband bandwidth and the latest developments in WiFi technology. We placed a focus on promoting WiFi6 networking products and devised customized solutions for users. The monthly proportion of WiFi6 routers out of all routers activated increased from 50% at the beginning of the year to **74.0%** in December 2022, indicating a notable improvement in the user terminal structure. In response to the government’s call for expanding gigabit optical network, we upgraded our home network product offerings and launched the FTTR (Fiber to The Room) business in May 2022, which had more than **500,000** users by December 2022.

Big Screen Content-on-Demand Services

We provided optional “Mobile HD” content services to users, including standard entertainment such as movies, TV shows, variety shows, children’s shows, sports, cartoons, reading, e-sports and educational content. Meanwhile, we also offered interactive educational and healthcare content, cloud games, music and karaoke, video calls, home control and other interactive content and applications. With these services, we delivered a full scene entertainment solution featuring “watch + learn + exercise + listen + play” experience for households. In 2022, users of our big screen content-on-demand services reached **110 million**.

Andlink

We built a smart home information services portal and offered users a vibrant household information services ecosystem. Andlink had been connected to **over 450** hardware manufacturers and **over 10,000** types of devices, and recorded **over 110 million** hardware bindings, ranking the **second** in the smart home industry. We also built a lightweight application access solution based on the Andlink mini program, which provided developers with one-stop services from creation, management to operations, and developed over **1,000** accesses.

► Providing Heartwarming Services

Committed to our “customer-first” and “service-oriented” service philosophies, we built the “Heartwarming Service” brand, formed a “Three-All” (all-round, all-process and all-staff) suite of services. We promoted new digital service models and offered one-stop digital service capabilities to customers through the 10086 comprehensive smart service portal, continuously improving the quality of our services.

All-round service capabilities: We shaped a set of service quality standards based on customer experience, which drove further improvements in our end-to-end services. We made extensive use of intelligent technologies and tools, innovated digital intelligence services, and continuously improved our service operations and smart service support capabilities. By focusing on “big services” and taking customers’ perspective, we dedicated ourselves to tackling service quality issues that our customers were concerned about.

Innovating digital intelligence technologies to bring high-quality, convenient, and efficient services to customers

We launched the 10086 comprehensive intelligent service portal, applying big data and AI technologies to provide customers with intelligent customer service, video customer service, and other intelligent services. The portal provided an average of **173 million** counts of intelligent customer services and **132 million** counts of video customer services on average per month.

With the benefit of the “Dayin Platform” (customer experience improvement and management platform), we provided customized and engaging services for customers.

Over a course of four years, we continued to make progress on our Satisfaction Improvement, Lights-Out and Sunlight Operations

“Satisfaction Improvement Operation”: We focused on improving customer satisfaction over issues relating to mobile internet access, broadband internet access, key products and service contacts.

“Lights-Out Operation”: We focused on addressing key and difficult issues raised in complaints and improving the efficiency of complaint handling. As such, our customer complaint rate decreased year by year, and the monthly complaint rate per 10,000 users decreased by **more than 50%** compared to that of three years ago.

“Sunlight Operation”: We focused on protecting customers’ rights and interests, and established long-term mechanisms to cracked down violations of our customers’ interests and effectively addressed issues such as uninformed subscriptions.



Empower **businesses**

Empower **operations**

Empower **hotlines**

Driven by data and processes, the Dayin Platform has achieved dynamic management of experience enhancement and controllable service operations.

The “Use and Evaluate” feature has been implemented in over 200 business scenarios, reaching an average of 270 million customers per month and enabling prompt access to their feedback on service experience. Covering the entire customer service process, it generates customer satisfaction scores and proactively identifies and resolves issues before customers do, delivering proactive care for millions of customers every month. The platform also enables precise service operations by creating and applying service tags, with a monthly usage volume of billions of times.



Building the brand with actions

Five worry-free game-watching services

Worry-free networks, worry-free game watching, worry-free communication, worry-free remote services, worry-free guarantee

Six new measures of Heartwarming Service

Exclusive filial card, nationwide inter-provincial broadband, exclusive rights upgrading, remote smart services, “Three Ones” worry-free consumption, and prevention of international fraud

Personalized services

“Heartwarming Service: Elderly Guardian Plan,” “Heartwarming Service: Delivery Driver Guardian Plan”

Touching customers with contents

Colorful contents

We launched a series of easy-to-understand videos, including the “Heartwarming Service” brand promotion film, the 10086 multi-language service vlog, and the home broadband self-help troubleshooting guide



Case Always available for the people

As a service channel with close ties to innumerable customers, China Mobile's 10086 continues to evolve its service capabilities to adequately support the information and communications needs of the general public.

We innovated a new-generation, cloud-based customer service system and enhanced our digital intelligence support capabilities, which upgraded our previous decentralized support system in 31 provinces to a centralized one, unified our service standards and improved our service efficiency. We supported our employees working from home under our "knowledge empowerment, training motivation and employee care" home-based operations model. We took the lead in launching 5G Video Customer Service and effectively improved the processing efficiency of complicated service requests. In addition, based on our digital intelligence capabilities such as the new-generation customer service system and cloud-network integrated operation and dispatching platform, we innovatively enhanced our abilities in resource allocation across our network and set up a full-network early-warning mechanism covering over 400 workplaces in 31 provinces, shaping our new operation and organization model of "full-network coordination". We thereby maintained service continuity and notably improved the customer service experience.

All-process quality management: We established a full-process and end-to-end service quality management model and continuously made self-improvement. We carried out data analysis to identify problems in business design and processes before working out quality control points and incorporating them into the service standards and business processes. Which enabled us to trace quality throughout the entire lifecycle. We carried out satisfaction surveys covering all business categories, all contact points, and all customer groups. Each month, we collected feedbacks and suggestions from nearly 200 million users to quickly identify dissatisfaction and make improvements through closed-loop management. We strengthened complaint management and operations, continuously enhanced the tracing of recurring cases, and made sure to solve similar issues once and for all after one complaint.

Continuously improving the customer complaint operations and management system

We focused on addressing the "three quality" issues related with network, products and customer contact occasions, to continue to improve the satisfaction of our mobile, household broadband and business customers.



We regarded customer complaints as effective means of discovering service quality issues and improving service quality. We promoted the effective handling of service issues and ensured that we meet rectification targets set by the Ministry of Industry and Information Technology (MIIT) for common issues in the industry.



We focused on improving the efficiency of customer complaint handling, addressing the "breakpoints" in complaint handling coordination and integrating the complaint handling production systems across the network, thus achieving integrated management of the system.

All-staff service culture: We carried out a variety of featured service culture activities, including General Manager Reception Days, "Station at Stores, Listen to and Address Complaints" campaigns, customer-centric discussions, "Speak for the Service" and "face-to-face" services. We continued to organize service stars selections, selecting role models and their day-to-day stories to shape our image of "Heartwarming Service". In this way, we shaped a service culture where all staff members valued, supported and devoted themselves to customer service.



Case "Station at Stores and Listen to Complaints" – a new mode of "Heartwarming Service"

To comprehensively improve its service quality, China Mobile established the "Station at Stores and Listen to Complaints" campaign, encouraging all staff to go to the front lines based on their job nature. We considered this as an opportunity to re-examine and re-optimize our operations. Focusing on every bit and piece, we shifted from business's perspective to customer's perspective, so we could effectively address practical customer needs and concerns. In 2022, over 96,000 staff members participated in the initiative, submitting 34,000 opinions and suggestions, with an improvement rate of over 90%.



© China Mobile implemented the "Station at Stores and Listen to Complaints" campaigns nationwide

Empowering Digital Intelligence Governance

Leveraging its widely distributed information infrastructure nationwide that spanned all five levels of administration, namely provinces, municipalities, counties, townships, and villages, China Mobile facilitated the integration of massive, real-time, and multi-dimensional data resources across cities, communities, and villages. Meanwhile, China Mobile utilized next-generation information technologies to enhance the integration, mining and utilization, analysis, and overall coordination of data elements, leading to more effective and nuanced social governance.

► Improving overall digital intelligence governance and creating a better urban life

By strengthening the application and integration of its own capabilities, China Mobile stepped up efforts to build its suite of government services product capabilities, such as “One-Stop Government Services”, “One-Stop Collaboration” and “One-Stop Management”, and supported the modernization of the country’s governance system, and overall governance, comprehensive improvements in service delivery to the public, and the development of new smart cities. By the end of December 2022, we had developed **31** mature scenario-based solutions, deployed **53** products developed in-house, and provided IT-based government service solutions to over **200** prefecture-level cities and **1,500** districts and counties.

◎ Creating the “Digital Gansu” provincial government pilot

To help Gansu Province speed up its digital government initiative, China Mobile formed a team of 2,500 with people from 13 specialized subsidiaries and over 20 external companies. The Digital Gansu project was the first time that China Mobile participated in a provincial-level digital government project as a general integrator, representing its first provincial-level digital government benchmark project. Aiming for the project to be “ahead in Midwest China and top-level nationwide”, the team used the most advanced middle platform infrastructure, and through data sharing and business process reengineering (BPR), built a system architecture of unified entry, services, capabilities, data, cloud and network, and operations and management. For the first time, over 1 million service points across all five levels of administration were reviewed and sorted out from end to end and the business processes were reengineered, leading to unification in service points, forms, request acceptance and handling, processing, review, and materials. The system led the country in delivering a consistent, barrier-free experience with online and offline handling of more than 1 million service points by achieving 46 unifications across all four of the provincial, municipal, county, and village levels and interconnection among nearly 1,000 systems. This significantly standardized government services in Gansu Province, and the resultant five-level acceptance and handling system enabled people to have their requests handled from end to end on one online platform, including cross-regional requests. The average percentage of requests that could be handled online reached 94% across the province, significantly boosting government service effectiveness in Gansu Province.

◎ Creating “Digital Heilongjiang” to maximize data value and improve service delivery to the people

The Heilongjiang Digital Government Project included an integrated province-municipality-county framework. With the aim of “Digital Longjiang”, China Mobile established the system by restructuring the business flow, optimizing the management flow, and integrating the data flow so as to enable the government to deliver services through the most streamlined processes and using the fewest materials possible while minimizing the time and cost required and ensuring the greatest ease and satisfaction on the part of the citizens.



◎ Creating the “First Digital City in Northeast China”

We launched the Digital Shenyang Project with the goal of making it the “First Digital City in Northeast China”. In this project, we helped build five major middle platforms of digital government, including the core base, the center, and the data middle platform. The system assembled data in such areas as government services, society, city, and industries, thus forging an “integrated digital base”.

◎ Creating the first group of provincial-level construction pilot cities in Shanxi Province

The Shanxi Jincheng Smart City Project was China’s first full-scenario smart city project brought to life. It included five fundamental platforms, such as a city brain and an open blockchain platform, and ten smart applications such as smart monitoring and digital agriculture. The project was a new type of medium-sized smart city benchmark project built on the OneCity platform that integrated multi-scenario applications and relied on Internet innovation for technical support.

◎ Building China’s leading smart county-level cities

Fengdu County, Chongqing: The Smart Fengdu Project was the first operator-built smart city project in Chongqing. The project created shared links between fundamental government platforms, thus enabling a range of features such as unified service portals, the sharing of information resources, big data application analysis, and video image sharing. The upgrade enhanced both the quality of service delivery and the efficiency of government decision-making. The project won “China’s Leading Smart County-Level City Award”.

Quannan County, Jiangxi: The Smart Quannan Project was built on China Mobile’s 5G networks, OneCity platform, and AI platform and, using terminal devices for data collection, offered the Quannan government a range of applications such as emergency response, grid governance, abnormality alert, and global command, along with a suite of smart terminal services such as mobile law enforcement and cloud horn. The project further modernized the city’s governance.

► Creating smart community with refined management and connecting the “last mile” between community and home

China Mobile developed “AndCommunity” and OneZone Smart Community for urban communities, offered a comprehensive suite of digital services for all life scenarios, and brought residents greater convenience and happiness. By the end of December 2022, our solutions had been adopted in more than 112,000 residential communities across 31 provinces, municipalities and autonomous regions, bringing a positive impact on the life of 16 million residents.

Ensuring Systemic Security

In compliance with relevant legal and regulatory requirements on network security, China Mobile continued to build a structure that promote accountability for and take network security seriously, advanced the role of network security in forming a new development pattern, and safeguarded economic and social development.

► Ensuring emergency communications support

We made dedicated efforts to deliver communications support during emergencies and achieved the target of “no major network failure, no major cybersecurity incident, and no major customer complaint”. We provided solid communications support for a multitude of major events, including the Beijing 2022 Olympic Winter Games and Winter Paralympic Games, the National People’s Congress and Chinese People’s Political Consultative Conference (NPC and CPPCC), the 2022 Annual Conference of the Boao Forum for Asia, and the Fifth China International Import Expo (CIIE). We also played an instrumental role in ensuring communications coverage during emergencies such as the Luding earthquake and 3.21 China Eastern Airlines flight MU5735 air accident, which demonstrated our strong sense of duty as a major player on the national emergency communications response team as well as our tenacity and professional capabilities.

Case Full support for CCTV’s HD live broadcast coverage of Winter Olympics torch relay

On February 3, 2022, the Beijing Winter Olympics Games torch arrived in the Zhangjiakou competition zone and was to travel through five local landmarks, from the Nihewan Ruins Park in Yangyuan, Desheng Village in Zhangbei, the Zhangjiakou Industrial Culture Theme Park, the Chongli Fulong Ski Resort and finally to the Dajingmen Square in Zhangjiakou. Hebei Mobile worked out a meticulous plan to support broadcast of the torch relay: we built 25 new base stations around the landmarks, carried out routine inspections, equipment health inspections and parameter checks on a daily basis over 82 base stations, 144 communities and fiber-optic cables, to ensure fail-proof communications during the torch relay. As the 225th torchbearer finished his relay run, the torch had travelled 14.92 kilometers through 225 passes in 7 hours and 40 minutes, during which our 5G services delivered an uninterrupted feed without any lag or frame loss with a peak user count of 12,303, and completed our mission of supporting CCTV’s 5G high-definition live broadcast coverage of the torch relay.



© Chongqing Mobile delivered communications support during a forest fire rescue in Chongqing



© Jiangsu Mobile provided network support for the World IoT Expo 2022



© Xinjiang Mobile provided communications support for the 7th China-Eurasia Expo 2022

► Ensuring network security

China Mobile set up a designated Network Security Leadership Team and continued stepping up the construction of a network Security Operations Center (SOC) with an integrated expert team covering monitoring, analysis, tracing and mitigation. We advanced our initiative on thorough investigation and resolution of network security risks and hazards, and continued to rolled-out the "Elite Encouragement Plan" to improve our abilities in delivering support for network-wide security operations. Through these efforts, we aimed to build a solid security shield for the cloud-network integrated era and ensure a secure environment for communications.

China Mobile redoubled efforts to bolster the construction of the Cyberspace Security Response Center (Cyber-SRC) and build an "integrated, end-to-end trustworthy" computing network security protection system. As well as strengthening the protection of Critical Information Infrastructure (CII), we also enhanced centralized cybersecurity operations and practical offense and defense capabilities while ramping up our capacity for cybersecurity management and emergency communications support under extreme circumstances. We optimized the data security governance system, further advanced centralized management of harmful information, and strengthened prevention against content security risks.

Further strengthening security awareness

We carried out a series of activities such as "1,000-day Secure Network Operations" and Cybersecurity Workday, recording **4.11 million** participations in security awareness education and training.

Further strengthening identification and elimination of network security risk

We formulated and issued the *China Mobile Guiding Opinions on Network Security Risk Management*, advancing systematic management of key risks, strengthening network risk classification and grading for scientific risk management, and furthering the integration of risk identification and elimination into our daily operations. We improved the efficiency and effectiveness of risk identification and elimination by leveraging multidimensional network data and various algorithms such as fault knowledge graphs, alarm features, resource topology, complaint characteristics, anomaly detection models, and abnormal log analysis, significantly enhancing the resiliency and robustness of our networks against potential risks.

Further strengthening the effectiveness of emergency response plans

We carried out routine emergency drills to improve the emergency preparedness and response-ability of the operations and maintenance (O&M) staff. We have devised a total of **1,388** emergency plans to ensure the inclusion of all necessary scenarios.

"Three areas of further-strengthening and three areas of further-improving"

Further improving network security services

Committed to meeting national network security protection requirements, we acted on the philosophy of "security as a service" and worked to establish industry-leading multi-node dynamic defense capabilities, with a view to "implementing regulations, protecting ourselves, and ensuring customer security". We built collaborative defense and control capabilities and assisted in the creation of a collaborative network security protection system; we safeguarded the security of our critical information infrastructure to support the Company's smart transformation; we established dedicated operations team and processes to provide 24/7 network security services for customers.

Further improving the expertise of our network security personnel

We increased efforts to enhance the practical capabilities of our network security personnel to meet the protection needs of our communication networks and customers, continuously building our team into a highly capable and well-rounded security force with outstanding knowledge, skills, and abilities in both defense and offense. The team received multiple awards from the provincial and ministerial departments.

Further improving the automation of daily maintenance operations

We continuously reduced the proportion of manual operations, which helped reduce human errors and improved efficiency in daily maintenance operations, and contributed to the digital intelligence transformation of our network operations and maintenance.

► Protecting the rights and interests of customers

Responding to national requirements for combating and mitigating telecom frauds, China Mobile continued to carry out the “Cut-Off”, “Modem Fraud Crackdown”, and “Peace-of-Mind” operations to protect the legitimate rights and interests of customers.

“Cut-Off” Operation

We invalidated **5.48 million** high-risk cards, declined **453,000** registration requests from fraud-related defaulters, intercepted **550 million** scam calls and **140 million** scam messages, and shut down **3.475 million** scam websites, reducing the average monthly volume of scam numbers by **39%** year-on-year, maintaining our leadership position in the industry in terms of effectiveness of similar operations.

“Modem Fraud Crackdown” Operation

Using our independently developed GoIP monitoring and early-warning platform, we followed the latest trends and features of “simple networking GoIP” and “fixed-line GoIP”, and carried out cross-provincial data integration, analysis and sharing. We assisted local public security authorities in dismantling **2,516** fraud rings across the country, seizing **9,749** “GoIP and modem pool” devices and arresting **6,734** suspects. Those remarkable results earned us **7** out of the top 10 places in the “Modem Fraud Crackdown Heroes List” published by the MIIT.

“Peace-of-Mind” Operation

We furthered cooperation with the police and brought fraud awareness campaigns to the front lines. Internally, we compiled the *Warning and Education Case Studies* and provided training for front-line employees, recording **1.14 million** participations; externally, we focused on raising public awareness and early-warning, assisted **12,761** vulnerable rural grassroots grids to carry out fraud awareness campaigns and sent **2.77 billion** early-warning messages.



Case Forging a “long tassel” to squash SMS “dark market”

To effectively prevent and control SMS violations, China Mobile built a “Long Tassel System” that targeted SMS offenders. Leveraging SMS big data and the machine learning capabilities of the Jiutian platform, the system replaced traditional manual SMS management with smart monitoring, enabling rapid identification and proactive early-warning of SMS violations. Since the system was launched, more than 6,000 problems under 22 categories such as business violations and equipment defects have been identified and resolved, covering 337 prefectural and municipal cities in 31 provinces nationwide. In addition, China Mobile continued to amplify the value of the “long tassel” by adopting it in a wider range of scenarios. For example, we created the first “Water Room” (a new type of crime ring that is specifically responsible for laundering stolen money) identification algorithm in China to aid in anti-fraud efforts, which addressed public security authorities’ need for tools for identifying “water rooms”.



Case Innovating network information security intelligence management and strengthening network information security governance

Through an innovative move to apply online public opinion monitoring to network and information security governance, China Mobile built its own network big data intelligence collection and analysis platform, and achieved dynamic monitoring, automatic tracking, real-time sharing of network-wide security threat information with customization options. The result was a new type of one-stop, all-round and digital intelligence management system. Since its launch, the system has provided 24/7, all-encompassing service support, forming a closed loop from “information identification” to “handling and feedback”, effectively enhancing our risk management capabilities.

The system enabled pre-event management of network and information security incidents by allowing them to be discovered 2 to 7 days before risks circulated widely across existing networks and ahead of user complaints. Since its launch in 2021, the system has assisted with intercepting a total of 1,131,700 pieces of harmful information, reported more than 1,200 incidents such as network attacks, discovered 1,267 risk clues, and accurately shared intelligence information on more than 16,000 occasions. We have also compiled more than 300 typical case studies under four categories such as telecom network fraud, network attacks and operator offences.

► Creating a clean and bright cyberspace

China Mobile has always cared about the psychological health and network security of its young and teenage users. In 2022, the Company established a comprehensive control mechanism that covered all platforms to prevent underage internet misuse and other violations. We instituted mandates for copyright, approval number, content security audits of content, real-name authentication, and an adolescent anti-addiction mechanism on our 5G cloud game platform. We took concrete actions to ensure that instances of non-compliance that could compromise the health and safety of minors when using the products and services were kept to a minimum and effectively addressed.

Anti-addiction: We launched the teenage mode on our MIGU Music, MIGU Video, and MIGU Reading platforms and introduced real-name authentication and an anti-addiction policy on MIGUPlay to impose a time limit and restrict content access for teenage users.

Strict audits: We conducted strict filtering and screening of content harmful to teenagers, and promptly blocked all violating websites. MIGU Video specifically offered an option for reporting “content harmful to teenagers” in the reporting center to strengthen the reporting and handling of such content and to create a clean and bright cyberspace for teenage users. In 2022, we proactively dial-tested more than 3.42 million domain names with suspected pornographic contents, handled more than 18,000 domain names with suspected pornographic contents based on customer reports, and verified and blocked more than 660,000 domain names with pornographic contents.