## sustainability report 2024

(C



CHINA UNICOM (HONG KONG) LIMITED HKEx: 762

\$

(((Q)))

**L** 

# Leading a Fabulous Digital Future with Integrated Innovation

Service Innovation

(Ai)

**Technology Innovation** 

**Network Innovation** 



## FORWARD-LOOKING STATEMENTS

Certain statements contained in this report may be viewed as "forward-looking statements". Such forward-looking statements are subject to known and unknown risks, uncertainties and other factors, which may cause the actual performance, financial condition or results of operations of the Company to be materially different from any future performance, financial condition or results of operations implied by such forward looking statements. In addition, we do not intend to update these forward-looking statements. Neither the Company nor the directors, employees or agents of the Company assume any liabilities in the event that any of the forward-looking statements does not materialise or turns out to be incorrect.

## **CONTENTS**

## 04 Message from Chairman

06	About China Unicom	Advance network innovation and strengthen the construction of new infrastructure	
06	Company Profile	Comprehensively strengthening the construction of new infrastructure	11
06	Corporate Strategy	Enhancing the operational efficiency of new infrastructure	13
06	Corporate Culture	Advance technology innovation and accelerate the	
06	Corporate Governance	integrated innovation of digital technologies	15
	Sustainable Development	Building technological innovation strength	17
85	Governance	Upgrading digital intelligence operation capabilities	19
		Advance services innovation and accelerate the pace	
85	Sustainability Development System	of digital and real economy integration	21
85	Sustainable Development Strategy		
86	Important Issue Management	Services innovation in Connectivity and Communications	23
87	Communication with Stakeholders	Services innovation in Computing and Digital Smart Applications	25
90	Appendices	Hundredfold dedication to serving customers	31
50	Аррениюсо	Delivering value through brand strengthening	34
90	Key Performance	Persist in green coordination, co-build and co-share	
90	Operations and development	integrated innovation achievements	35
90	Network capabilities		
90	Commitment in major assurance initiatives	Focusing on promoting coordinated development	37
90	Independent innovation	Accelerating the promotion of green development	42
91	Customer service	Serving the joint development of the "Belt and Road"	50
91	People-oriented	Jointly building a cooperative ecosystem	54
92	Low-carbon development	Continuously enhancing people's well-being	58
92	Compliance management	Caring for the well-being of the employees	62
92	Community responsibility	Strengthen security support to consolidate the	
93	Honours and Recognition	foundation for high-quality development	69
93	Description to the Report		
94 99	Indexes Feedback	Safeguarding cyberspace security	71
99	TECUDALK	Developing the cybersecurity industry	74
		Preventing and mitigating major risks	76
		Feature Story 1: A Century of Legacy, Thirty Years of	
		Newness	81

Note: Please refer to the 2024 annual report for the details of Corporate Governance Report.

## **Message from Chairman**

Focusing on network innovation, solidifying the digital foundation of the economy and society. China Unicom resolutely should red the mission and responsibility of building Cyber Superpower and Digital China, accelerated the construction of intelligent and comprehensive digital information infrastructure, and built a robust information channel for economic and social development. The Company strengthened the infrastructure of Connectivity and Communications, with a cumulative construction of over 1.375 million 5G mid-band base stations, accelerated the large-scale application of 5G-A, achieved gigabit coverage in developed towns and above, steadily advanced the construction of ten-gigabit cities, promoted the integration of terrestrial, submarine, and air networks, helped narrow the digital divide, and enhanced customer service experience. We comprehensively undertook the "Eastern Data and Western Computing", constructed a new pattern of "Computing and Digital Smart Applications" infrastructure with comprehensive coverage, intelligent upgrades, high efficiency and energy saving, and smart security. We established over 300 computing power resource pools, with cloud pools covering more than 270 cities. We developed two clusters with over 10,000 Al accelerators in Shanghai and Hohhot, accelerated the construction of the "New Eight Verticals and Eight Horizontals" backbone optical cable network, and created a high-throughput, high-performance, and highly intelligent computing power Al Network (AlNet), to solidify the foundation of "Computing and Digital Smart Applications" for "Digital China". We accelerated the global network infrastructure "hardware connectivity", with international submarine cable resource capacity reaching 100T, newly established Qingdao and Haikou international exchanges, network resources accessible in 80 countries and regions worldwide, enhancing our global intelligent computing deployment to better serve the high-quality joint development of the "Belt and Road". We continuously consolidated the "Chief Security Officer" brand image, successfully completed the communication support tasks for 127 major national events, actively participated in emergency rescue operations for Typhoon "Yagi", the breach of Dongting Lake in Tuanzhou Dike, Huarong County, Hunan, and the heavy rain and floods in Huludao, Liaoning, setting up a communication "lifeline" for the affected people.

## Focusing on technology innovation, accelerating the development of new productivity.

China Unicom fully plays its role as a main body of technological innovation, promotes the integrated development of technological and industrial innovation, facilitates the commercialization of technology, the marketization of products, and the scaling of markets, accelerating its transformation into an important component of the national strategic technological strength. We deeply implemented the central enterprise industry renewal action and the future industry launch action, bravely undertook the important task of building "two chains and two places", continuously promoted the construction of a modern industrial chain leader in network security, established a network security industry fund, and achieved excellent results in the chain leader performance evaluation by the SASAC of the State Council; accelerated the construction of leading enterprises in artificial intelligence chains, launched the advanced performance, proprietary and controllable UniAl foundation models, created industry models understanding customers, and promoted the innovative, secure, and inclusive development of artificial intelligence; created a source of original technologies for the next-generation internet, completed the industry's first ultra-long-distance lossless transmission live network verification; created a source of original technologies for big data, strengthened the dual leadership of technology and market in providing credible data service supply, empowering economic operations, social governance, and livelihood security to achieve positive results. The efficiency of technological innovation continued to improve, with the intensity of R&D expenditure exceeding 4%. The Company has taken the lead in the completion of 40 international standards, with 9,397 effective patients. One project won the first prize of National Science and Technology Progress Award, and two projects won the second prize of National Technological Invention Award. We established innovation platforms

## ßß

The year 2024 marks the 75th anniversary of the founding of New China, and it is also an important year for China Unicom to continue to strive for a new start after A Century of Legacy, Thirty Years of Innovation. China Unicom conscientiously implemented the important instructions and directives of General Secretary Xi Jinping, actively served the national strategy, and earnestly fulfilled social responsibilities. It took proactive actions in the construction of Cyber Superpower, Digital China, and Technology Superpower, actively undertook responsibilities in rural revitalization, communications support missions, and flood and typhoon emergency services, and made efforts to resolve risks, optimise deployment, and innovate development work. Its core functions continued to strengthen, and its core competitiveness kept improving, contributing Unicom's wisdom and strength to promoting Chinese-style modernization through integrated innovation.

# 55

jointly with national laboratories and key universities and co-founded a joint fund with the National Natural Science Foundation to facilitate the smooth transition from the "first kilometre" of technological innovation to the "last kilometre" of achievement monetisation. Continuously upgrading intelligent capabilities, we ranked first in the comprehensive evaluation of digital transformation IOMM for three consecutive years, passed the national standard (DTMM) level four certification for digital transformation maturity assessment with the highest score in the industry, setting a benchmark for digital transformation among central state-owned enterprises.

Focusing on service innovation, continuously enhancing the quality of services for the people. China Unicom practises the people-centred development philosophy, accelerates the integration of digital and real economies, enhances the integrated service supply in connectivity, computing, data, intelligence, and security, continuously meets the growing needs of the public for digital and intelligent life, and promotes the upgrade of the industrial system towards intelligence, greenness, and integration. We adhered to the new integration to expand new scenarios of digital smart life, continuously enriching the product supply such as 5G messages, cloud phones, Unicom UHD, Unicom Cloud Drive, Unicom Housekeeper, etc., the Filial Piety Card and Silver Age Card packages benefited over 5 million subscribers for the disabled and elderly, empowering information consumption for thousands of households. We assisted the high-quality development of the digital economy, advancing the large-scale application of "5G + Industrial Internet", with over 7,100 5G factories constructed. The Gewu Unilink Industrial Internet Platform has become one of the first national-level A-grade cross-industry and crossdomain platforms, comprehensively empowering the deep and practical advancement of new industrialization. We served digital government construction, creating 57 digital government products and fully supporting the intelligent upgrade of the 12345 hotline. We served digital culture development, creating products such as the large model for museum explanation and the large model for cultural relic revitalization, to promote diverse development of digital culture. We served the construction of a digital society, developed an all-area digital transformation product capability system for cities, providing intelligent solutions for sectors such as education, healthcare, transportation, and emergency management. The China Unicom Digital Village platform covers 260,000 administrative villages, aiding rural revitalization. We served the construction of a digital ecology, promoting the integration of digital intelligence technology with river and lake governance and ecological environmental protection, strengthening the innovative application of energy-saving and carbonreduction technologies, and serving the construction of a beautiful China.

Focusing on deepening reform to stimulate the vitality and

momentum of innovative development. China Unicom has always adhered to the "Two Consistencies", deeply advancing reform to strengthen the enterprise, and promote the formation of production relations more compatible with new quality productivity and continuously enhancing the modernization level of the Company's governance system and governance capability. We comprehensively advanced the reform deepening and enhancement actions, integrated and promoted special actions such as value creation and management enhancement, and received an A grade in the key task assessment of the reform deepening and enhancement actions for central enterprises by the SASAC of the State Council, as well as in the value creation action assessment of central enterprises benchmarking world-class enterprises. We established a collaborative and efficient operational organisation system, accelerated the construction of an independent innovation capability system, and set up innovative entities such as the Data Intelligence Company, Guangdong-Hong Kong-Macao Greater Bay Area Innovation Research Institute, Hong Kong Innovation Research Institute, and Chongqing Rural Revitalization Research Institute. Four professional subsidiaries have been recognised as national level "Little Giant" enterprises specialising in niche markets. We continuously improved the modern corporate system, the standardisation and effectiveness of the subsidiary's board of directors have been continuously enhanced, and it has been rated as excellent for four consecutive years in the board construction assessment by the SASAC of the State Council. We improved the market-oriented operating mechanism, deeply advanced the reform of three systems, established a high-level talent echelon, streamlined promotion and incentive channels, enhanced employees sense of happiness and fulfilment, and formed a community of shared development between the Company and employees.

The year 2025 marks the conclusion of the 14th Five-Year Plan and the planning year for the 15th Five-Year Plan. China Unicom will adhere to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, thoroughly implement the important instructions and directives of General Secretary Xi Jinping, and earnestly fulfil the work requirements of Premier Li Qiang during his visit symposium. It actively serves the national strategy, courageously acts as the leading contributor of digital information operation and services and the pioneer of digital technology integration and innovation, deeply implements the integrated innovation strategy, strives to make greater strides in promoting high-quality corporate development, accelerates its transformation into a world-class technology service enterprise with global competitiveness, and makes new contributions to the construction of Cyber Superpower and Digital China.

Chairman of China Unicom (Hong Kong) Limited

March 2024

## **About China Unicom**

## Company Profile

China Unicom (Hong Kong) Limited ("China Unicom" or the "Company") was incorporated in Hong Kong on 8 February 2000 and listed on the New York Stock Exchange<sup>1</sup> and The Stock Exchange of Hong Kong Limited ("the Hong Kong Stock Exchange") on 21 June 2000 and 22 June 2000 respectively. The Company was included as a constituent stock of the Hang Seng Index on 1 June 2001 and merged with China Netcom Group Corporation (Hong Kong) Limited on 15 October 2008. China Unicom establishes branches in 31 provinces in China (including autonomous regions and municipalities) and multiple countries and regions overseas. The Company's leading new infrastructure and efficient customer service system covers China and connects to the world. The Company was voted as "Asia's Most Honored Telecom Company" in 2024 for the ninth consecutive year by Institutional Investor.

1 The Company's ADSs were delisted from the New York Stock Exchange on 18 May 2021. For details, please refer to the announcement of the Company dated 23 July 2021.

## Corporate Strategy

China Unicom bravely undertakes the mission and tasks of the new journey of the new era, with established presence in the network information industry. We focus on constructing Cyber Superpower and Digital China as our main responsibilities, and we expand Connectivity and Communications and Computing and Digital Smart Applications as our main businesses. We insist on strengthen and solidify, preserve and innovate, and integrate and open. We fully implement the strategy of integrated innovation. Through the integration of digital intelligence and digital reality, the Company promotes the integrated development of technological and industrial innovation, advances network innovation, technology innovation, and service innovation, deeply implements the five strategies to build a strong enterprise, i.e. via technology, talent, reform, digital intelligence, and brand, in order to enhance core functions, improve core competitiveness, build differentiated advantages, take greater strides in promoting high-quality enterprise development, and accelerate becoming a world-class technology service enterprise with global competitiveness.

## Corporate Culture

China Unicom plays the role of the leading contributor of digital information operation and services and the pioneer of digital technology integration and innovation. It nurtures an excellent corporate culture and consistently promotes the core values of "Customer-oriented, Employee-friendly, Attentive to quality service, Inherently innovative, Proud of endeavours, Adhering to integrity". It also adheres to the work style of "Rigorous, Pragmatic, Skillful, Meticulous, Efficient". It units development efforts to shape a positive corporate culture.

## Corporate Governance

## Shareholding Structure



Shareholding Structure Chart of China Unicom

## Standardising Board governance

The Board of Directors of China Unicom is committed to maintaining high standards of corporate governance (including information disclosure) and recognises that good corporate governance is vital for the long-term success and sustainability of the Company's business. As a company incorporated in Hong Kong, the Company adopts the Companies Ordinance (Chapter 622 of the Laws of Hong Kong), the Securities and Futures Ordinance and other relevant laws and regulations as the basic guidelines for the Company's corporate governance. As a company listed in Hong Kong, its current Articles of Association fully complies with the regulatory requirements of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited. These rules serve as guidance for the Company to improve the foundation of its corporate governance, and strives to meet the relevant requirements of international and local corporate governance best practises. There were no instances of any violation of listing laws and regulations by China Unicom in 2024.

## Composition and Functions of the Board of Directors and Management

To serve the best interests of the Company and its shareholders, the Board of Directors of the Company is responsible for reviewing and approving major matters of the Company, including, amongst others, business strategies and budgets, major investments, capital market operations and mergers and acquisitions. It is also responsible for supervising risk management and internal control, approving environmental, social and governance strategies, and reviewing and approving the announcements periodically published by the Company regarding its business results and operating activities. In addition, the Board of Directors has overall responsibility of environmental, social and governance strategies and reporting. There are three Board committees under the Board, namely the Audit Committee, the Remuneration Committee and the Nomination Committee, each of which has a written charter, which is available on the websites of the Company and the Hong Kong Stock Exchange.



Chen Zhongyue Chairman and Chief Executive Officer



Jian Qin Executive Director and President



Wang Junzhi Executive Director



Tang Yongbo Senior Vice President



Li Yuzhuo Executive Director and Chief Financial Officer



Chung Shui Ming Timpson Independent Non-executive Director



Wang Limin Senior Vice President

Law Fan Chiu Fun

Independent Non-executive

Fanny

Director



Hao Liqian Senior Vice President



Fan Chun Wah Andrew Independent Non-executive Director



Cheung Wing Lam Linus Independent Non-executive Director

Note: Changes in the composition of the Board and the management during the year 2024 and up to the date of this report.

Jian Qin (appointed as Executive Director and President on 10 April 2024); Fan Chun Wah Andrew (appointed as Independent Non-Executive Director on 10 April 2024); Wang Wai Ming (resigned on 10 April 2024); Ha Biao (resigned on 1 April 2024); Liang Baojun (resigned on 23 May 2024); Wang Limin (appointed as Senior Vice President on 5 July 2024); Hao Liqian (appointed as Senior Vice President on 4 September 2024); Cao Xingxin (dismissed on 29 September 2024).

#### Board diversity and independence

The Board comprises executive Directors and independent non-executive Directors. The Board of Directors comprises experts from diversified professions such as telecommunication, technology, finance, banking, investment and management, and is diversified in terms of gender, age, duration of service, educational background, professional experience, etc., which contributed to the enhanced management standard and more regulated operation of corporate governance of the Company, and results in a more comprehensive and balanced Board structure and decision-making process.

The Board currently comprises eight members, consisting of four executive Directors and four independent non-executive Directors. The Company has established various channels for independent non-executive Directors to express their views in an open and honest manner and, if necessary, in a confidential manner. The independent non-executive Directors have been making positive contributions to the development of the Company's strategies and policies through independent, constructive and informed advice. Apart from the regular Board meeting, the Chairman meets annually with independent non-executive Directors, without the presence of other Directors, which further promotes the exchange of diversified views and opinions. These views and opinions facilitate the Board in making their decisions in the shareholders' best interests. All independent non-executive Directors have confirmed their independence to the Company upon their appointment and annually.

#### **Board election**

In order to ensure a standardised and transparent process for the nomination and election of Directors, the Company has established the Nomination Committee and formulated a nomination policy. With respect to the nomination and appointment of new directors and senior management members and the succession planning for Directors, the Nomination Committee would, after considering the Company's need for new directors and/or senior management members, identify a wide range of candidates from within the Company and the human resources market and make recommendations to the Board. The Company has also adopted a policy concerning diversity of board members. The Company understands and firmly believes in the numerous benefits of board member diversity, and recognises that increasing diversity among board members is a factor in maintaining a competitive advantage. The Nomination Committee will consider candidates on merit against objective criteria and with due regard to the benefits of diversity on the Board, including but not limited to gender, age, cultural and educational background, professional experience, skills, knowledge and duration of service. After having obtained the consent from candidates in relation to the relevant nomination and based on the Company's actual needs, the Board would convene a meeting, attendees of which include non-executive Directors, to consider the qualifications of the candidates. The Directors of the Company (including non-executive Directors) are not appointed for a specific term. Each director shall retire by rotation at least once every three years, and pursuant to the Company's articles of association, one-third of the directors shall retire from office by rotation and shall be eligible for re-election at each annual general meeting. The Board and the Nomination Committee review the board diversity policy and its implementation and effectiveness annually to ensure that the board diversity policy continues to meet its objectives. Currently, the Company's Board comprises eight membe

#### **Board remuneration management**

The Company has adopted a remuneration policy. The proposed remuneration package of directors of the Company will be determined by the Remuneration Committee, subject to approval by the Board and in compliance with applicable laws, regulations and policies, and taking into account the responsibilities of such person in the Company, his experience and performance as well as the prevailing market conditions. The remuneration package for executive Directors includes salary and performance-linked annual bonuses. The remuneration of executive Directors is determined by reference to their respective duties and responsibilities in the Company, their respective experience, prevailing market conditions and applicable regulatory requirements while the award of the performance-linked annual bonuses is tied to the attainment of key performance indicators or targets set by the Company. The remuneration of non-executive Directors is determined by reference to prevailing market conditions and their respective responsibilities and workload from serving as non-executive Directors and members of the board committees of the Company.

# Advance network innovation and strengthen the construction of new infrastructure



# Advance network innovation and strengthen the construction of new infrastructure

China Unicom undertakes the significant mission of building a Cyber Superpower and Digital China, adhering to the principles of moderate advancement, scientific planning, and coordinated development. It accelerates the construction of network infrastructure and actively plans computing power infrastructure to lay a solid digital foundation for Chinese-style modernization.

## Measures adopted in 2024

- The Company adhered to co-build co-share, precisely strengthened and filled blind spots, enhanced the breadth and depth of mobile network coverage and user perception. Broadband network capability continued to improve, completing gigabit deployment in developed towns and above areas.
- The Company promoted the construction of computing and digital smart application capabilities, achieving a nationwide integrated deployment for IDC, completing the basic intelligent computing deployment of bases and highlands, and establishing a 400G computing power intelligent network AlNet.
- The Company steadily advanced the "Three-Year Action Plan for Mobile Network Quality Improvement" and the "Special Action for Network Operation Quality Enhancement", launched a three-year special action for ultra-lean networks, and achieved quality and efficiency improvement in network operation and maintenance through intelligent network operations.
- The Company gradually expanded the deployment of international network infrastructure, broadened overseas infrastructure connections, accelerated the deployment of submarine cables in key regions, and strengthened the deployment of international intelligent computing capabilities.

## Actions to be taken in 2025

- The Company will continuously strengthen the construction of new infrastructure, accelerate the reshaping and renewal of the backbone optical cable network, promote the sharing and upgrade refarming of 800/900MHz low-band frequency, continuously enhance gigabit capability, and steadily advance the demonstration of ten-gigabit cities.
- The Company will continuously improve the deployment of its computing power system, serve the development of artificial intelligence, create more technologically advanced, green and low-carbon new data centres, and build an end-to-end integrated computing power intelligent network AINet.
- The Company will promote the optimisation of broadband network quality to achieve industry-leading broadband network satisfaction, deepen the special management of hidden dangers and faults, establish a network-side perception optimisation management system, and ensure operational safety.
- The Company will, in conjunction with the commissioning and operation of the Qingdao exchange, Hainan exchange, and new submarine cables, continuously optimise the traffic flow from domestic regions to East Asia, Southeast Asia, and North America to reduce domestic detours; and actively promote the construction of new channels in key directions such as Europe, Japan, and Singapore.

## Comprehensively strengthening the construction of new infrastructure

China Unicom continues to strengthen the construction of new infrastructure, accelerating the development of intelligent computing centres to create a high-throughput, high-performance, and highly intelligent computing power Al Network; deepening co-build co-share to advance air-ground integration, creating an agile, efficient, and intelligent ubiquitous smart network; and enhancing the construction of international submarine and land cables to promote global network interconnection.

## Strengthening the infrastructure of Connectivity and Communications

China Unicom accelerates the construction of the Connectivity and Communications network, continuously enhances mobile network coverage, speeds up the construction of high-speed broadband networks, meticulously builds the premium government-enterprise network, and advances the integration of terrestrial, submarine, and air networks.

## Strengthening mobile network coverage

China Unicom continues to advance the construction of a mobile network with broader coverage, stronger capabilities, better quality, and improved experience, consistently deepening the coordinated development of 5G/4G IoT to enhance mobile network coverage and subscribers' perception.

• The Company enhances the breadth and depth of network coverage, with continuous 5G coverage completed in towns and above regions. 5G-A carrier aggregation achieves typical coverage in 300 cities, RedCap achieves large-scale deployment in 100 cities. • The monitoring report released by the China Academy of Information and Communications Technology shows that China Unicom's 5G network speed maintains an industry advantage, and its 4G network speed is industry leading.





Over **2.3** million of usable 4G mid-band base stations Total number of IoT terminal connections exceeded **620** million

Shanghai Unicom and Shanghai Metro have joined forces to comprehensively enhance 5G network coverage, achieving full 5G coverage across multiple metro lines. They have innovatively applied 5G-A technology to achieve an ultimate downlink experience speed, with peak speeds exceeding 3Gbps, significantly improving the normal perception rate of the metro network. This has resulted in a 100% 5G network residency rate and voice call connection rate within the metro system, delivering an exceptional communication experience.



Shanghai Metro Wireless Network Smart Operation System

#### Upgrading broadband network capabilities

China Unicom continues to enhance high-quality broadband network coverage, promoting the comprehensive realisation of gigabit broadband networks and steadily advancing the construction of tengigabit cities.

• Broadband covered 560 million residential units, of which gigabit fibre network covered 430 million residential units; the broadband experience download speed increased by 18.4% year-on-year.

• The Company won the "Premium User Experience with Optical Broadband Award 2024" at the Mobile World Congress (MWC).

## Building a premium government-enterprise network

China Unicom continues to advance the construction of a government-enterprise network offering ultrawide coverage, ultra-large bandwidth, ultra-low latency, and ultra-high reliability for an intelligent experience, achieving continuous improvement in coverage and leading the industry in scale.



Premium User Experience with Optical Broadband Award 2024

• The Company cumulatively established over 40,000 commercial 5G application projects, serving over 16,000 5G private network customers, covering 80 major categories of the national economy.

• OTN coverage access points reached 45,000, with intelligent OTN products fully launched, providing end-to-end automatic service activation capability; the coverage rate of smart metropolitan area network aggregation areas reached 100%, and the coverage rate of ToB nodes exceeded 80%.

• The Company promoted the integrated development of satellite Internet, low-altitude Internet, and terrestrial networks, providing industry terminals with direct satellite connections and emergency communication services for urban low-altitude areas, remote regions, maritime, aviation, and other sectors.

## Strengthening the infrastructure of Computing and Digital Smart Applications

China Unicom has established a solid foundation for Computing and Digital Smart Applications capabilities. As a pioneer and advocate of computing power network, it fully undertakes the national "Eastern Data and Western Computing" project, continuously building computing network infrastructure, focusing on the development of the next-generation Internet, advancing towards the integration of general computing, intelligent computing, supercomputing, and quantum computing, and creating a new paradigm of intelligent computing infrastructure that is comprehensively covered, smartly upgraded, highly efficient, energy-saving, and securely intelligent.

## Strengthening the construction of intelligent computing centres

China Unicom accelerated the construction of data centres and core node intelligent computing centres, fully ensuring resource security in hotspot areas and continuously enhancing the scale of intelligent computing.

• The Company continuously improved its integrated computing power deployment, establishing over 300 computing resource pools, with cloud pools covering more than 270 cities.

• The Company conducted digital intelligent upgrade of data centres, with the total scale of IDC resources across the network exceeding 420,000 cabinets, creating a well-structured, abundant, and green low-carbon computing infrastructure base.

• The Al computing power has formed a base + highland deployment, creating two clusters with over 10,000 Al accelerators in Shanghai and Hohhot, with a total computing power scale exceeding 17 EFLOPS.

Lingang International Data Port is the core hub of China Unicom's intelligent computing deployment, dedicated to building a high-level China Unicom computing power cluster hub node and a high-standard national-level cross-border data flow hub node. It possesses the capability for ultra-large-scale intelligent computing cluster deployment and has received the first batch of domestic 5A-level intelligent computing centre computing power performance certification in Shanghai.



China Unicom Lingang International Data Port

#### Strengthening intelligent computing network construction

China Unicom continued to strengthen the construction of the national backbone network, accelerated the deployment of high-speed interconnection channels, and promoted the connection of the computing power Al Network to more computing hub nodes, laying a solid foundation for the construction of Digital China.

• The Company accelerated the deployment of the "New Eight Verticals and Eight Horizontals" backbone optical cable network, implemented large-scale deployment of G.654E new optical cables between national hub nodes, established foundational capabilities for massive data transmission, and strengthened the base for high-speed computing networks.

• The Company focused on national hub nodes and relied on the backbone optical cable network, and the initial construction of a dual-plane heterogeneous 400G ROADM network has been achieved to enable massive data transmission.



China Unicom launched the "computing power Al Network AlNet"

• The Company established a low-latency network for metropolitans, deploying 2×200G ultra-high-speed interconnection channels between national hubs to meet the demands for ultra-large capacity, ultra-low latency, and ultra-long-distance transport capacity.

## Strengthening global network infrastructure

China Unicom, guided by market demand, expanded the breadth of international network coverage and network capacity, enhancing subscribers' perception.

## Strengthening international infrastructure connections

China Unicom continued to optimise its international network, accelerated the construction of the "Belt and Road" Digital Silk Road, and strengthened the global connectivity infrastructure. The Company strengthened strategic assurance for the construction and operation of international submarine and terrestrial cables and accelerated the evolution towards target architecture. We fully enhanced network accessibility and routing diversity, continuously strengthened network service capabilities, and actively supported Chinese enterprises going global and foreign enterprises entering the domestic market.

• In 2024, international submarine cable resource capacity reached 100T, up by 13.6% year-on-year.

 The global physical PoP points reached 140, with product PoP capabilities reaching 400, interconnecting with over 140 international internet networks, and the total international interconnection bandwidth exceeding 6Tbps.

Network resources reached 80 countries and regions globally, while mobile roaming services covered 264 countries/regions.

#### Strengthening the deployment of international intelligent computing capabilit

China Unicom adhered to the national strategy, actively engaged in the construction of overseas data centres, continuously improved the deployment of international computing power capabilities, and strengthened resource co-build and co-share with upstream and downstream partners to lay a solid foundation for accelerating the iteration and formation of China Unicom's international computing power product system.

The Company expanded global computing power resources using Singapore, Japan, Malaysia, Indonesia, and Frankfurt as hubs.

The Company utilised its own Ascend intelligent computing capabilities, accelerated the iteration to form a series of computing power
products aimed at the international market.

- Unicom Cloud has achieved deployment in over 330 geographic regions and more than 300 data centres worldwide.
- The Company built a green advanced intelligent computing centre, utilising a smart operation management platform to achieve realtime AI intelligent diagnostics and flexible, precise power allocation, thereby enhancing energy efficiency.

China Unicom (Hong Kong) Tseung Kwan O Intelligent Cloud Data Centre has high-density cabinet capacity reserves, connecting Mainland China through six cross-border networks and extending to over 60 countries and regions. It has obtained certifications such as "BEAM Plus Hong Kong Green Building" and "LEED Gold U.S. Green Energy and Environmental Design Gold Medal".



China Unicom (Hong Kong) Tseung Kwan O Intelligent Cloud Data Centre

## Enhancing the operational efficiency of new infrastructure

China Unicom continued to advance the integration of operations, delivery, support, and services, consistently adhering to a customer-centric approach, enhancing the integration of network R&D and operations, and promoting high-quality network operations.

## Continuously improving network operational efficiency

China Unicom conducted refined network operations to continuously enhance network quality; it advanced large-scale ultra-lean networks and digital intelligence operations to improve resource utilisation and network operation effectiveness.

## Enhancing the quality of network services

China Unicom has solidly advanced the "Three-Year Action Plan for Mobile Network Quality Improvement" and the "Special Action for Network Operation Quality Enhancement", achieving continuous enhancement in subscriber perception and effective improvement in production quality and efficiency.

• The good experience rate of voice services increased to 92.7%, and the self-measured satisfaction of fixed broadband network continuously maintained the industry's first place.

 The Company organised and carried out special tasks to tackle broadband network hidden dangers and faults, with significant year-on-year improvements in the number of large-scale faults and fault recovery time.

• With collaboration in terminal, network, business and service, the Company promoted network perception optimization, resulting in a yearon-year reduction of 28% in broadband network complaint calls.

• The Company continually expanded the IP backbone network, with an average annual intranet IPv4 latency of 23.93 ms, maintaining the industry's leading position.

• The Company established a dual closed-loop management process centred on problem-solving for both network-side and customer serviceside, reducing the mobile network subscribers complaint rate by over 40%.

China Unicom Gansu Jiayuguan branch has rationally planned the network lines, actively carried out the rectification of "flying wires", ensuring that they are dismantled wherever possible, streamlined where not dismantled, neatly bundled, and transformed underground as a comprehensive rectification approach to eliminate safety hazards and enhance the aesthetic appeal of the community living environment.



Community after rectification of wires

#### Promoting intelligent network operations

China Unicom continued to strengthen digital intelligence operations, effectively enhancing resource utilisation, and achieving good results in smart network operations.

• The Company empowered the Global Network Operations Centre (GNOC) to enhance monitoring, command, and dispatch capabilities, achieving comprehensive visibility across the entire network and all specialties at a single point, and significantly improving fault handling capabilities for business operations.

• Intelligent energy-saving technologies such as the automatic start-stop of Active Antenna Unit (AAU) and all-time Al energy saving have been launched, improving power-saving efficiency by 30%, with electricity savings exceeding 800 million kWh in 2024.

 China Unicom's "Network Intelligent Operation and Maintenance Robot System" has passed the excellent-level evaluation in the quality domain of intelligent operation and maintenance AlOps, becoming the first company to achieve the excellent level in this domain.



The "Network Intelligent Operation and Maintenance Robot System" has passed the excellent level evaluation in the quality domain of intelligent operation and maintenance AlOps.

## Continuous improvement of the network operation system

China Unicom continued to optimise the network operation system architecture by enhancing organisational structure, establishing an operational system, and constructing a network management and control system, thereby providing a solid foundation for improving network operation efficiency.

• The Company synergistically advanced the optimisation and adjustment of regional structures, strengthened specialised regional management, and gradually implemented the evolution from a "6+3" to an "8+5" structure, forming a new regional structure that was rationally organised and capacity-balanced.

• The Company constructed an integrated and centralised Unicom Cloud and intelligent computing operation system, with a unified service interface.

The Company promoted domestic and international cross-regional resource dispatch, gradually achieving a global integrated network.

# Advance technology innovation and accelerate the integrated innovation of digital technologies



# Advance technology innovation and accelerate the integrated innovation of digital technologies

The integrated innovation of digital technologies is an intrinsic requirement of Digital China. China Unicom courageously shoulders the responsibility and mission of being the frontline troop in the integrated innovation of digital technologies, focusing on elements such as networks, data, and intelligence, implementing technological innovation to achieve "strengthening computing with networks, enhancing intelligence with data, and promoting application through integration".



## Measures adopted in 2024

- The Company undertook major national technological research tasks. We were approved as the original technology source for next-generation Internet and Big Data, coordinating the advancement of related construction and R&D. We became a leading enterprise in the artificial intelligence chain and were approved for 6 tasks in the Ministry of Industry and Information Technology's "Strengthening Long Board" initiative in the artificial intelligence industry chain.
- The Company focused its resources on breakthroughs in core technology research. 53 core technology research projects were initiated in 2024. Several technological achievements such as industry large models, 5G RedCap, and industrial Internet platforms have been realised.
- The Company strengthened the intensity of investment in technological innovation elements and continuously improved the system of scientific and technological talent teams. We made significant breakthroughs in the monetisation of technological innovation achievements and received multiple national-level awards.
- The Company enhanced the integration and innovation of digital technology within the smart operation system and accelerated the empowerment of industry development through digital technology.

## $\widehat{\mathcal{D}}$

## Actions to be taken in 2025

- The Company will strengthen the coordination of R&D budgets, enhance the management of core technology research projects, improve and deepen the mechanism for the monetisation of scientific and technological achievements. We will reinforce the coordination of international and domestic standards and continuously enhance its influence on standards and work effectiveness.
- The Company will focus on continuously increasing the Group's investment in core technology research and development, with a key focus on next-generation Internet, industrial Internet, cloud computing, big data, artificial intelligence, and network security.
- The Company will deepen the development of the scientific and technological innovation talent team and create a talent highland.
- The Company will continuously forge digital operation capabilities such as APP and digital middle platform, enhance the platform capabilities of cloud computing, Big Data, Internet of things, AI, blockchain and security, accelerate the output of digital intelligence capabilities, and expand new development space. We will strengthen data supply and empowerment and promote the circulation of data elements.

## Building technological innovation strength

China Unicom implemented the deployment of Technology Superpower, adhered to promoting industrial innovation through technological innovation, focused deployment on strategic emerging industries and future industries, accelerated the development of new quality productivity, and expedited the advancement of high-level technological self-reliance and self-improvement.

## Promoting high-level technological self-reliance and self-improvement

China Unicom continuously enhanced its technological innovation capabilities, actively undertook major national scientific and technological tasks, and stimulated the vitality and momentum of technological innovation.

## (Focusing on national strategic development of emerging industries

China Unicom, starting from the urgent needs and long-term demands of the nation, actively deployed in strategic emerging industries to support the development of new quality productivity.

• The Company was approved for five major projects by the State-owned Assets Supervision and Administration Commission of the State Council, and the "China Unicom Strategic Emerging Industries 'Hundred Major Projects' Special Action Implementation Plan" was formulated and issued, accelerating the advancement of key projects in emerging industries.

 Next-generation mobile communication: The Company undertook the national key research and development plan project "Research and Application Demonstration of Ultra-low Latency, Ultra-large Connection, Safe and Reliable Industrial Passive Optical Network Architecture and System", developed domestically produced 50G industrial PON system core modules and equipment, and completed the industry's first reliable 50G industrial PON pilot in the Taizhou Chemical Park, Jiangsu.

 Computing Power Network: "Innovation and Application of Computing Power All-Optical Network Technology" was selected as one of the top ten technological advancements in the information and communication field by the China Institute of Communications in 2024.

 Network Security: The Company continuously carried out research and development on independent and controllable core technologies in network security, broke through key "bottleneck" technologies in basic software and hardware, and developed independent innovation achievements such as the Mogong security operation platform, collaborated with multiple enterprises through sharing to drive the development of a self-controllable industrial chain ecosystem.

 Big Data: The original technology source of big data has won multiple awards, including one second prize of Scientific Progress Award by the Chinese Institute of Electronics, one first prize of Provincial Scientific Progress Award, developed the first China-led international standard for big data architecture under ITU-T, one of the top ten landmark achievements at the 2024 Big Data Expo, and was also approved as a Technology Innovation Centre by the Ministry of Culture and Tourism.

 Artificial Intelligence: The Company undertook the Science and Technology Innovation 2030 - New Generation Artificial Intelligence "Intelligent Epidemiological Investigation Research on Public Health Events such as COVID-19 Pandemic" project; and released the China Unicom UniAl Large Model and Applications at the 2024 Mobile World Congress.

 Internet of Vehicles: The Company developed an innovative Internet of Vehicles solution based on IPv6+ and completed live existing network trials in Xiong'an.

Blockchain: The Company undertook the national key research and development project "Research and Development of Big Data Sharing
and Integration Technology and System for Ecological Environment Based on Blockchain", completed the construction of a big data sharing and
integration system for ecological environment based on blockchain. The project's research results and demonstration applications received the
"Data Management" excellent case award from the China National Environmental Monitoring Centre for smart monitoring innovation applications
in ecological environment.

## ( Looking to future technology to cultivate future industries

China Unicom actively deployed in frontier technology areas such as next-generation Internet and next-generation optical networks, accelerating the cultivation of new driving forces and new advantages.

0

• Next-Generation Internet: The Company undertook the role of a source for the next-generation internet, released the "Internet 2030 White Paper" domestically for the first time, completed the world's first over 3,000-kilometre wide-area lossless transmission, developed the world's first online inference AI native router, and completed the initiation of one international standard in the next-generation internet field under the IETF.

• Next-generation optical network: The first IETF standard proposal led by China Unicom, "ACTN Optical Network Control System with Integrated YANG Configuration and Management Functions", has been accepted.

• 6G: Significant progress has been made in standardisation, spectrum allocation, reconfigurable intelligent surface, integrated sensing and communication, high reliability and low latency, and intrinsic security.

 Quantum Information: The Company designed and developed two industry-first "communication and encryption integrated" devices, and conducted application verification in live network environments, which played a good demonstrative role in the integration of quantum security and operator networks. We completed the deployment and testing of quantum secure calls in live networks, achieving the first call connection. We achieved a breakthrough in ITU-T international standards, leading the initiation of one standard.

• Satellite Internet: The Company undertook the national key research and development programme "Air-Ground Integrated Intelligent Networking Technology" project, overcoming core technologies such as flexible slicing in air-ground integrated networking in the satellite internet field. We undertook the national key research and development programme "BeiDou Precision Spatiotemporal Information Perception and Intelligent Service General Basic Platform" project, in which the "Beidou + 5G" perception network tester was selected as an important achievement of the national key research and development programme and the "Beidou Star Kinetic Energy" technology demonstration project.

17

## Building a high-efficiency technological innovation system

## Improving the innovation organisational structure

China Unicom has tailored its technological research capability structure according to circumstances, creating a highland of technological innovation and initially forming a new structure of innovative development that "spreads from points to surfaces, serves the whole nation, and reaches the globe".

The Company strengthened the leading responsibility in the next-generation Internet industry, enhanced leadership in network and
information security technology, implemented the artificial intelligence innovation action plan, and continuously forged advantages in Big Data,
Internet of Things, Internet of Vehicles, and digital intelligence application technology.

• The Company improved the deployment in regional innovation institutes by establishing Rural Revitalization Institute of Digital Industry Co., Ltd., the Guangdong-Hong Kong-Macao Greater Bay Area Innovation Institute, and China Unicom (Hong Kong) Innovation Research Institute Limited, among other innovation organisations.

• The Company improved the deployment of technological research subsidiaries, established China Unicom Data Intelligence Co., Ltd. and China Unicom (Huailai) Big Data Innovation Industry Co., Ltd., paving the way for the innovative application of big data and artificial intelligence.

## Improving the technological innovation mechanism

China Unicom placed great emphasis on the role of technological innovation mechanisms and systems, aiming to establish an efficient technological innovation mechanism to ensure high-quality innovation.

 We established the Company's technology committee, which formulated the Company's technological innovation development plan, focused on the major technological development directions, key research and development projects, and technological innovation strategic planning and consultation, fully leveraging the role of experts in technical review.

• The Company continuously improved the technological innovation system, refined management systems for R&D project management, ecosystem management, technological innovation incentives, achievement management, and technological research talent management.

 The Company further improved the technological innovation platform, which integrated multiple functions such as research and development management, achievements, patents, talents, and strategic emerging industries into one. It unified management and connected with business, initially achieving digitalization of technological innovation management.

Increasing investment in innovation elements

China Unicom increased its investment in technological innovation, expanded the team of high-level technological research talents, and formed a hierarchical structure of high-level talents.

Research and development expenditure amounted to RMB15.926 billion, with an R&D intensity of 4.07%.

• The number of full-time engineering master's and doctoral students in the class of 2025 reached 48, an increase of 60% compared to last year.

A total of 23 people were selected for the superior technology association's youth talent support programme, an increase of 27% compared to last year.

• The number of technological research professionals reached 77, an increase of 22% year-on-year. 9 leading talents and 36 field experts were appointed. 2 individuals were selected as top talents by the State-owned Assets Supervision and Administration Commission of the State Council, and China Unicom Digital Technology Co., Ltd. was selected for the talent highland special action.

## Optimising the monetisation of innovation achievements

China Unicom has established a comprehensive closed-loop management mechanism for the monetisation of achievements and revenue sharing, accelerating the commercialisation of achievements, and rapidly increasing the revenue from self-developed products.

• The Company promoted the industrialization of patents, accelerated the transformation of innovative achievements into actual productivity, and formulated the "China Unicom Patent Transformation and Utilisation Special Action Plan (2023–2025)".

• The Company achieved a breakthrough in standard establishment in the next-generation internet field at IETF, with applications of 193 external patent (an increase of more than ten times compared to 2023), and joined the Avanci 5G patent pool.

• One achievement was selected for the first batch of projects in the Central Science and Technology Commission's Achievement Application Expansion Project List. Three achievements were shortlisted for the finals of the State-owned Assets Supervision and Administration Commission's Yixing Competition. The Company was selected as a pilot for the reform of empowering technological achievements by the State-owned Assets Supervision and Administration Commission of the State Council. Multiple achievements received prestigious domestic and international awards such as the First Prize of National Science and Technology Progress Award, Second Prize of National Technological Invention Award, Top Ten Scientific and Technological Advances in the Information and Communication Field in 2023, and the First Prize of the "Management Science Award" by the Ninth China Management Science Society.



"Key Technologies and Engineering Applications of the Fifth Generation Mobile Communication

## System (5G)" Winning the First Prize of National Scientific and Technological Progress Award

Responsibility performance indicator	2022	2023	2024
Number of patents applied	2,672	4,398	2,071
Number of patents granted	1,666	2,287	1,436
Number of new entries in leading international standards	29	26	40
Number of new entries in leading industry standards	71	35	55

## Upgrading digital intelligence operation capabilities

China Unicom deeply implemented digital intelligence-based corporate development and continuously upgraded its digital intelligence capabilities. The smart operation system extended from points to surfaces, forming a chain, continuously strengthening the advantages of "one China Unicom with integrated capabilities and operating services", setting a benchmark for digital transformation among central enterprises.

## Constantly deepening smart operation

China Unicom continues to upgrade its smart brain capabilities, using digital and intelligent methods to continuously enhance smart operation efficiency.

• Strengthening capabilities and brining up perceptions through five major APPs. China Unicom's app has been revamped, with monthly active users exceeding 100 million; the public and government-enterprise apps have enhanced their ability to resume operations in complex scenarios; the Unicom Network app has completed the integration of over 184 applications; and the office APP supports a mobile office ratio exceeding 90%.

• Controlling risks and improving efficacy through five major operation platforms. The public operation platform completed the integration of customer operation strategies, reaching over 270 million subscribers. The government-enterprise operation platform completed 60 centralised operations including contracts, acceptance, and accounting.

• Strengthening innovation and improving efficiency through five middle platforms. The Company achieved integrated billing for public and government-enterprise sectors, completed the upgrade of the channel centre architecture, and reduced commission calculation time by 35%. We established a geographically distributed dually active core system, ensuring the stability of ultra-large business systems with disaster recovery technology reaching a new level. The internal application adoption rate of Unicom Cloud reached 89.3%, achieving breakthroughs in full-stack information innovation adaptation.





Awarded 2 TeleManagement Forum (TMF) Catalyst Awards





China Unicom adheres to empowering frontline production with intelligent, agile, and efficient smart operations, continuously embedding digital intelligence technology into key aspects of production operations. Unicom Online and the Software Research Institute were successfully selected as pilot enterprises for the digital transformation of state-owned enterprises.

Intelligence in production operations	Digital technology provides insight into the key stages of broadband installation, relocation, repair and delivery, reducing broadband delivery time by 15 hours. The government-enterprise "Three Comprehensive Views" empowers key customer data to be fully viewed at a glance, enriching industry labelling capabilities.
Agility in customer service	The Company established a customer service large model, implemented in 13 production scenarios, with smarter intelligent customer service, achieving an intelligent service satisfaction rate of over 84%, leading among operators in hotline intelligent service levels.
Efficiency in enterprise management	The Company successfully completed multiple digital intelligence pilot projects of the State-owned Assets Supervision and Administration Commission of the State Council with high quality, maintaining a leading position in the digital intelligence capability of state-owned assets supervision; developed a digital intelligence financial platform integrating six major operational scenarios including data, knowledge, and risk. Digital employee capabilities have been implemented in a total of 6,138 scenarios, saving 439,800 person-days, and the effect of empowering the front line to reduce burdens is evident.

## Deepening data governance and process governance

China Unicom insists on strengthening data supply empowerment and improving process governance.

 The Company strengthened data supply and empowerment. We promoted internal circulation of corporate data, with an average monthly data sharing of 192 trillion entries to subsidiaries. We built a high-quality Al dataset of 30.8TB and alleviated burdens at the frontline level by systematising support for over 3,000 manual reports.

• The Company promoted the digital intelligence transformation of process governance. Digital intelligence capabilities empowered headquarters and provincial process operations. The centralised government-enterprise middle platform's intelligent scheduling saved 1,200 person-months. The delivery time for public broadband business IOM was reduced by 28.5%, enhancing broadband operational efficiency and quality. The Company's process mining application capability and effectiveness have been certified at the advanced level (Level 3), leading the industry in governance standards.

Shanghai Unicom's "Digital Super Factory" operation system based on Al+ middle platform operation: By applying Al technology. focusing on aspects such as touchpoint ordering, middle platform acceptance, and billing services, it creates capabilities such as streamlined acceptance, intelligent order review, intelligent scheduling, automated production, and intelligent billing. It achieves automatic production of over 80% of business orders, with cumulative annualised savings in production and operation costs exceeding RMB4 million.



"Digital Super Factory" Operating System

# Advance service innovation and accelerate the pace of digital and real economy integration



## Advance service innovation and accelerate the pace of digital and real economy integration

## 

China Unicom continuously promotes the coordinated development of Connectivity and Communications and Computing and Digital Smart Applications businesses, deepens product innovation, and constantly improves service operation levels, serving thousands of households and empowering thousands of industries, driving Chinese-style modernization through digitalization, networking, and intelligence.

## Measures adopted in 2024

- The Company upgraded the Whole House Optical Broadband product, comprehensively enhancing the perception of network connection, ecosystem connection, and terminal connection.
- The Company continuously promoted the deep integration of digital technology with the "five-inone" construction of economy, governance, culture, society, and ecological civilization, accelerated the innovative application of digital technology, and drove the development of industrial digitalization.
- The Company upgraded the high-quality service action plan, continuously consolidating the large service system of network, business, and service linkage.
- The Company accelerated brand building, ranking 2nd among central state-owned enterprises and 1st in the telecommunications industry in the benchmarking list of brand building capabilities by the State-owned Assets Supervision and Administration Commission of the State Council.

## Actions to be taken in 2025

- The Company will focus on Unicom Cloud Drive, Unicom Housekeeper, Unicom Cloud Phone, Unicom Cloud Computer, and Unicom Ultra HD to enhance product development synergy and inject new impetus into the acceleration of the digital life industry development.
- The Company will build high-quality data sets, deeply cultivate data-intelligence integration application scenarios, and enhance data-intelligence operational capabilities.
- The Company will continuously enhance the quality of customer service to build a competitive advantage in differentiated services.
- The Company will play a leading role in the brand, enrich the brand connotation, and enhance brand value.

## Service innovation in Connectivity and Communications

China Unicom's Connectivity and Communications business further enhances service quality, providing subscribers with a faster and more stable communication experience, creating a good smart living.

## Brightening up intelligent and happy living

China Unicom's "Unicom Smart Home" brand is committed to creating comprehensive information solutions for smart homes, achieving the digitalized, intelligent, and ecological transformation of home services, allowing people to enjoy a fabulous digital and intelligent life. It focuses on developing key products such as Unicom Whole House Optical Broadband, Unicom Ultra HD, and Unicom Housekeeper. Through the Unicom Smart Home APP platform, it builds an open and shared ecosystem of pan-intelligent terminals, providing all-scenario whole-home intelligent services.



Unicom's three gigabit services provide gigabit 5G, gigabit broadband, and gigabit Wi-Fi

## Whole House Optical Broadband

China Unicom has comprehensively upgraded the Whole House Optical Broadband, adopting the new generation FTTR networking technology, replacing network cables with optical fibres, and extending them to every room to meet the internet needs of household users for "high speed, low latency, and seamless roaming". By deploying optical networking terminals and combining dual-band Wi-Fi, comprehensive ultra-gigabit Wi-Fi coverage throughout the home is achieved, leading to a complete upgrade in network connectivity, ecological connectivity, and terminal connectivity.

#### **Unicom Housekeeper**

The Company built the Unicom Housekeeper Video Cloud Platform, utilising intelligent camera terminals to collect audio and video information from the surrounding environment, providing users with functions and services such as cloud storage and playback of surveillance videos, alarm message queries, and Al applications, to meet the needs of home care while away.



Application scenarios of Unicom Housekeeper

双向通过 画面巡相

## Unicom Ultra HD

The Company provided a television large screen business based on quality broadband services, offering users hundreds of premium channels including CCTV and satellite TV, as well as popular films and TV series, enriching users' entertainment needs.

## Whole-house intelligence

The Company uses the Unicom Smart Home APP as an entry point to construct a Unicom Smart Home ecosystem, enabling users to bind, control, share, and receive alerts for a full range of terminals such as smart speakers, smart door locks, smart security sensors, and health devices, injecting new momentum into the realisation of digital life.



Communication System" won the first prize of the 2024 Science and Technology Award from the China Institute of Communications



China Unicom was awarded the "2024 Outstanding Digital Home Operator" by the World Broadband Forum

## Enriching integrated product supply

China Unicom continuously optimises and iterates integrated products, actively exploring in the fields of digital and intelligent life products and services, enhancing product experience to better meet the people's needs for high-quality digital and intelligent life.

## Unicom Cloud Phone / Cloud Computer

Cloud phones provide users with secure, reliable, and compatible cloud-based virtual phone services, enabling all regular phone functions to be performed on the cloud phone. Cloud computers offer users a cloud-integrated, multi-terminal 2C2H experience for both work and entertainment, allowing one device to function as a computer, tablet, phone, and hard drive all in one.

## Video ringtone

China Unicom upgraded AI ringtone by integrating AI + digital avatar technology, launching ten AI functional products including AI Singer, AI Dance King, and AI Animation, comprehensively leading content creation into a new era of AI. By integrating diverse communication services such as video ringtones, video business cards, and XR calls, a one-stop AI communication application platform is constructed to meet users' personalised communication needs.

## **Unicom Satellite**

Unicom Satellite provides users with stable communication services, ensuring customers' communication needs are met in areas without network coverage.

## Unicom Cloud Conference

Unicom Cloud Conference Service is based on Internet video conferencing, augmented with 5G new communication capabilities, providing high-quality, professional-grade, and convenient video conferencing solutions for individual users, and offering integrated services of cloud network + 5G new communication + high-definition video for enterprises.

## **Unicom Security Manager**

By integrating the anti-fraud large model, we provide users with the ability to identify and block risky numbers, which not only enhances their own communication security assurance but also offers their family members safety communication protection and anti-addiction capabilities, ensuring the communication security of the entire family.



Video ringtones offer multiple themes for selection

## Service innovation in Computing and Digital Smart Applications

China Unicom is resolutely implementing the overall planning and deployment of Digital China construction, continuously promoting the deep integration of digital technology with the economy, governance, culture, society, and ecological civilization construction in a "five-in-one" manner. It accelerates the innovation and application of digital technology, driving changes in production, lifestyle, and governance through digitalization, contributing Unicom's strength to the construction of Digital China.

## Boosting the high-quality development of the digital economy

Focusing on advancing new industrialisation, "5G + Industrial Internet" is regarded as an important lever for the development of new industrialisation. It consolidates the construction of digital information infrastructure, deepens the integration and innovation of digital technology, increases the practical application of digital and real economy integration, and comprehensively empowers the deep and solid advancement of new industrialisation.

• The Company cumulatively developed more than 300 deep-knowledge, industry-specific, technologically advanced, and efficiently collaborative Unicom solutions.

• The Company implemented over 29,000 industrial Internet projects, empowering the construction of more than 7,100 5G factories, comprehensively covering 41 industrial categories of the national economy.

China Unicom and China Resources Building Materials Technology have joined forces to lead the digital transformation of the building materials industry. The "1+1+1+N" 5G + industrial Internet application service system integrates China Unicom's self-developed capabilities in 5G private network management, positioning, MEC, GIS, and security, achieving multiple first-time breakthroughs in the digital transformation of the building materials industry. The project was included in the "2024 5G Factory Directory" by the Ministry of Industry and Information Technology and won the national first prize in the "Computing Power + Industry" thematic finals of the second "Huacai Cup" Computing Power Competition.



"1+1+1+N" 5G+ Industrial Internet Application Service System

Tianjin Unicom, based on digital twin, Internet of Things, and artificial intelligence technologies, has developed a smart factory digital twin visualisation platform. The platform integrates applications such as energy consumption management and leadership cockpit to achieve realtime collection and visualisation of machine tool data and energy consumption data, precise equipment inspection and maintenance, promoting the digital transformation and development of the manufacturing industry.



Smart Factory Digital Twin Visualisation Platform

## Promoting the enhancement of digital government intelligence

## **Digital Government**

The Company thoroughly implemented the policy requirements of the "Three-Year Action Plan for 'Data Elements X' (2024–2026)" and the "Guiding Opinions in relation to Further Optimize Administration Services to Enhance Administrative Efficiency and Promote 'Efficient Completion of a Task'", continuously advanced the construction of digital government, and actively served the digital and intelligent operation of the government.

• The Company developed 57 digital government products, established core products such as the UniAI economic large model, Trusted Data Resource Spaces, and high-speed data network (Unicom Data Network), providing over 1,000 multi-scenario, intelligent comprehensive solutions.

• The Company created excellent cases such as the Liaoning Province 12345 data integration empowering frontline governance and the Guangdong Province "Yue Economy" urban economic governance hub.

Relying on Unicom's Trusted Data Resource Spaces, the Company supports the establishment of Zhejiang Province's first trusted operational space with diverse data development and utilisation capabilities – the Hangzhou Data Element Operation Centre. Under the premise of ensuring data sovereignty and data security, it forms an operational system integrating five major functions: "undertaking, operating, attracting investment, showcasing, and demonstrating" through the innovative integration of technologies such as big data, blockchain, and artificial intelligence.



## Smart city

The Company constructed an overall framework for an all-area smart city characterised by 'facility connectivity, data integration, platform interoperability, and business convergence', enhancing AI empowerment to improve quality, developing large models for urban governance and social governance, achieving full-process intelligence in urban events, and better serving the high-quality development, efficient governance, and high-quality living of the city.

• The Company adhered to data integration, development and utilisation throughout the entire process of all-area urban digital transformation and constructed an all-area urban digital transformation product capability system, featuring "data infrastructure + Al intelligent hub + all-area digital applications + digital transformation ecosystem".

• The Company focused on new demands such as urban resilience enhancement, precise governance, industry-city integration, green and low-carbon development, and inclusive services, upgrading a total of 53 self-developed products, providing services for over 1,000 projects nationwide.

Based on the Yanfei Gewu platform and UniAl large model capabilities, the "City Eye" perception integration platform in Nanjing was developed to conduct real-time video stream city event analysis, establish a digital base for comprehensive application of urban perception systems, and assist Nanjing in achieving "full coverage, digitalization, dynamism, and intelligence" management of terminals citywide, empowering the construction of Nanjing's "one-network unified management".



"City Eye" Perception Integration Platform

Leveraging data element sharing and circulation, the Company developed the Baotou Rare Earth High-Tech Zone Smart Industrial Park project. Through the construction of "one door + one net + one brain + one field", it enables the timely collection, transmission, storage, analysis, and intelligent response of key data such as enterprise safety, environmental protection, logistics, and operations, forming a new management model that is safe, convenient, efficient, and green for the park.



The two key platform applications: "Industrial Technology Innovation Service System" and "Enterprise Innovation Points System"

#### Smart legal services

Committed to becoming an enabler of digital transformation in the legal industry, we built an information-based, digital, and intelligent "4+6+N" Computing and Digital Smart Applications product capability system. This system provides intelligent scenario services for political and legal agencies, covering various sectors such as the Political and Legal Affairs Commission, public security, procuratorial, judicial, and legal industries. It serves the construction of a law-based China and aims to forge the "leading service provider for comprehensive smart legal operations".

Establishing a diversified "one-stop" platform for resolving conflicts and disputes, the platform achieved a 16.3% reduction in repeated conflict-related police reports, an 11.48% year-on-year decrease in criminal cases, a 22.89% year-on-year decrease in administrative violations, and a 33.2% year-on-year decrease in repeated petitions. The rate of settlement for litigation cases increased by 13% year-on-year, making it a benchmark platform with nationwide reference significance.



## Promoting prosperity in multiple fields of digital culture

Digital culture and tourism

The Company continuously empowered cultural and tourism development with innovative technology. In 2024, nine new digital cultural products such as the Cultural Heritage Interpretation Model and the Cultural Relics Revitalization Model were released. Six projects have been selected as 2024 Cultural and Tourism Digital Innovation Demonstration Cases by the Ministry of Culture and Tourism.

China Unicom Digital Intelligence Company, in collaboration with the Cultural Communication Centre of China Foreign Languages Publishing Administration and China Literature and Art Network, has developed the "Chinese Instrument Spirit" UniAl Large Model Application Platform. This platform integrates traditional cultural elements with modern aesthetics and technology to create a series of distinctive female "Chinese Instrument Spirit" images. It was recognised as a "2024 Typical Case of Large Model Scenario Application in Artificial Intelligence" at the 2024 Global Digital Economy Conference.



"Chinese Instrument Spirit" UniAl Large Model Application Platform

China Unicom makes its grand debut as the official communication and cloud service partner, adhering to the concept of "simplicity, safety, and excellence", safeguarding the Asian Winter Games with new quality productivity, illuminating the event with technological innovation, and crafting the first "cloud-based Asian Winter Games" with craftsmanship, jointly witnessing the glory of ice and snow in the digital age.



Unicom Cloud ensures the smooth operation of all cloud-based services and the security of networks and data during the event.

## Smart Education

The Company actively implemented the national strategy of invigorating the country through science and education, building an integrated product and solution capability system of "one education network + one education cloud + one education middle platform + N education applications" to contribute Unicom's strength to the construction of a strong education nation.

- The Company provided 5G campus mobile private network services for over 20,000 schools and 30 million teachers and students.
- The Company provided educational metropolitan area premium network services for more than 200 cities, districts, and counties.
- The Company constructed more than 700 benchmark projects for digital education applications.

China Unicom has developed a new smart examination management model through an integrated solution of an examination-specific cloud platform, an examination security private network, and Al examination applications, enhancing management efficiency in areas such as paper circulation, computing power scheduling, disciplinary inspection, and video aggregation before, during, and after examinations.



China Unicom Smart Examination Management Model

## 🕲 Demonstrating the advantages of convenience in a digital society

## Smart medical care

With comprehensive service for digital and intelligent integrated innovation in the healthcare sector, the Company constructed an integrated digital intelligence medical full-scenario capability system of "computing power + data + model + application", targeting hospitals and medical administration fields. The Company actively built digital infrastructure with cloud + network + intelligent computing power, continuously providing integrated services for data collection, governance, annotation, development, and operation and maintenance, constantly enriching digital smart applications in multiple scenarios such as smart healthcare, smart management, and smart services, and has achieved extensive industry service experience.

Heilongjiang Unicom provides an integrated service of all-optical network, cloud, and applications for the provincial medical insurance bureau platform, offering a stable carriage foundation for the provincial medical



Heilongjiang Medical Insurance Optical Network Construction Plan

insurance platform, and providing cloud-network integrated anti-fraud capabilities for designated hospitals and pharmacies across the province, safeguarding the people's "life-saving money".



China Unicom and Yuwell Medical jointly established the "Yuwell Medical and Unicom Intelligent Medical Device Innovation Laboratory"

#### Smart transportation

The Company focused on key scenarios such as the digital transformation and upgrade of highway infrastructure, vehicle-road-cloud integration, low-altitude economy, Internet of Vehicles, and express logistics, deeply integrating frontier technologies such as 5G and Al large models to form an integrated innovative capability of "Computing and Digital Smart Applications", contributing to the construction of a safer, more efficient, and greener transportation system.

Zhejiang Unicom is promoting the construction of smart transportation through digitalization, using data as a key production factor to expand the diversified integration of urban traffic congestion management applications. This is achieved through methods such as digital bus pick-up and drop-off and carpooling by parents, enabling refined and intelligent management.



Lu'an Intelligent Dispatch Centre

#### **Emergency management**

The Company leveraged digital capabilities to deeply cultivate the emergency management industry, focusing on areas such as disaster prevention and mitigation, command and rescue, smart fire protection, safe production, and city safety, developing differentiated specialised new products, forming multiple comprehensive solutions and scenario solutions, serving over 600 emergency management units.

China Unicom developed the "Jingxi Sentinel" project for Mentougou District in Beijing, focusing on typical flood prevention emergency scenarios. The project established a flood prevention special system to achieve integrated monitoring and early warning, multi-model analysis, and comprehensively enhance the district's flood prevention monitoring, early warning, and command dispatch capabilities.



"Jingxi Sentinel" Project

## Achieving integrated perception of the digital ecosystem

#### Ecological and environmental protection

The Company adhered to Xi Jinping's thought on ecological civilization as the fundamental guideline and action guide, continuously strengthening the deep integration of digital technology with river and lake governance, and ecological environmental protection, contributing to the construction of a green and intelligent digital ecological civilization, and serving the building of a beautiful China.

The Company leveraged the technological advantages of the China Unicom Smart City Research Institute to support the construction of a "waste-free city" in Guangdong. Integrating technologies such as 5G wireless transmission and digital twin, the "Yue Wufei" Guangdong Solid Waste Whole Process Management Digital Twin Demonstration Project was constructed to promote the upgrade of solid waste management from traditional informatization to "waste-free city" intelligence.



"Waste-free city" Demonstration Park Digital Twin Special Research and Development

China Unicom Zhejiang Taizhou Branch assists New Territories Pump Industry in building a smart park intelligent energy management system, conducting 24hour continuous monitoring of the usage of energy, water resources, raw materials, and deeply optimising production processes. The water resource utilisation rate increased by 25.8%, effectively reducing various types of resource wastage.



Smart Park Intelligent Energy Monitoring and Control System

## Promoting continuous openness of the digital intelligence platform

The Company built open and shared digital capabilities, releasing ten major digital intelligence achievements, including large model + smart customer service, digital super factory, network smart manager, smart supply chain, intelligent IT assistant, Xinghan big data platform, trillion-level remote dual-active disaster recovery, wireless network on-demand testing, digital intelligence R&D platform, and terminal intelligent testing. Our digital intelligence capabilities have already provided services to large enterprises such as the State Energy Group, China Merchants Securities, and the China Development Bank.

## Unicom Cloud

Unicom Cloud continues to enhance the variety and performance of its base products, advancing the integration of Al capabilities and strengthening security capabilities. It launched five major products: the AICC computing power cluster, AICP computing power platform, "Xingluo" advanced computing power scheduling platform, Al edge all-in-one server, and cloud GPU intelligent computing. These fully leverage Unicom's differentiated advantages in computing-network integration, such as computing power scheduling, inference distribution, and cross-domain data. The Company constructed a comprehensive and integrated intelligent computing product system, accelerating the pace of enterprise digital transformation and intelligent upgrading.

# **联通云** Unicom Cloud

## Xinghan Big Data Platform

The Company self-developed a next-generation cloud-native intelligent lake house that integrates data processing, analysis, and intelligence on an ultra-large scale, overcoming the two major challenges of integrating data lakes and data warehouses and processing massive multi-source heterogeneous data. 100% of the big data is pooled, achieving all-area data cloud migration and integration. The Company is the first in the industry to pass the "Integrated Lake House" maturity assessment.



UniAl "1+1+M" large model system

China Unicom self-developed the UniAI "1+1+M" large model system, achieving industry advanced performance at the same parameter level. The Company achieved over 35 industry large models and more than 100 benchmark applications, significantly empowering areas such as urban governance and industrial manufacturing, earning the reputation of "a large model that better understands the industry, an intelligent engine for industrial upgrading".



China Unicom UniAl "1+1+M" large model system

## China Unicom's Gewu platform

China Unicom's Gewu platform continuously upgrades its intelligent service capabilities and is the first in the industry to pass the CAICT AIoT3.0 Excellence Certification. The Gewu platform carried 480 million IoT connection, with the number of devices carried by the platform exceeding 40 million. Among them, China Unicom's Gewu Unilink Industrial Internet Platform became one of the first national A-level "dual cross" platforms, covering 9 major fields and empowering 22 industries with "cloudification, digital empowerment and intelligence", accumulating the development of 23.000 industrial models and managing over 12 million devices, accounting for 1/8 of the national total.



## Hundredfold dedication to serving customers

China Unicom implements the people-oriented development philosophy, taking customer needs as the starting point of service work, customer experience as the focus of service efforts, and customer satisfaction as the standard for evaluating service work. It deepens the implementation of the "comprehensive service, proactive service, smart service" concept, continuously fostering a service culture atmosphere where "everyone cares about service, and everyone participates in service" within the Company.

## 🔇 Establishing a convenient and efficient service system

China Unicom strengthens the awareness of comprehensive service, continuously consolidates the comprehensive service system of networkbusiness-service linkage, and solidly implements a high-quality service action plan, constructing a convenient and efficient service system.

## Optimising service operation mechanism

China Unicom continues to deepen the comprehensive service closed-loop operation mechanism, establishing an integrated service closed-loop system that spans all areas, processes, and stages, centred on customer experience, achieving a "dual enhancement" in both internal operational management levels and external customer service perception.

• The Company established a comprehensive service operation management mechanism, using super work orders as a carrier to improve the "clustering judgment – traceability analysis – clear measures – promote rectification – closedloop verification" collaborative service system. This aims to advance the comprehensive root-cause resolution of clustering issues "from point to surface, from appearance to root cause".

• The Company deeply carried out the 'Unicom Good Network, Signal Re-upgrade' activity, focusing on eight major types of high-quality mobile network locations, and concentrating on high-frequency customer usage scenarios to conduct publicity through press releases, images and texts, videos, and other media. A total of 1,744 promotional works were released, with customer views reaching 1.09 billion times, and the mobile network complaint rate reduced by over 45%.

• The Company established an integrated service standard operation system, continuously carried out the iteration and optimisation of service standards and conducted comprehensive monitoring work. Through production operation data, customer evaluation data, and customer experience walkthroughs, we proactively identified problems, promptly resolved issues, and promoted the execution and iterative optimisation of standards. In 2024, the service standard compliance rate increased by 2.5pp.

• The Company solidly carried out the 'China Unicom Good Services for Customers' activity, organised service reputation promotion, comprehensively implemented the service commitment system internally, announced the counter service commitment externally, and the standard compliance rate of counter service increased by 4.0pp.



### Improving the supervision and early warning mechanism

China Unicom continuously improved the supervision and early warning mechanism for service issues, monitored in real-time and responded quickly to consistently enhance customer service quality.

• The Company improved the service standard closed-loop monitoring system, adhering to the principle of "issuing a batch of standards and real-time monitoring of the execution effects of a batch of standards", in order to monitor various service standards, norms, and indicators, proactively identify problems, and promote timely problem resolution.

• The Company deepened the systematic resolution mechanism for customer complaint issues, following four key steps: problem clustering, problem assessment, promoting resolution, and closed-loop verification, in order to thoroughly analyse and systematically resolve common clustering issues affecting customer perception.

## 🕲 Providing a warm and satisfactory service experience

China Unicom creates an agile, intelligent, and warm customer service experience, offering more personalised services and products, continuously enhancing customer satisfaction and loyalty.

### Rich and diverse types of services

China Unicom continuously provides diversified service types, comprehensively enhancing network, product, and channel service levels to improve customer perception.

• Network services mainly include key aspects such as network coverage, network upgrades, fault handling, and communication assurance.	• Product services mainly include product usage, product policies, business agreements, notifications, reminders, account cancellation/unsubscription, etc.	• Channel services mainly include business consultation, complaint handling, enquiry services, payment and recharge, and business signup.
--	---	---

#### Efficient and rapid problem solving

China Unicom continuously solidifies foundational management, standardizes the operation of customer complaint issues, strengthens service standards, deepens end-to-end operation of all customer issues, achieves full-process transparent digital control, and enhances both the quality and efficiency of complaint resolution. In 2024, the satisfaction rate for complaint work orders reached 95.3%, an increase of 5.4pp.

• The Company conducted tiered management by classifying customer complaints based on factors such as the degree of impact on customers and the scope of influence, and established different service standards for each level.

• The Company implemented real-time early warning for complaint handling, focusing on urgent customer needs, repeated complaints, and work orders with overdue risks, and established escalation processes and collaborative resolution mechanisms.

• The Company implemented proactive service conciliation with disgruntled subscribers, established a perception conciliation special desk, and promptly initiated conciliation revisit for issues rated as unsatisfactory by subscribers to ensure satisfactory resolution of subscriber's issues.

• The Company defined key indicators for complaint management such as the rate of timely complaint resolution and customer satisfaction rate, and regulated the complaint handling process to ensure quality and timeliness.

#### Enhancing the considerate customer experience

China Unicom insists on prioritising the product experience and perception of subscribers, deepening the comprehensive service and proactive service, continuously optimising product quality, and promoting the enhancement of customer perception.

• The Company centred on customer perception, and formulated 34 product experience standards, 10 types of product verification templates, and nearly 60 verification points. The "China Unicom Product Experience Management Measures" were revised and released, clarifying responsibilities, establishing processes, strengthening operations, and enforcing strict execution to control product quality from the source.

• Before the product launch, through the twolevel linkage of the group and the provincial branches, a comprehensive product experience verification was achieved, with the product verification pass rate increasing by 1.2 percentage points. After the product launch, the focus was on key products, conducting experience walkthroughs across stages such as promotion, signup, usage, and cancellation.

## 🕲 Establishing a fair and lawful corporate image

• The Company established a comprehensive experience verification system of "pre-launch product validation and post-launch experience evaluation", strictly implementing the dual control mechanism of "100% product validation before launch, with a one-vote veto for any identified issues", ensuring quality from the source.

• The Company promoted the closed-loop resolution of experience issues. For problems identified in product experience, an expert team composed of product managers, validation managers, and support managers would jointly identify the issues and follow up for closed-loop resolution.

China Unicom participates fairly in market competition, continuously enhancing the ideological and practical consciousness of maintaining fair competition order in the market. It has issued documents such as "Further Improve the Standardised Operation of the Basic Telecommunications Market" and "Further Improve the Self-Regulation Standards for Mobile Number Portability Services" to regulate business marketing behaviour, maintain fair competition order, and help create a favourable business environment that respects, protects, and promotes fair competition. During the reporting period, there were no lawsuits or significant administrative penalties resulting from unfair competition incidents.

• The Company strictly adhered to the requirements of the "Advertising Law" and the "Anti-Unfair Competition Law" to avoid using advertising language explicitly prohibited by law; standardised promotional language in accordance with the attributes of telecommunications and business characteristics, clearly informed users of their rights and promotional content, and ensured that no violations occurred in advertising and marketing. We continuously conducted campaigns to prevent online fraud and promote positive publicity.

• The Company implemented the national real-name regulation and anti-fraud related requirements, and continuously strengthened the "red and yellow card" network access control mechanism.

• Regular audits and monitoring of high-risk users were conducted, and currently, the number of headquarters audit models related to real-name fraud risks has reached 18. In 2024, a total of 1.991 million suspected high-risk users were identified.

• The Company continuously conducted "second real-name authentication" for risk users, with a total of 3.066 million risk users notified throughout the year, among which 463,000 users completed the "second real-name authentication" and had their services restored.

• Focusing on major operational risks, real-time monitoring of marketing health risks was conducted to comprehensively enhance the real-time auditing and operational capabilities via big data. The number of real-time auditing models via big data has reached 87, "identifying audit risks and pushing rectification work orders to frontline personnel for verification and rectification" within 10 minutes of "frontline production order generation".

## 🛞 Improving the quality management system

China Unicom continues to implement the SASAC of the State Council's requirements on quality actions and comprehensive quality management for central enterprises, thoroughly implementing the service work requirements of "bottom line, standard line, high line", and continuously improving the quality control (QC) system. There were no major public opinion incidents such as media exposure arising from the Company's products or services.

• Centred on the customers, the Company established a comprehensive service quality management system, focusing on service quality supervision, service standards operation, smart customer service operation, and service reputation management. • The Company implemented comprehensive services thoroughly, focusing on fully implementing the work of correcting industry conduct and addressing complaints comprehensively. We strengthened proactive service, enforced service standards to proactively identify issues, and enhanced customer value. We optimised smart services, established a new benchmark for smart services on the 10010 hotline, and met customers' high-quality service demands. • The Company established a strong quality awareness among all employees, organised and conducted a quality knowledge competition activity for central enterprises under the SASAC of the State Council with the participation of 240,000 people across the entire system, cultivated 167 QC group achievements, including 3 national excellence awards, maintaining a leading position in the industry in terms of the number of awards, collectively building a foundation of quality for a strong enterprise.

## Delivering value through brand strengthening

China Unicom comprehensively improved the top-level design, formed a core brand value system, continuously optimised brand architecture, enriched brand communication strategies, enhanced brand management capabilities, strengthened brand specialisation level, accelerated refined brand operations, and adhered to maintaining the Unicom brand's essence with quality networks, excellent products, and superior services, conveying the brand's social value and establishing a model of responsible branding.

• Achieving significant results in brand building. In the list of central enterprise brand building capabilities announced by the SASAC of the State Council, China Unicom ranked No.2 and maintained the No.1 position in the industry for four consecutive years.

• Continuously strengthening the soft power of the brand. The Company took the lead in the industry to launch cultural and creative products and mascots, Tone.

• Continuously accelerating the process of brand internationalization. On 5 December, China Unicom grandly announced the revitalization of its international brand, UniCom, in Hong Kong, China to embrace global partners with a more open attitude.

• Further enriching the connotation of the sub-brand. China Unicom Smart Home was awarded the first batch of Excellent Achievement Awards in the Central Enterprise Brand Leading Action by the SASAC of the State Council. China Unicom Smart Home's videos such as *The Promotion of Constable Fan and Happiness Comes Home* won several awards including the "2024 Annual Marketing Case Excellence Award" at the 31st China International Advertising Festival Great Wall Awards, the "2024 Annual Content Marketing Gold Case" at the 31st China International Advertising Festival Advertiser Case, and the "Gold Award for Short Video Marketing" at the 16th China Advertising Golden Vision Awards.

• Continuously enhancing the brand operating capability. Projects such as "China Unicom Olympic Innovation Marketing" and "Unicom Beautiful Chinese Knot" won several awards including the "Bronze Award for Marketing Innovation in 3C Digital" at the 2024ECI Awards and the "Bronze Award in Sports Marketing Category" at the 11th TMA (Top Mobile & Al Ceremony) Award.

• Actively fulfilling social responsibility. China Unicom's ESG model was awarded the "Corporate ESG Marketing Excellence Award" in the marketing case category at the 31st China International Advertising Festival Great Wall Awards.



China Unicom's mascot Tone, The Promotion of Constable Fan, Happiness Comes Home

# Persist in green coordination, co-build and co-share integrated innovation achievements



# Persist in green coordination, co-build and co-share integrated innovation achievements

China Unicom thoroughly implements new development philosophies, continues to support rural revitalization, provides high-quality services for regional coordinated development, accelerates the green transformation of development methods, deepens integration and openness, enhances people's well-being, eliminates the digital divide, builds harmonious and mutually beneficial labour relations, and shares the results of social development with the people.



## Measures adopted in 2024

- "Unicom Digital Village" platform covered 260,000 villages, serving 27.55 million village households.
- The Company promoted technological innovation and application in energy saving, carbon reduction, and zero carbon, with comprehensive energy consumption per unit of information flow decreasing by 27.9% compared to the end of the "13th Five-Year Plan" period.
- The capacity of submarine cables in the "Belt and Road" direction increased to 57.2T, and the capacity of cross-border land cables increased to 51.6T.
- The Company joined hands with partners to advance together, leveraging digital technology integration and innovation to drive industrial innovation and achieve new results in strategic cooperation.
- The Company actively engaged in public welfare undertakings, with 678 volunteer organisations and 103,778 registered volunteers.
- The Company cared for and supported the broad workforce, with an investment of RMB123 million for assisting employees in difficulty.

## Actions to be taken in 2025

- The Company will focus on industrial revitalization, talent revitalization, cultural revitalization, ecological revitalization, and organisational revitalization to continuously create a new paradigm for comprehensive rural revitalization.
- The Company will continue to deepen 5G co-building and co-sharing, enhancing network coverage in key scenarios and user experience.
- The Company will embrace global partners with a more open attitude, continuously providing highquality products, services, and solutions to global customers.
- The Company will leverage the governance advantages of integration and openness to embark on a path of high-quality development in collaboration with partners.
- The Company will continuously develop information accessibility technology products for assisting the disabled, suitable for various categories of disabled people, and deepen specialised elderly assistance services.
- The Company will continuously implement the promotion and incentive system, upgrade and optimise the talent management system, and create broader development opportunities for the employees.
# Focusing on promoting coordinated development

China Unicom fully supports rural revitalization, solidly promotes the common prosperity of all people, intensifies the implementation of regional strategies, enhances regional development vitality, and contributes to the establishment of a complementary and high-quality regional economic landscape.

# Promoting comprehensive rural revitalization

China Unicom is deeply advancing the national rural revitalization strategy by formulating an implementation plan for rural revitalization, promoting the construction of digital villages, carrying out consumption assistance, and strengthening the rural revitalization team. It is making positive contributions towards achieving the beautiful vision of comprehensive rural revitalization, strong agriculture, beautiful countryside, and prosperous farmers.

# Implementing the rural revitalization strategy

China Unicom formulated the "Key Points of China Unicom 2024 Work to Assist Rural Revitalization", focusing on industrial revitalization, talent revitalization, cultural revitalization, ecological revitalization, and organisational revitalization, continuously creating a new landscape for comprehensive rural revitalization.

Support the development and expansion of distinctive industries, contributing to industrial revitalization.	Strengthen training for frontline cadres to support talent revitalization.	Protect and inherit local ethnic culture, and assist in cultural revitalization.	Build livable and business-friendly beautiful villages to facilitate ecological revitalization.	Promote paired assistance and joint construction actions to support organisational revitalization.		
Targeted Poverty Alleviation: 522 counties townsh	2 1,140 villages	Stationed support <b>1,57</b> people				
Central units' targeted assisi	tance work performance		The consumption assistance case was evaluated by the National			

Central units' targeted assistance work performance assessment continues to

# Receive the highest rating of "Good" for 6 years

The consumption assistance case was evaluated by the National Development and Reform Commission as

"National Consumption Assistance to Support Rural Revitalization Typical Case"

China Unicom held the 2024 Rural Revitalisation Promotion Conference in Chongqing, fully showcasing the latest achievements of China Unicom in supporting rural revitalisation through digital villages. At the meeting, Rural Revitalization Institute of Digital Industry Co., Ltd. was inaugurated, aiming to become a science and technology reform demonstration enterprise that benefits agriculture, rural areas, and farmers, satisfies the government, and leads the industry, contributing to the creation of a new engine for rural revitalization.



China Unicom 2024 Rural Revitalization Promotion Conference



The unveiling ceremony of Rural Revitalization Institute of Digital Industry Co., Ltd.

China Unicom Guizhou Branch assisted Ceheng County in Qianxinan Prefecture, Guizhou Province, in implementing three major projects: the restoration and protection of traditional architecture in ancient Buyi villages, the enhancement of village environmental landscapes, and the renovation of infrastructure. It invested aid funds to build the Banwan Village Cave Library, improving traditional public cultural infrastructure, supporting the development of Buyi intangible cultural heritage, helping local residents acquire unique handicraft skills, and creating employment for over 1,200 people.



China Unicom provided targeted assistance to Ceheng County in developing Buyi intangible cultural heritage, promoting rural revitalization.

Shaanxi Unicom has cumulatively dispatched 271 support cadres to build 28 new era civilization practise centres and other bases in the support villages, uniting the spiritual strength of the farmers. In Jingvang Anwu, the "First Metaverse Village" was established to promote the Qin merchant culture, utilising XR technology to disseminate historical culture, which has been warmly received by the "three rural people".

# Promoting the construction of digital villages

China Unicom seizes the strategic opportunity period for the development of digital villages to assist rural revitalization, leveraging digital intelligence advantages to enhance new momentum for rural revitalization, and continues to build the leading brand of digital villages. The Company focuses on addressing the shortcomings in rural infrastructure, improving the rural public service system, and strengthening support for rural construction to vigorously promote the construction of digital villages.

· Promoting universal rural telecommunications services. China Unicom is committed to promoting the "Broadband Frontier" construction, actively participating in the development of universal telecommunications services, and vigorously building fibre broadband and mobile networks in remote rural areas, meeting the network connection needs of over 30,000 remote rural areas with approximately 20 million people. Service channels are continuously extending coverage to more remote areas, offering more favourable tariff policies in township regions, significantly eliminating the digital divide between urban and remote rural areas.

Unicom's Digital Village Platform covered 260,000 administrative villages million Coverage rate of mobile network in township villages

**Registered subscribers** 

27.551

Coverage rate of mobile network in administrative

· Accelerating the popularisation of rural digital governance. The "Unicom Digital Village" platform, starting from the actual needs of rural digital construction, empowers rural digital governance through centralised operation, scenario application innovation, and platform capability openness. Based on the Digital Village big screen, the platform focuses on aspects such as digital governance, digital economy, and services benefiting farmers. It creates nearly a hundred digital applications shared across the entire platform, promoting comprehensive agricultural upgrades, rural development, and supporting the realization of "cloud-based" production, "online" sales, "digital" lifestyle, and "AI" governance for agriculture, rural areas, and farmers.

In 2024 "Unicom Digital Village" platform innovatively introduced People's Daily featured content in various forms such as "General Secretary Time" and "Reading Newspapers in a Different Way" to convey mainstream values and demonstrates spiritual strength on the national digital rural large screens.



"Unicom Digital Village" platform digital screen displays People's Daily featured content

Suizhou Unicom in Hubei Province is extending the "Internet + Governance" initiative to rural areas by leveraging digital empowerment to create a "Smart Governance Sharing" demonstration village. Through AI camera monitoring, the governance of Guihua Village has transformed from human management to technological prevention, achieving informatization, precision, and intelligence in rural social governance, effectively injecting smart momentum into rural revitalization.



Digital Governance Platform in Guihua Village, Suizhou City, Hubei Province

Inaugural Meeting of the Chongging Banan Jielong Town

'Communication Cooperative'

China Unicom proactively serves and integrates into local economic and social development, innovatively conducting collective economic cooperation with 21,000 administrative villages, establishing communication cooperatives, and creating a new model of cooperative development for building, sharing, and benefiting from digital villages. In Jielong Town, Banan District, Chongqing, the "Telecommunications Cooperative" assisted over 600 families in upgrading to dual-gigabit networks, bringing an average annual income increase of RMB230,000 to the village collective.

 Accelerating the upgrade of rural digital industries. The Company utilised comprehensive capabilities in "connectivity, computing, data, application, and security", the "Big Data" and "Internet of Things" platforms for agriculture focus on key areas such as smart breeding, smart cultivation and farming, fisheries and fishery administration, and agricultural product traceability. They aimed to build an integrated smart agriculture sensing system and operational service capabilities, thereby facilitating the agricultural industry chain to achieve "good production, good sales, good management, and good service".

agricultural service projects in 2024

China Unicom carried out farmland project practice in Xianyu Township, Hetang District, Zhuzhou City, to promote local agricultural efficiency, farmers' income and rural prosperity.



Zhuzhou City Hetang District Agricultural Comprehensive Reform Management Platform Monitoring Equipment



Zhuzhou City Hetang District Agricultural Comprehensive Reform Comprehensive Management Platform Rural Governance Large Screen

Henan Zhumadian Unicom built a basic digital village module platform for the township where the targeted assistance village is located, aiding rural revitalization. In 2024, the digital rural platform cumulatively served 21,100 subscribers, with 345 new 5G base stations constructed in rural areas. Through broadband network upgrades, full coverage of 10 gigabit premium broadband network was achieved for administrative villages and above in rural regions.



Henan Zhumadian Unicom conducted in-depth research on cultivated land in the targeted assistance village.

Yunnan Unicom is contributing to the construction of a local smart coffee plantation base. By strengthening the construction of base planting management and promoting the digital smart and organic development of the coffee base, it has helped local farmers achieve transformation and upgrading of the coffee industry, improved farmers' planting skills and income levels, and injected new vitality into the local coffee industry.



Coffee Smart Plantation Base

• Accelerating the cultivation of rural digital talents. The Company established expert teams integrating government, industry, academia, research, and application for the Rural Revitalization Digital Industry Research Institute, Smart Agriculture Taskforce, and Smart Ocean Taskforce. With the goal of "training one digital village official per village and cultivating one rural broadcaster per village", specialised training was organised, covering nearly 3 million participants. A total of 25,000 digital village officials were trained in full-time courses, and over 40,000 rural broadcasters were trained over two years. The live broadcasts assisted agriculture sales exceeding RMB180 million.



China Unicom actively assisted targeted support and matched assistance regions. It carried out rural revitalization talent training to assist in training frontline cadres, rural revitalization leaders, and technical talents in poverty-stricken areas, forming a replicable and referable "rural revitalization training empowerment practise".





Hold rural revitalization training classes

• Exploring the construction of a consumption assistance model. China Unicom comprehensively integrated and utilised internal and external corporate resources for consumption assistance, mobilising the entire group and various sectors of society to jointly promote consumption assistance. In 2024, a total of 260,000 employees participated in consumption assistance activities, with more than 700 units involved in centralised procurement. The "Assistance Mall" platform boosted agricultural product sales by RMB430 million.

China Unicom actively assisted targeted support and matched assistance regions. It carried out rural revitalization talent training to assist in training grassroots cadres, rural revitalization leaders, and technical talents in poverty-stricken areas, forming a replicable and referable "rural revitalization training empowerment practise".



China Unicom actively purchases and promotes the sale of featured agricultural products from poverty alleviation areas, creating a strong support atmosphere.

# Promoting Coordinated Regional Development

China Unicom thoroughly implements major national regional strategies and regional coordinated development strategies, fulfilling the mission of central enterprises and contributing to high-quality regional development through practical actions.

# Serving major regional strategies

China Unicom actively implements major national regional strategies, focusing on the eight computing power hubs of "Eastern Data and Western Computing", optimises the "5+4+31+X" resource deployment, accelerates the construction of high computing power data centres, and helps the Beijing-Tianjin-Hebei Region, the Yangtze River Delta, and the Guangdong-Hong Kong-Macao Greater Bay Area to better serve as sources of high-quality development, promoting regional integration and converged development.

#### Coordinated development of Beijing-Tianjin-Hebei

The Company accelerated the construction of the Beijing-Tianjin-Hebei integrated network, created a "Capital Half-Hour Technology Life Circle", enhanced the deployment of computing power resources, established the Beijing Localised Independent Innovation Computing Power Centre "Jingxi Zhigu" in Mentougou, set up China Unicom (Huailai) Big Data Innovation Industry Co., Ltd., coordinated the scheduling and supply of computing power in the Beijing-Tianjin-Hebei region and Northern China, and strengthened the overall digital service capabilities of the Beijing-Tianjin-Hebei region.



China Unicom (Huailai) Big Data Innovation Industry Co., Ltd.

#### Yangtze River Delta Integration Development

• The Company continuously accelerated the construction of the 5G premium network, with more than 15,000 new outdoor 5G base stations added in three provinces and one city.

• The Company continuously improved the integrated data centre development in the Yangtze River Delta, assisting in the construction of a world-class low-carbon digital city cluster.

#### Serving the regional coordinated development strategy

China Unicom actively implements the national regional coordinated development strategy, fully leveraging its network and technological advantages to establish an integrated deployment with distinctive regional characteristics of "point-to-surface, coordinated linkage". It strengthens the coordinated linkage between national hub nodes and non-national hub node areas, assisting in advancing the Western Development, comprehensive revitalization of the Northeast, rise of the Central Region, and leading development of the Eastern Region, forming a new paradigm of complementary advantages and coordinated development.

#### Rise of the Central Region

• The Company increased the advancement of Computing and Digital Smart Applications resource deployment to create integrated new data centres. In Shanxi Province, there is 1 provincial-level, 11 municipal-level, and 57 county-level data centres, with a total of over 10,000 cabinets, achieving a cloud pool "1+11+X" architecture; the first government-led, Unicom-invested, constructed and operated intelligent computing power cluster in the central region – the Zhengzhou Artificial Intelligence Computing Centre – was established, with the backbone cloud pool covering all 18 cities and prefectures in the province.

• The Company actively participated in the digital and intelligent construction of inland river terminals and navigation power hubs in river basins such as the Jiangxi section of the Yangtze River, and undertook large data centre infrastructure construction projects for Jiangxi Port Group Company.

The Company become a support organization for network security



Under the empowerment of the China Unicom "Smart Fishery Cloud" platform, the Tonghu fishermen in Caidian have achieved a bountiful harvest.

and data security management in the field of industry and information technology in Hunan Province. The establishment of the Yongzhou Huisheng Footwear 5G+ digital factory has been recognised by the Hunan Provincial Government as the 2024 Hunan Province "5G+ Industrial Internet" model factory.

# Comprehensive revitalization of Northeastern China

• The Company strengthened the construction of digital infrastructure in regions such as Jilin, investing RMB140 million to plan and build 821 stations to ensure coverage of border areas and transportation trunk lines; established a "1+2+N" intelligent computing power layout in Harbin and Suihua, providing over 1,000 cabinets with high power density and low PUE value; deployed data centres in Jilin and Shenfu, investing RMB800 million to build the Changchun Big Data Industrial Park (Intelligent Computing Centre), forming a multi-level computing power supply capability.

• The Company made comprehensive efforts in multiple fields such as digital village, digital government affairs, digital governance, digital ecological environment, digital healthcare and



Ansteel Qidashan Mine Intelligent Control Centre

smart transportation to advance projects in regions like Heilongjiang and Liaoning. These include the construction of beautiful villages, data guidance for modern industrial parks, upgrades to government extranet, government cloud services, natural disaster warning systems, ecological environment monitoring platforms, collaboration on medical insurance data elements, and the construction of medical communities and smart hospitals.

# Accelerating the promotion of green development

# Responding to global climate change

China Unicom accelerates the green transformation of its development approach, adopting proactive strategies to address climate change, and strictly complies with the Environmental Protection Law of the People's Republic of China and the Measures for the Supervision and Administration of Energy Conservation and Ecological Environmental Protection of Central Enterprises, among other laws and regulations related to environmental protection. It regularly assesses climate change-related risks and opportunities, and formulates environmental management goals and strategies.

# Improving the green development governance system

China Unicom integrates green development and climate change-related issue management into the corporate governance framework. The Board of Directors, as a decision-making body, fully plays its role in leading, coordinating, guiding, and overseeing. The Company management in charge of green, low carbon initiatives, energy conservation, and emission reduction work guides the establishment and improvement of the corporate energy-saving, carbon-reduction, and climate change management system, and periodically receives reports on climate governance, energy conservation, and emission reduction efforts. Each relevant unit takes respective responsibility, jointly advancing China Unicom's green integrated collaborative innovation capabilities to a new level.

Governance Level	Responsible Organisation	Major Responsibilities		
Top decision-making body	Board of Directors	<ul> <li>Review and supervise significant matters related to long-term development strategies and safety and environmental protection in environmental management.</li> <li>☆ When formulating operational plans and investment schemes, consider the impact of climate-related risks and opportunities.</li> </ul>		
Management Organisation	Network Operations Division	<ul> <li>Take the lead in promoting and implementing the construction of the carbon peak and carbon neutrality capability system, establish and improve relevant management systems, and organise the implementation of energy-saving and carbon reduction work across the entire network.</li> <li>Periodically report to the board of directors or the responsible management on matters such as climate governance and energy conservation and emission reduction.</li> </ul>		
Execution and implementation	Responsible departments and relevant business departments for energy conservation and carbon reduction at headquarters/subsidiaries	Focus on areas such as carbon reduction in network infrastructure, carbon reduction in public services, and industry empowerment businesses, implement various environmental management measures, and promote the coordinated transformation and development of digitalization and greening.		

# China Unicom's Green Development Governance Structure and Supervision Responsibility

# Implementing green and low-carbon strategy deployment

China Unicom is deeply advancing the integration of green low-carbon and digital intelligence development. Based on the original "China Unicom 'Peak Carbon-emission, Carbon-neutrality' 14th Five-Year Action Plan", the "China Unicom Carbon Search Green Action Plan (2024–2025)" has been newly upgraded, implementing the new "3+5+1+1" green action plan to lead the industry's green transformation and empower societal green development.



Details of China Unicom's new "3+5+1+1" green actions

#### Strengthening climate risk and opportunity management

In response to the intensifying global climate change situation, China Unicom continuously strengthens the analysis, assessment, and management of risks and opportunities related to climate change. It incorporates climate change factors into the overall risk management process, conducts a comprehensive analysis of energy consumption information alongside the Company's overall development goals and operational conditions, and organises annual climate change risk identification assessments to formulate climate risk response measures.

China Unicom's Climate Change Risk and Opportunity Identification Process

• Collecting information on climate change-related risks and opportunities. Taking into account factors such as policies, regulations, strategies, technology, operations, and market, the Company collects, compiles, categorises, and evaluates relevant information.

• Assessing the impact of climate change. The Company evaluates the substantive impact of extreme weather conditions (such as earthquakes, floods, etc.) on communication network security, and analyses the types, scope, intensity, timing, and possibility of such impacts.

• Establishing a risk and opportunity matrix. Based on the likelihood and impact of climate change, the Company establishes a risk and opportunity matrix, and organises each professional department to identify related risks and opportunities according to categories such as network security operation and energy efficiency improvement, and changes in customer usage demands.

• Determining management methods and resource investment. Focusing on its overall development goals, the Company formulates a special plan for carbon peaking and carbon neutrality, promoting implementation from aspects such as dual carbon management, technological energy saving, and renewable energy application, scientifically and reasonably determining management methods and investment in energy-saving renovation projects.

• Defining substantial impact. Based on the scope, extent, and frequency of the impact, combined with relevant policy guidance and technology remediation development forecasts, the Company organises relevant professional departments to conduct a comprehensive assessment to define the substance of the impact.

Assessment results and countermeasures for climate change risks and opportunities

• In response to significant climate risks and opportunities, the Company conducted an in-depth assessment of the potential impact intensity, scope, and timing of various climate risks, as well as the possible financial implications for the business. A total of five risks and two opportunities were identified, with response measures formulated for each. The Company continuously improves its environmental management system, with several subsidiaries obtaining ISO 14001 certification. Among them, the short-term time range is 0 to 1 year, the medium-term is 1 to 5 years, and the long-term is over 5 years.

Risk Category	Subcategory	Risk/Opportunity Description	Impact level	Location of occurrence	Time range
	Legal and Policy Risk	To achieve the goals of carbon peaking and carbon neutrality, stricter control measures for greenhouse gas emissions are being promoted.	Middle	The organisation itself, major suppliers, upstream and downstream of the supply chain	Short to medium term
Transformation risk	Technological risk	h the development of emerging high-density computing power business demands, there is an urgent Middle The organisation itself, d for breakthrough efficient carbon reduction and zero-carbon innovative technologies. Middle major suppliers		Short to medium term	
	Market and reputation risk	Consumer preferences have shifted towards choosing low-carbon products, which may raise market Low Downstream suppl entry barrier.		Downstream supply chain, end users	Medium to long-term
Dhuming trials	Acute risk	Floods, blizzards, earthquakes, and other extreme weather conditions have caused varying degrees of damage to the safe operation of communication networks.		The organisation itself	Short to medium term
Physical risk	Chronic risk	Global warming affects the operation, maintenance, and power consumption of communication facilities, and rising sea levels cause damage to coastal equipment and facilities.	Low	The organisation itself	Long-term
Low-carbon	Resource efficiency	Use of low-carbon technologies to improve energy efficiency.	Medium	The organisation itself	Short to long term
opportunity	Products and services	Increased demand from customers for a green transformation of development.	Mid-to-high	End users	Short to long term

# Climate Change Risks and Opportunities

# Impacts and countermeasures of risks and opportunities brought by climate change

Risk Category		Major Financial Impact	Main Business and Strategy Impact	Countermeasures
	Legal and Policy Risk	Increase in direct costs	Business Operation Adjustment	Actively follow up on policy research and regularly optimise key tasks related to dual carbon.
Transformation risk	Technological risk	Increase in direct costs	R&D and procurement	Research and develop new low-carbon technologies, enhance proprietary innovation capabilities, and promote the construction of a green supply chain.
	Market and reputation risk	Increase in indirect costs	Products and services	Pay attention to market changes, develop green and low-carbon products, promptly disclose the progress of the Company's ESG work, and establish a responsible brand image.
	Acute risk	Increase in indirect costs, increase in capital expenditure	Infrastructure maintenance, products and services	Continuously improve risk prevention measures and emergency plans, and strengthen drills, etc.
Physical risk	Chronic risk	Capital expenditure increased, with a special investment in energy conservation and emission reduction of RMB410 million	Infrastructure construction and maintenance	Continuously follow up on information collection and make necessary updates to risk prevention and emergency plans for relevant areas.
Low-carbon	Resource efficiency	Operating costs reduced, saving energy consumption 445,000 tonnes of standard coal	Operational efficiency improvement	Vigorously promote low-carbon technology and increase the use of clean energy.
opportunity	Products and services	Operating revenue increased	Products and services	Develop digital solutions for ecological protection and energy consumption management to support green development across society.

To ensure the effective implementation of the aforementioned response measures, the Company allocates resources to support talent development, assessment, and incentives, and establishes an emergency response plan for unexpected environmental incidents.

• The Company strengthens the talent pipeline in the field of green development, reasonably plans the talent structure, incorporates green development, energy-saving technologies, carbon peaking and carbon neutrality into training programmes, and focuses on enhancing the capabilities of the green development talent team.

• The Company establishes and improves the comprehensive assessment and evaluation mechanism for corporate green development and dual-carbon management, enhances the internal indicator warning and reporting mechanism, and incorporates carbon peak and carbon neutrality work into the assessment and evaluation system of branch (subsidiary) companies, clarifies the assessment rules, and strictly holds accountable and deducts points for negative incidents such as data falsification and environmental violations.

The Company establishes an incentive mechanism for energy conservation and emission reduction management. Units with outstanding
achievements in energy conservation and emission reduction will be commended and rewarded by the headquarters, and appropriate investment
preference policies will be provided as necessary.

• An emergency response plan for environmental incidents has been established, and no issues of violations of laws and regulations in the environmental field occurred in 2024. The Company establishes and improves the system for identifying and addressing environmental safety hazards, conducts emergency drills, enhances early warning capabilities, and continuously refines the environmental management process from emergency preparedness, emergency response, post-event recovery, to information disclosure.

# Scenario Simulation Analysis

To understand the potential impact of climate change risks on network facilities and business operations, and to assess adaptive capacity, the Company has established a scenario analysis framework to evaluate according to five types of climate scenarios.

Scenario 1: Extreme weather such as floods, snowstorms, and earthquakes impact the safe operation of communication networks. Scenario 2: Chronic climate changes such as persistent high temperatures, changes in rainfall patterns, and rising sea levels caused by global warming impact the safe operation of communication networks in coastal areas.

Scenario 1 and Scenario 2 involve physical risks. As the scope and frequency of extreme weather events continue to increase, the potential damage to the secure operation of communication networks may also rise. It is necessary to continuously enhance the disaster resistance and recovery speed of communication network facilities, establish a more efficient emergency response mechanism and maintenance team, and adopt equipment and technologies with stronger disaster resistance capabilities.

Scenario 3: Extreme weather such as floods, snowstorms, and earthquakes affect subscribers travel, logistics distribution, and physical store operations.

Scenario 4: The popularisation of new green and low-carbon technologies impacts energy-saving retrofits and asset acquisitions.

Scenario 5: The growing demand from customers for industrial energy consumption management, digital empowerment of environmental governance, and green smart cities impacts the development of new products and new businesses.

# Clarifying climate governance target indicators

The Company's greenhouse gas emissions are primarily associated with production and operational activities such as network operations, office and business operations, heating, canteens, and official vehicles. The main indicators used to measure and manage climate-related risks and opportunities include comprehensive energy consumption per unit of information flow and comprehensive energy consumption per unit of total telecommunications business volume. Among them, the type of greenhouse gas is carbon dioxide, and the sources mainly include indirect carbon dioxide emissions from electricity consumption and externally purchased heat, as well as direct carbon dioxide emissions from the consumption of petrol, diesel, natural gas, and coal.

# **Overall Objective**

China Unicom promotes technological innovation and application in energy saving, carbon reduction, and zero carbon, elevating its green development to new heights and empowering society-wide low-carbon development to achieve significant results.

• During the "14th Five-Year Plan" period, the energy consumption and carbon emissions per unit of production capacity, as well as the energy consumption and carbon emissions per unit of revenue capacity, to improve year by year, with the increase in carbon emissions being lower than the increase in energy consumption.

• By 2025, the comprehensive energy consumption per unit of telecommunications business volume will decrease by more than 15% compared to 2020, and the comprehensive energy consumption per unit of information flow will decrease by more than 20% compared to 2020, leading the overall development target of the industry.

# **Overall Progress**

• The comprehensive energy consumption per unit of information flow decreased to 2.02 kg standard coal/TB, representing a reduction of 27.9% compared to the end of the "13th Five-Year Plan" period.

22 data centres were selected as national green data centres.

• The Company improved the energy saving and emission reduction statistics monitoring and reporting system, established a comprehensive energy saving and emission reduction statistics monitoring framework in each unit, strengthened the measurement and recording of energy consumption and pollutant emissions during production and operation processes, established relevant statistical ledgers, and prepared energy saving and emission reduction reports on a semi-annual and annual basis. Beijing, Shenzhen, and other branch companies have engaged third-party organisations to verify or certify data such as the Company's greenhouse gas emissions.



# Continued deepening of co-build and co-share

# Deepening China Unicom-China Telecom co-build and co-share

China Unicom, in collaboration with China Telecom, is advancing the co-build and co-share of 5G, 4G, and basic network resources. Together with the industry, they have achieved significant breakthroughs in shared technology, network architecture, operations, and management, providing a good example for global 5G scale construction and low-carbon emission reduction.

• Both parties jointly implemented the "Signal Upgrade", promoted the enhancement of 5G coverage in key scenarios, advanced the deployment of 5G-A capability upgrades, and added a total of 165,000 new 5G mid-band base stations, with a cumulative total of 1.375 million in operation.

• On the basis of a single 4G mid-band network, both parties are continuously advancing the simplification of 4G low-traffic co-located sites. The number of shared 4G mid-band base stations exceeds 2 million, and over 100,000 4G stations have been simplified, effectively promoting network "reduction, quality improvement, and efficiency enhancement".

• The Company carried out 5G-A capability upgrades, deploying carrier aggregation in key cities such as Beijing and certain hotspots, key scenarios, achieving RedCap scale coverage in over a hundred cities.

The co-build and co-share initiative has<br/>cumulatively saved the nation more thanSavings in operating costs exceededReduced carbon emissions by more thanRMB**370** billion**12** million tonnes/year

# Launching the commercial promotion of 5G inter-network roaming across the entire industry

On 17 May 2024, China Unicom, together with China Mobile, China Telecom, and China Broadcasting Network, the four major telecom operators, jointly launched the commercial promotion of 5G inter-network roaming, further expanding 5G network sharing scope, reducing duplicate investment. When subscribers reach areas where the mobile number's operator does not have 5G network coverage, such as some remote areas, they can automatically connect to other operators' 5G networks. The entire process does not require changing SIM cards or phone numbers, and incurs no additional costs, effectively enhancing the overall efficiency of the 5G network and customer service perception.

# Enhancing the energy efficiency of network infrastructure

China Unicom balances network development with safety and carbon reduction, issuing regulations such as the "Interim Measures for Energy Conservation and Emission Reduction Management of China Unicom". It establishes a three-tier information and communication network energy-saving technology system based on network-level, site-level, and equipment-level structures. This system manages carbon emissions throughout the entire lifecycle of network planning, construction, maintenance, and operation, promoting green and lowcarbon development of information and communication infrastructure.

Special investment in energy conservation and emission reduction



# Building a green mobile network

Relying on the China Unicom Carbon Search Management Platform, the Company established and improved a "dual control" indicator system of total volume and intensity that aligns with the characteristics of telecommunications operators, consolidating the foundation for energy consumption and carbon emission data management. By combining visualisation methods with digital twins and Al support, the Company laid the groundwork for the output of intelligent management strategies, enhancing the level of dual-carbon digital management.

• The Company self-developed the 4G/5G collaborative intelligent energy-saving management platform and 5G intelligent power and management system based on AI and Big Data innovative technologies, adopting multiple measures to build a green 5G network.

• The Company issued the China Unicom 6G Green Network White Paper, proposing the development vision of "Ubiquitous Intelligence and Simplicity, Green Energy and Carbon Reduction".

· Network planning fully considered environmental protection, avoiding the ecological protection red line.

# Developing green data centres

The Company actively adopted various green and low-carbon technologies to create a greener data centre operational model.

China Unicom's Sanjiangyuan Big Data Base leverages Qinghai Province's abundant renewable energy resources such as photovoltaic power, adopting a combination of technology and market approaches to create a 100% green electricity intelligent computing integration demonstration park. With the three-fold coordination of "green electricity, green computing power, and green finance", it sets a new industry benchmark for green electricity intelligent computing with an average annual PUE below 1.17.



China Unicom Sanjiangyuan Big Data Base

#### Building a green and ultra-lean network

Since early 2020, China Unicom has fully implemented the streamlining of 2G and the reduction of 3G frequencies, refarming the vacated low-band and premium antenna resources to 4/5G, and launched a three-year special action for ultra-lean networks. The Company completed the creation of 61 ultra-lean network demonstration zones, with 30,000 architecture nodes consolidated nationwide, tens of thousands of outdated equipment streamlined and decommissioned, and an estimated annualised operating cost saving of RMB1.7 billion.

Guangxi Liuzhou Unicom utilises the Big Data Digital Planning Service Platform (DPSP) to address complex network operation planning issues and create an ultra-lean network. It vacated 66 machine rooms and 173 BBU equipment in Rong'an, Liuzhou, effectively reducing equipment energy consumption.

# Accelerating energy-saving technology innovation

China Unicom leverages new technologies to enhance energy efficiency, self-developing power-saving and air-conditioning energy-saving technologies. "Unicom Lingbing" has applied for 9 patents, reaching an advanced domestic level. The self-developed high-efficiency energy-saving technology has been included in the "Recommended Catalogue of Energy-saving and Carbon-reduction Technologies and Equipment in the National Industrial and Information Technology Sector (2024 Edition)".

China Unicom relies on the R&D capabilities of China Information Technology Designing & Consulting Institute to develop proprietary VRM Intelligent dual-cycle (fluorine pump) multi-unit modular equipment room air-conditioning system, pioneering fluorine pump dual-loop technology and outdoor unit integration technology. The energy efficiency level reaches industry-leading standards, allowing installation under conditions of ultra-long distance, large height difference, and small footprint. In the Henan Unicom Zhengzhou Erchang Communication Cloud Data Centre Project, the PUE was reduced from 1.8 to 1.28. It was selected as the "2024 Outstanding ESG Case of Chinese Enterprises" and the "2024 Best Practise Case for Sustainable Development of Chinese Listed Companies".



ow-carbon technology applied at Qinghai Unicom Haihu Comple Building Hub Room Air Conditioner Outdoor Unit

# Improving resource utilisation efficiency

China Unicom adheres to the circular economy principles of reduction, reuse, and recycle, enforcing strict control from the source of equipment procurement, advocating green consumption and green living concepts, promoting the use of green clean energy, and effectively enhancing the digitalization, intelligence, and greening levels of corporate operations. The Company's production process does not involve industrial wastewater and exhaust emissions, and it is not classified as a key pollution discharge unit.

#### Exploring new energy and carbon trading mechanisms

Actively responding to renewable energy development plans, the Company conducted research and pilot projects on various comprehensive energy utilisation technologies, actively participated in green electricity market trading, and advanced the deployment in carbon trading to gradually increase the proportion of renewable energy usage.

• The Company promoted the application of green clean energy, with a steady increase in the proportion of renewable energy consumption. According to equivalent sunlight duration and peak-valley electricity price differences, the Company promoted differentiated distributed photovoltaic power supply technology. We promoted pilot applications of various energy storage technologies such as lithium battery storage and vanadium redox flow battery storage, and used water-cooled energy storage technology in suitable data centres. We conducted research on comprehensive energy utilisation technologies such as waste heat recovery and multi-energy complementarity. • The Company followed up on energy and carbon trading policies and market research. Beijing Unicom and Shenzhen Unicom have been included in the regional carbon trading market scope, conducted local carbon quota and CCER (China Certified Emission Reduction) trading, completed compliance on time, and guided green resource allocation.

Beijing Unicom actively fulfils its emission reduction obligations. According to the requirements of the Beijing Municipal Ecology and Environment Bureau that "the carbon emissions of key carbon emission units using green electricity purchased through market-based means are accounted as zero". it consumed approximately 52 million kWh of green electricity in 2024, equivalent to a carbon reduction of about 31,000 tons (which can be used for carbon compliance). The Company was awarded the district-level green electricity application unit honour and received green electricity funding reward of RMB500,000.

## Promoting the recycling of materials

The Company strictly abided by the Circular Economy Promotion Law of the People's Republic of China and other laws and regulations, and established management systems such as the China Unicom Fixed Asset Revitalisation Management Measures and the China Unicom Obsolete Material Disposal Management Regulations. In the areas of network construction, network operation and maintenance, and office operations, fixed assets are revitalised, waste materials are meticulously managed and effectively recycled, enhancing resource utilisation efficiency.

# Promoting the revitalization and utilisation of fixed assets

• The Company closely integrated investment planning, material procurement, and asset disposal with the revitalization and utilisation of fixed assets. We prioritised the use of internal revitalization methods for incremental assets, implementing measures such as internal revitalization allocation, scrap for reuse, and asset transfer. We enhanced the integration of internal resources across departments and regions to achieve resource sharing and rational utilisation.

• The Company promoted the revitalization of network-related fixed assets, regularly organised business inspections and asset stocktaking based on the Company's overall network planning and asset efficiency to form revitalization lists, demand lists, and scrapping lists, and organised the implementation of revitalization.

• The Company promoted the revitalization of digital fixed assets, conducted testing and desensitisation of reused terminals, and utilised the asset revitalization platform to publicise inventory and manage usage, effectively improving the utilisation efficiency of hardware equipment such as servers, network devices, and terminals.

#### Classifying and processing waste

• The Company continuously strengthened the management of solid waste, revised and published the "China Unicom Scrap Material Disposal Management Regulations", and regularly collected bidding information from the online bidding platforms and company-wide disposal data, categorising the status of material disposal to assist each branch (subsidiary) in improving disposal efficiency.

 The Company strengthened classification management. The generated waste was categorised by use into network type, digital type, etc., and by environmental impact into hazardous and non-hazardous waste. The hazardous waste primarily included storage batteries, fluorescent tubes, and toner cartridges, while non-hazardous waste mainly comprised office waste and telecommunications equipment and IT equipment not involving chemical waste.

 The Company continuously deepened the online auction disposal of scrapped materials, seamlessly integrated China Unicom's supply chain platform with internet auction platforms such as Alibaba Auction and Zhongbo Auction, achieved digital collaboration, publicly released information on China Unicom's scrapped materials, and promoted the dual circulation of internal enterprise resources and social renewable resources.

• In terms of the disposal of digital waste, a complete process has been established for assessing the reasons for material scrapping, submitting material scrapping applications, conducting technical identification and review of scrapped materials, and handling the accounting of scrapped materials. A monthly reporting and scheduling mechanism has been set up to strengthen the demagnetization and desensitisation treatment of storage media in scrapped equipment, promote closed-loop disposal of scrapped materials to prevent environmental pollution, and expedite the recovery of asset residual value.

• The Company promoted the reduction and harmless disposal of hazardous waste. When disposing of battery waste, the Company strictly followed environmental protection regulations, and had qualified recyclers with hazardous waste certificates bid for disposal. Additionally, the Company completed the transfer procedures according to local requirements. The Company recycled toner cartridges and ink cartridges, and when they could not be used, they were dismantled in a harmless manner, while materials such as metals and plastics were recycled and reused. Used lamp consumables were collected centrally by professionals for easy reuse.

• The Company strengthened the reduction and classification of non-hazardous office operational waste and advocated employees to reduce consumption at the source to minimise waste. The waste was disposed of according to the local waste classification regulations in each region. The headquarters and directly affiliated units adhered to the relevant standards for waste classification in Beijing. After classified collection, the waste was transported to the processing system for resource utilisation, incineration, or landfill. Large waste, construction waste, recyclables, and other dry waste undergo coordinated pretreatment; kitchen waste, garden waste, and other wet waste undergo coordinated resource treatment.

Income from disposal and recycling

RMB U

# Advocating for lightweight and reduced packaging

During the renovation and modification of the Unicom business outlets, including fixtures and fittings, environmentally friendly materials are strictly selected and used. The use of packaging materials is minimised through reasonable design, with a preference for degradable materials. Centralised procurement and unified packaging are implemented, and materials are recycled and reused after project completion, striving to reduce environmental impact while ensuring quality and safety.

#### Promoting green consumption

The Company collaborated with multiple mobile phone manufacturers to launch the "Unicom Trade-In" service, providing users with more affordable trade-in subsidies to enhance the convenience of recycling. Users can enjoy one-stop services at offline business outlets, establishing standards in areas such as "satisfactory pricing", "secure data", and "hassle-free service", thereby accelerating the participation of idle old devices in the green recycling cycle.

Inner Mongolia Tongliao Unicom held 18 and 51 trade-in internal purchase events at self-operated and township offices, respectively.



#### Implementing green office

China Unicom advocates green office and green operations, promoting paperless office, online meetings, energy-saving renovations of office buildings, and other low-carbon measures. It encourages the concepts of green consumption and green living, creating a green and healthy office environment to reduce resource consumption in office activities.

• Enhancing the paperless service experience. China Unicom APP was upgraded to version 12.0, with 2.65 billion online transactions conducted throughout the year, issuing electronic invoices to save 19.64 million sheets of paper, enhancing service experience through green and low-carbon operations.

 Implementing paperless office. The Company implemented the digitization of official documents using the digital archive system, and continuously explored and promoted the filing and management of various types of electronic document files in a single set system.

· Strengthening water conservation management. The Company's production process primarily uses domestic water and water-cooled air conditioning circulation water. In terms of water-saving management of the air-conditioning system, the water supply equipment adopts a tiered pump group configuration, automatically controlling the number of water pumps started, and operates with variable frequency and speed. In terms of daily water conservation management at China Unicom Building, the renovation of the building's water system achieved 9% energy savings, and the renovation of domestic water supply pumps achieved energy savings of 2% to 5%. Rainwater and leftover drinking water are collected for recycling. Equipment maintenance and inspection are strengthened to prevent leakage. The Company establishes living waste water treatment system, pre-treats wastewater before discharge, ensuring compliance through discharge monitoring. The total water consumption for the year was approximately 15.68 million tonnes, with the headquarters and affiliated units discharging 260,000 tonnes of domestic waste.



China Unicom APP 12.0 new version brings a green and low-carbon service experience

• Strengthening office energy consumption management. China Unicom Building adopts a smart energy management system to intelligently manage daily energy consumption. Relying on the intelligent control algorithm for cold sources, the Company enhanced the data access and intelligent control levels of water, electricity, and environment, thereby reducing equipment energy consumption. The Company refined management of operation period, indoor temperature settings, etc., to reduce air conditioning energy consumption. We conducted "green lighting" activities, strengthened daily inspections and lighting management in office and public areas, and reduced lighting energy consumption.

Recycling of water at headquarters and affiliated units

206 tonnes



China Unicom accelerates the construction of its energy and carbon management operational system

#### Empowering low-carbon living

China Unicom, leveraging the account capabilities of its payment company, took the lead in launching the "Unicom Carbon Life" carbon inclusive application. The carbon emission reduction calculation model was the first to be certified by a national authoritative institution, filling the gap in the personal carbon account field within the telecommunications industry and empowering the green transformation of the lifestyle of hundreds of millions of subscribers. "Unicom Carbon Life" was selected into the "Collection of Excellent Green and Low-Carbon Practises of Central Enterprises" by the SASAC of the State Council and won 11 domestic and international honours including the International Finance Forum's "5th IFF Global Green Finance Innovation Award".

#### Promoting green culture

In conjunction with the themes of the National Energy Conservation Publicity Week and the National Low-carbon Day, various promotional activities were organised, including "Low-carbon Micro Experience" activities for employees. News related to the achievements in green and low-carbon development was reported by multiple media outlets such as People's Daily Online, People's Posts and Telecommunications News, and Sina.com. Beijing, Chongqing, and other regions sent public service SMS messages promoting energy conservation to the general public, supporting society-wide energy conservation advocacy.



"Unicom Carbon Life" empowers the green transformation of subscribers lifestyle



# Serving the joint development of the "Belt and Road"

China Unicom has continuously contributed to the construction of the Digital Silk Road, formulating and deeply implementing the Belt and Road Initiative action plan for seven consecutive years.

# 🖉 Striving to build an extensive international network system

China Unicom, as a major operator of the global backbone three-dimensional internet network and a key builder of the new digital infrastructure under the "Belt and Road" initiative, continues to contribute its strength to creating a new space for win-win development that is of higher level, more resilient, and more sustainable.

#### Renewing and upgrading digital infrastructure

China Unicom has revitalised and upgraded digital infrastructure, continuously promoting interconnectivity of network facilities. The number of overseas PoPs has reached 140, with 57 PoPs located along the Belt and Road regions, further enhancing the assurance capability of PoP network routes.

• In 2024, the allocated capacity of submarine cables in the direction of "Belt and Road" increased by 10.9T to 57.2T; in the direction of Asia, Africa and Europe, the capacity increased to 12T; and the capacity of cross-border land cables in mainland China increased to 51.6T.

• The Company vigorously promoted the balanced distribution of Internet traffic towards the 'Belt and Road' direction, with the proportion of traffic in the 'Belt and Road' direction increasing from 47% to 53%, an increase of 6 percentage points. The two major indicators of international internet packet loss rate and internet latency have maintained a good level. • IP Transit focuses on Singapore, Bangkok, Phnom Penh, and other key cities along the "Belt and Road" initiative, as well as 15 other important hotspot cities, achieving comprehensive resource upgrade and optimisation to ensure that local access users can access over 95% of local content via the shortest path.

# Continuously enhancing interconnection

China Unicom continuously expands its range of operational services and accelerates the enhancement and strengthening of branch offices along the "Belt and Road". Currently, 39 branch offices have been established globally, including 24 in the Belt and Road regions, providing comprehensive coverage and support for the northern, central, and southern routes of the Belt and Road countries and regions.

• The Company strengthened the deployment in the Middle East, South America, Central Asia, and the Greater Bay Area, with the establishment of 6 new branches in the Belt and Road region, including the Peru Representative Office, Saudi Branch, Middle East Company, Uzbekistan Representative Office, Macau Company, and China Unicom (Hong Kong) Innovation Research Institute Limited.

# Continue to provide excellent and high-quality global customer service

China Unicom continuously embraces global partners with a more open attitude, striving to provide high-quality products, services, and solutions to global customers, and jointly build a digital future.

# Attentive service for global customers

China Unicom fully leverages its international network resource advantages and global operational service capabilities to continuously provide high-speed, stable network connectivity services and integrated information solutions combining computing, network, and data security for enterprises along the Belt and Road. It has become a trusted international digital value creator for its customers.

• Relying on China Unicom Digital Technology's Co. Ltd.'s self-developed capabilities, we continue to excel in iconic projects and "small but beautiful" projects, including the ASEAN Thailand Midea 5G Smart Factory project, Vietnam TCL Tongli ICT project, Cambodia Empire Factory and Office Building Weak Current Integration project, Middle East and Africa Egypt Suez Economic and Trade Cooperation project, Saudi Meituan Opening Package project, Russia Kingsoft Cloud project, etc. Throughout the year, we dispatched special teams of 30 people in total to companies in countries along the "Belt and Road" region, supporting the implementation of more than 20 projects.

• We provided customised services tailored to the different industry characteristics of corporate clients along the "Belt and Road" initiative, such as offering firewall, intrusion detection, DDoS security protection, IDC and supporting value-added services for the digital new media industry; for the financial and science and education industries, we provided financial premium network, disaster recovery backup data operations and maintenance, as well as overseas intelligent computing comprehensive services. These services fully meet the diverse needs of enterprises across various industries, helping corporate clients enhance operational efficiency and business continuity.

#### Supplying high-quality international products

China Unicom actively provides overseas customers with Connectivity and Communications and Computing and Digital Smart Applications products as well as global solution services, continuously enriching the structure of international business and enhancing the development of excellent products.

• In the consumer market, the Company developed the "Belt and Road" international roaming monthly package and multi-day package products. In the overseas mobile services, we used the "one card two numbers" products to serve Singapore, accelerating the reach across the entire ASEAN market.

• In the government-enterprise market, international express lines products have achieved business coverage between 31 provinces domestically and 12 cities in the "Belt and Road" regions, optimising the delivery period from 31 provinces to cities such as Singapore, Ho Chi Minh City, and Hanoi, reducing it from 26.2 days to 24.9 days.



# Continuously deepening international cooperation

China Unicom, guided by technological innovation and driven by open cooperation, continues to deepen strategic partnerships with ecological partners along the Belt and Road Initiative, jointly exploring new models of ecological cooperation in international markets.

• The Company continuously strengthened cooperation with overseas operators through inter-system API integration, joining the global operators' organisation MEF, and unifying the use of Sonata API as a standard, to achieve interconnectivity, continuously promote digital transformation, integrate resources among operators, expand the ecosystem, and enhance cooperation efficiency.

• China Unicom Global Limited (CUG) has developed the UP Programme international operator cooperation platform with "U" as the main theme, launching the UP Programme initiative. This involves partnering with like-minded partners to share successful experiences, advanced business models, and innovative applications through the UP Programme, exploring new trends, new directions, and new hotspots, thereby enhancing synergies and achieving mutual success in cooperation.

#### Carrying out compliance and integrity management

China Unicom conducts various activities overseas in compliance with laws and regulations, strictly adhering to local market order, business rules, social customs, and cultural practises. In 2024, CUG continued to deepen the construction of the overseas compliance management system, combining with the actual situation of overseas operations to effectively ensure global compliance operations.

 The Company continued to deepen the construction of the overseas compliance management system, conduct compliance training and risk identification and inspection based on the actual situation of overseas operations to ensure compliant operations.

• The Company safeguarded the legitimate rights and interests of local employees and addressed local employment issues. The number of local employees employed by CUG was 1,272, with a localization recruitment ratio of 98.07%.



China Unicom was awarded the 2024 GSMA Best Mobile Technology Breakthrough – Asia award



China Unicom was awarded the Best IoT Solution Award at the 2024 CC-Global Awards

CUG successfully obtained the ISO 37301 international compliance management system standard certification.

# Warmly providing meticulous overseas livelihood services

China Unicom has always adhered to its original intention of rooting in overseas markets, serving local communities, and enhancing people's wellbeing, injecting momentum into improving the welfare of people in countries along the Belt and Road.

# Opening the door to cultural exchange

China Unicom actively engages in various cultural exchange activities overseas, striving to build a bridge connecting China and the world, fostering the broadest consensus for cooperation and mutual success among different civilizations, and contributing Unicom's strength to the construction of a community with a shared future for mankind.

## In the United Kingdom

• The Company organised the "China Unicom Cultural Tour" event, inviting over 20 teachers and students from the University of Reading in the UK to visit and exchange at China Unicom (Europe) Operations Limited. Through various forms such as on-site visits, lecture sharing, and one-on-one interactions, the Company provided young students with practical opportunities and career guidance, allowing them to gain in-depth understanding of the latest developments and corporate culture of Chinese telecommunications companies overseas, building a bridge connecting education with practise, and China with the world.

# In Singapore

• The Company actively hosted the second "Unicom Rongsheng Investment Cup" Badminton Friendship Tournament and the second "Unicom Cup" Football Friendship Tournament organised by the Chinese Enterprises Association in Singapore, actively fulfilling the responsibilities of overseas central enterprises. Through a variety of cultural and sports activities, it provided a platform for communication among employees of Chinese enterprises, enriched their leisure life, strengthened their physical fitness, and united Chinese enterprises in Singapore. It deepened exchanges and cooperation between enterprises, enhanced cohesion, and contributed to the overseas development of Chinese enterprises with practical actions.

# In Cambodia

• The Company organised the sub-forum "China-Cambodia Digital Economy and Youth Development" of the "2024 China-Cambodia Youth Dialogue", gathering outstanding student representatives from more than ten top universities in China and Cambodia, including China Foreign Affairs University and Royal University of Phnom Penh. The attending guests engaged in in-depth exchanges and interactions with the youth representatives, building a valuable bridge for mutual learning and sharing of wisdom between the youths of the two countries.

# Heartwarming participation in overseas charity



Teachers and students from the University of Reading in the United Kingdom visited China Unicom Europe.



Group photo of the second "Unicom Rongsheng Merchants Cup" Badminton Friendship Tournament



China Unicom actively engages in diverse social welfare activities within local communities, effectively conveying the care and warmth of overseas central state-owned enterprises to local citizens.

On 11 April 2024, China Unicom held the "China Unicom Community Care – Beware of Telephone Scams Seminar" event in Hong Kong, aiming to enhance the community residents' awareness of telephone fraud prevention and improve the public's ability to use telecommunication services wisely. Residents expressed their sincere gratitude to China Unicom for its care and concern for community residents.



Hold the "China Unicom Community Care - Beware of Telephone Scams Seminar" event

On 29 June 2024, at the significant moment of celebrating the twenty-seventh anniversary of Hong Kong's return to the motherland, CUG Volunteer Team actively organised and carried out social welfare activities with the theme of "Promoting filial piety and extolling the kindness of parents, China Unicom Parents' Fun Day". This action has been highly recognised by the elderly and community residents, who expressed that China Unicom's care and concern made them feel the warmth and respect of society.



Carrying out the "Promoting Filial Piety and Extolling the Kindness of Parents, China Unicom Parents' Fun Day" social welfare activity

# Jointly building a cooperative ecosystem

China Unicom adheres to the strategy of integrated innovation, leveraging the governance advantages of integration and openness, actively cultivating new growth drivers with partners, accelerating the development of new quality productivity, and jointly pursuing a path of high-quality development through collaboration and integration with partners.

# Strengthening strategic cooperation management

China Unicom strengthened strategic cooperation under strategic guidance, further improved the strategic cooperation management system, continuously expanded the breadth and depth of strategic cooperation, and consistently promoted new achievements in high-level openness.

# Improving the strategic cooperation management system

According to the "China Unicom Strategic Cooperation Management Measures", a tiered and classified management of group-level strategic cooperation is implemented, clarifying responsibility interfaces, standardising cooperation processes, and establishing a full life cycle closed-loop management of cooperation proposals, agreement drafting, cooperation signing, and execution evaluation. The Company established a sound cross-departmental coordination mechanism for strategic cooperation, formed a strategic cooperation working group to drive comprehensive enhancement of strategic cooperation through the effective implementation of major cooperation projects and regularly follow up on the progress of strategic cooperation work to ensure its successful implementation.

# Expanding the breadth and depth of strategic cooperation

The Company focused on its main responsibilities and core businesses, comprehensively deepened open cooperation, established mutually beneficial partnerships with various partners, created new value for Connectivity and Communications, and explored new Blue Ocean for Computing and Digital Smart Applications. In 2024, China Unicom established strategic cooperation relationships with nearly 200 ministries and commissions, healthcare institutions, universities, central enterprises, and top industry clients in fields such as technological innovation, intelligent computing, digitalization, 5G applications, and global development.

China Unicom, in collaboration with China Agricultural University, launched the UniAl Fan Li model 2.0. This model is a paradigm of smart fishery, covering all dimensions and the entire life cycle of aquaculture, achieving full application scenario coverage for 59 species. The model integrates multi-modal data such as text, video, and images, realising intelligent automation of control and monitoring.



China Unicom, in collaboration with China Agricultural University, released the UniAl Fan Li Large Model 2.0

China Unicom, in collaboration with the National Museum, leveraged the advantages of digital twin, 3D modelling, and edgecloud rendering technologies to apply metaverse technologies such as full-real image, digital humans, and VR virtual museums to the "Chinese Civilization Cloud Exhibition" project. This initiative created an online entrance for the "Ancient China Hall" of the National Museum, where digital intelligent guides lead audiences through an immersive exhibition experience.



The digital intelligence figure "Ai Wenwen" brings the audience on a magical journey of "stepping into a painting in the morning, dreaming back a thousand years in a day".

# Enhancing the integrated and open corporate image

 On 19 July 2024, "A Century of Legacy, Thirty Years of Innovation" China Unicom Partners Conference was successfully held. The conference, themed "Advancing Together for a New Intelligent Era", proposed to focus on network innovation, technology innovation, and service innovation. It aims to further enhance cooperation efforts, expand cooperation areas, deepen cooperation levels, upgrade cooperation models, and improve cooperation standards, thereby uniting efforts from all sectors to jointly draw a new chapter of Chinese-style modernization.

• The China Unicom Partners Conference was attended by more than 38,000 participants, with over 100 partners signing agreements.

 China Unicom has established a unified Unicom Partner Portal as an important bridge between Unicom and its partners, externally providing an efficient, convenient and secure online centralized cooperation service platform to provide partners with a clear and convenient channel for cooperation, and internally realizing the sharing of business opportunities through the system's interoperability of information, sharing of resources and business synergies.



China Unicom Partners Conference



Unicom Partners Portal

# Comprehensive deepening of technological cooperation

China Unicom focuses on areas such as computing power Al Network, big data, and artificial intelligence, engaging in strategic cooperation with national laboratories and universities, establishing dedicated R&D funds, jointly building diverse innovation platforms, conducting collaborative technological research, cultivating scientific and technological talents, promoting deep integration of government, industry, academia, research, and application, and building national strategic scientific and technological strength.

• The Company jointly established an innovation centre/joint laboratory with Beijing University of Posts and Telecommunications, Purple Mountain Laboratories, and Zhejiang University.

• The Company jointly established the Enterprise Innovation Development Joint Fund with the National Natural Science Foundation (first batch of central enterprises in 2024).

- The Company led the establishment of the Ministry of Culture and Tourism's Tourist Behaviour Monitoring and Decision Service Technology Innovation Centre.
- The Company participated in the construction of provincial-level laboratories in Shandong, Henan, Zhejiang, and other provinces.

In May 2024, China Information Technology Designing & Consulting Institute, Zhiwang Research Institute, Suzhou Unicom, and Purple Mountain Laboratory collaborated to carry out the commercial deployment of a sub-metre level 5G positioning system at the Suzhou HYC Technology Factory (Phase II). On 22 June, the 5G-A High-Precision Integrated Positioning National Commercial Promotion Conference was held, where representatives from dozens of leading enterprises in the high-end equipment industry visited the workshop to observe the system operation demonstration.

On 11 June 2024, China Unicom signed a strategic cooperation agreement with Zhejiang University and unveiled the "Zhejiang University-China Unicom Qizhen Computing Power Centre", "China Unicom University Intelligent Computing Centre Demonstration Base", and "Zhejiang University-China Unicom Digital Security Joint Laboratory". The two parties will focus on new infrastructure construction, high-level technological innovation cooperation platforms, collaboration in computing power, 5G empowerment across various industries, digital education application development, and talent cultivation cooperation, to deepen multi-level and comprehensive industryacademia collaboration.

# China Unicom, in cooperation with Purple Mountain Laboratory, completed the nationwide commercial launch of the 5G-A high-

# precision positioning system.

合作签约仪式

# China Unicom signed a strategic cooperation agreement with Zhejiang University

# Broadly expanding industrial cooperation

China Unicom focuses on strategic emerging industries and future industries, deepening cooperation in the industrial chain, supply chain, and value chain to achieve complementary resource advantages, better serve customers, and expand the market.

#### Building an ecological alliance

• The Company continuously strengthened the ecosystem carrier of the 5G Application Innovation Alliance, aggregating over 4,000 partners and gathering highquality ecological resources from upstream and downstream of the industry chain, including chips, modules, platforms, network equipment, and solutions, to incubate over 1,000 innovative products in 5G terminals, networks, and application security.

• The Company engaged in open privilege ecosystem cooperation to build a comprehensive privilege ecosystem covering areas such as video, entertainment, living, education, medical care, and travel, allowing a wide range of subscribers to easily enjoy high-quality privileges and connect to a better life together. Currently, China Unicom has partnered with over 150 leading privilege partners to jointly serve hundreds of millions of privileges subscribers.

# Deepening joint chain action

• China Unicom actively fulfils its responsibility as the leader of the modern industrial chain for network security, adhering to an industry demand-oriented approach, strengthening industry collaboration, establishing a coordination mechanism, and building a collaborative platform. The Company took deepening cooperation as the entry point, actively promoting precise alignment among all parties in the industry chain, coordinating efforts, and initially forming a new paradigm of industry chain development driven by central enterprises and integrating the development of large, medium, and small enterprises.

• The Company deepened the "Security Hub" Chain Bridge Co-Creation Action Plan, opening up seven major security areas to a wide range of partners: network security, terminal security, data security, security services, cloud security, emerging field security, and IoT security. The Company attracted high-quality security enterprises in the industry chain to jointly create over 140 security products, empowering thousands of industries and serving over 15,000 customers, covering 31 provinces and more than 270 cities. The scale of partner revenue exceeded RMB390 million.



On 19 July 2024, at the China Unicom Partner Conference Network Security Modern Industry Chain Co-Chain Action and Industry Development Summit Forum, China Unicom in collaboration with Huawei released the "Trusted Network Practise White Paper", launched the "China Network Security Industry Innovation Development Alliance", and announced the "Security Industry Chain Joint Overseas Plan" along with a series of cocreation achievements in the modern network security industry chain.



China Unicom convened the Network Security Modern Industry Chain Co-Chain Action Plan and Strategic Emerging Industry Co-creation Kick-off Conference

#### Promoting sustainable development of the supply chain

# Enhancing supply chain management standards

• The Company strengthened the construction of the group and provincial-level centralised procurement operation system, regulated supplier management according to the 'China Unicom Supply Chain Management Measures', and built a fair, sound, and transparent cooperative environment.

• The Company implemented positive and negative behaviour list management to promote the joint fulfilment of social responsibilities by upstream and downstream supply chain partners. The Company continuously optimised the management mechanism of the supplier blacklist, releasing the fourth batch of 24 blacklisted suppliers, including 17 on the banned list and 7 on the restricted list.

 In the benchmarking assessment of procurement and supply chain by the SASAC of the State Council, China Unicom was rated as an A-grade enterprise, ranking 5th.

Shandong Unicom has developed a modern supply chain characterised by lean, collaborative, intelligent, and green practises, achieving significant results in systematic management of tender procurement, comprehensive integration of structured bidding processes, and the establishment of a contract performance guarantee system. In the 2024 "Jingcai Cup" National Finals for Typical Cases in Information and Communication Procurement, it achieved excellent results, winning 1 first prize, 1 second prize, and 1 third prize, as well as the Outstanding Contribution Award.

#### Building a green supply chain

• The Company optimised supplier selection criteria by incorporating ESG elements related to environmental and energy emissions such as ISO 14001 and ISO 50001. We included evaluation criteria for energy saving, consumption reduction, low carbon, and environmental protection in the tender documents. We enhanced the requirements for using green materials and green manufacturing processes to guide suppliers in increasing their efforts in green product R&D.

• The Company promoted the use of green packaging by suppliers, ensuring that the products provided meet the requirements for green packaging. We do not use toxic or hazardous substances as packaging materials, and we utilise recyclable, degradable, or harmless packaging materials and avoid excessive packaging. We minimise the consumption of packaging materials as much as possible while meeting the needs.

• The Company emphasised environmental protection, energy conservation, and low carbon in the procurement process, while the centralised procurement ratio reached 99.7%.

Ensuring the security and stability of the supply chain

• The Company established a cross-departmental supply risk assessment and assurance team to continuously monitor and focus on the domestic and international supply chain security situation, regularly organise supply chain security analysis, comprehensive inspections, and early warnings, and formulate effective response measures.

• The Company established a robust risk response mechanism, strengthened independence and controllability, and reduced bottleneck risks. We enhanced on-site inspections to eliminate potential risks of supply shortages, dynamically matched supply and demand to reduce upstream and downstream production and sales mismatch risks, and established emergency plans to effectively handle potential risks.

• The Company optimised supply chain structure, diversifying supply assurance and increasing the application of self-developed achievements to achieve diversification of technology sources. We established forward booking procurement to achieve diversification of supply resources, reasonably selecting factory distribution to achieve diversification of supply origins. We linked upstream material prices to achieve sustainability of supply capability. 38,000 new suppliers were added in the year.

• The Company innovatively adopted a smart supply chain platform, established a comprehensive analysis model, and effectively diagnosed risks such as supplier shutdowns and reduced production capacity through internal data like contract orders, delivery confirmations, supplier evaluations, online consultations, and publicly available government information.

 The Company strengthened supplier verification, conducted information verification for 526 times throughout the year, and rejected suppliers 32,274 times due to non-compliance or failure to meet bidding requirements.

• The Company established a special reserve mechanism for critical materials, built a dedicated system to manage reserve materials, and implemented the "special zone, special warehouse, special management" approach for reserve materials as a contingency plan to ensure supply chain security in necessary situations.

Region	Nationwide	East China	North China	Central China	South China	Southwest	Northwest	Northeast
Number of suppliers (thousand)	127	41	21	19	15	11	9	11

#### Equal treatment for small and medium enterprises

• The Company published the "Guiding Opinions on the Qualification Conditions and Evaluation Criteria Setting for China Unicom Tender Projects" to ensure equal participation opportunities for small and medium-sized enterprises, creating an open, fair, and transparent tendering environment.

• The Company made timely payment to small and medium enterprises and issued the "Notice on Implementing the Strict Regulation of Central Enterprises' Payment to Small and Medium Enterprises", requiring all levels of units to pay great attention to the issue of arrears and strictly comply with the "Six Prohibitions" requirements of the SASAC of the State Council. The Company organised a comprehensive nationwide survey and review of outstanding payables, forming a closed-loop dynamic update mechanism and regularly conducting data verification and cross-checking to ensure the authenticity and accuracy of ledger data. As at the end of 2024, the balance of accounts payable (including bills payable) accounted for less than 30% of total assets, with no overdue payments to small and medium enterprises.

# Accelerating the development of industry-finance cooperation

China Unicom strengthened the integration of the "innovation chain, industrial chain, capital chain, and talent chain" by actively supporting industrial development through methods such as guiding investment, cornerstone investment, leading and following investment, relay investment, and joint ventures and mergers.

• Expanding the integration of production and investment. China Unicom focuses on its core responsibilities and main business, continuously increasing its equity investment deployment in strategic emerging industries, future industries, and the construction of chain leaders and chain masters. It emphasises efforts in areas such as computing power Al Network, data technology, and model technology integration and innovation. The Company effectively utilises long-term capital, patient capital, and strategic capital to promote production through investment and achieve synergy between production and investment, actively transforming into a technology service enterprise.

• Strengthening research and investment collaboration. The Company fully leveraged the critical role of equity investment in supporting technological innovation, anchored the deep integration of the innovation chain, industrial chain, capital chain, and talent chain, focused on the monetisation pattern of technological innovation and the growth cycle of enterprises, established a research-investment collaboration mechanism, built a research-investment collaboration platform, and explored the path of deep integration between technological innovation and industrial innovation.

• Revitalizing the Industry Fund. The Company upgraded China Unicom's RMB10 billion-level 5G industry parent fund to a strategic emerging industry parent fund, establishing a sub-fund cluster with a total scale of no less than RMB30 billion to discover high-quality forward-looking technology targets and drive the development of the main business. The Company prepared to establish the China Unicom Network Security Industry Fund with a fund scale of RMB1 billion to support the construction of the chain leader and the creation of a network security industry ecosystem.

# Continuously enhancing people's well-being

# 🖉 Actively engaging in public welfare undertakings

China Unicom focuses on people's livelihood concerns, engages in public welfare and charity undertakings, and makes active contributions to meeting the people's needs for a better life.

 The Company vigorously promoted the volunteer service spirit of dedication, friendship, mutual assistance, and progress, and encouraged and guided employees to actively participate in volunteer services.

• For regions affected by typhoons, floods, earthquakes and other natural disasters, the Company provided mobile phone, broadband, and fixed-line subscribers service without suspension. The 10010 hotline activated emergency support, established an emergency activation green channel, and continuously provided communication services.

• In collaboration with the China Youth Development Foundation, the "China Unicom Points for Education Programme" has been ongoing for six years, with a total donation of RMB9.095 million, supporting 8,562 impoverished rural students and establishing 19 libraries.

 The Company sent 49.55 billion public welfare and emergency messages, supporting policy promotion, anti-fraud and fraud prevention, emergency warnings, ecological protection, educational promotion, disease control reminders, and other livelihood guarantees.



Donation Project	Donation amount (RMB thousand)
Aid to border areas (aid to Tibet and Xinjiang)	53
Other donations (culture and sports, education, medical and health care, charity, environmental protection, etc.)	1,978
Total	2,031

Unicom Finance Company organised the "Hope for Blue Skies, Love in Transmission" cerebral palsy children care volunteer service activity. Volunteers visited the "Huiling Service Centre for Children with Intellectual Disabilities", accompanying the children in playing games, assembling puzzles, drawing, and singing, bringing laughter and warmth with enthusiasm.



Unicom Finance Company cares for individuals with cerebral palsy, spreading love and warmth

Volunteer organisation reached

**Registered volunteers** 

678 units

# 103,778 people

In the face of Typhoon "Yagi" (super typhoon level), the 10010 service hotline set up special major support service desks, providing services such as exemption from reminders and disconnections, emergency phone activation, and launched a family search hotline to help customers confirm the safety of their relatives during the typhoon.



10010 hotline initiated emergency support, providing uninterrupted communication services

Relying on the China Unicom Online Company's capability in points-based public welfare operations, and in collaboration with provincial branches across the country, a series of charitable actions such as "Points for Education Dream Fulfilment Action". "WO's Reading Together", "Dining with Good Deeds", and "Points for Disability Assistance" were carried out. In 2024, the Company jointly launched the "University Dream Fulfilment Action" with the China Youth Development Foundation to help young people develop healthily and grow into talents.



"WO's Reading Together" Hope Project Library



Charity Section of the Points Mall in China Unicom APP

China Unicom vigorously promotes the spirit of "serving the public and contributing to society", with Wu Jianbin from Fujian Xiamen Unicom, Wang Peishan from Longkou Branch of Shandong Yantai Unicom, Yan Shuai from Shandong Unicom and 4 others acting bravely and being respectively referred to by netizens as "Lifting Brother", "Most Beautiful Falling Melon Brother", and "Firefighting Guardian". They received honorary titles such as "Good Employee of China Unicom" and "Model of Bravery in Siming District".



Fujian Xiamen Unicom's Wu Jianbin Rescued Child hanging from Window



Wang Peishan of Yantai Unicom in Shandong urgently "smashed a melon" to save a person



4 employees of Shandong Unicom encountered a dangerous situation and instantly became "firefighting guardians

Anhui Hefei Unicom carried out companionship assistance for the elderly, in collaboration with professional medical institutions to conduct on-site free medical consultations and celebrate "Our Festival" together. Over two years, we have conducted more than 100 activities such as smart elderly assistance, caring visits, happiness classes, and holiday companionship, serving nearly 100,000 people and accumulating nearly 1,000 hours of service.



Anhui Hefei Unicom and medical institutions jointly organised on-site free medical consultations and medical science popularisation activities

# Conducting actions to support the elderly and assist the disabled

China Unicom has always regarded assisting the disabled and elderly as its responsibility, providing priority services to the elderly and disabled, continuously developing information accessibility technology products for the disabled, reducing the usage threshold of smart products, and offering smarter and more convenient services to special groups.

## Embarking on a care mode

China Unicom, with the "Care Mode", assists the elderly and visually impaired groups in bridging the digital divide. The China Unicom APP and China Unicom 10010 online service centre have launched the "Care Mode", while the China Unicom Smart Home APP has introduced the "Care Version", featuring enlarged text, enlarged icons, a simplified interface, and easy operation, along with voice broadcasting, making it more suitable for the usage habits of special groups.

• China Unicom APP provides a "Care Mode". In 2024, optimisation and upgrades were carried out for voice broadcasting, secondary pages, and the homepage, with an average daily service of 70,000 people, helping elderly subscribers and visually impaired groups further lower the operational threshold and enjoy the convenient services brought by digital life.

• China Unicom Smart Home APP provides a "Care Version", specifically designed for family care, integrating core functions such as device binding, smart fixed-line, health record management, and virtual experience, offering online consultation services for the elderly, providing a more comfortable and convenient smart living experience for the elderly groups.



China Unicom Smart Home APP launches 'Care Version'

#### Building heart-warming products

China Unicom focused on enhancing the high-level supply of products for the elderly and disabled, increasing the reduction of communication fees for special groups, continuously optimising the functions of the Hearing King Card, and improving call response speed, voice recognition speed, and accuracy to provide a smoother and more efficient communication experience for the hearing impaired.

• The Company launched exclusive concessionary packages such as the Filial Piety Card, Silver Age Card, and Evergreen Card for communities and rural elderly left behind, disabled persons, and other groups, providing care in telecommunications and life services for special groups.

• The Hearing King Card is the industry's first barrier-free communication product for the hearing impaired, jointly launched by the China Deaf Association, China Unicom, Tencent Charity, and Tencent Cloud Al. In 2024, it enhanced the response speed for answering/receiving to 8 seconds, with a rate increase of up to 50%, significantly improving the speed and accuracy of voice recognition on the mobile app by developing an in-house ASR voice recognition library for mobile devices.

Reduction in telecommunication fees exceeds

No. of disabled and elderly subscribers benefited



Provide barrier-free communication services for the hearing impaired



In July 2024, technicians received feedback from users of the Hearing Assistant about hang-up problems, quickly investigated and processed them, accurately analysed and traced the root causes, and resolved them promptly. Mr. Ding, the user, expressed high praise for the Hearing Assistant technical team through a letter of appreciation and a pennant.



no noung, boloune bonnou bannoonou a banno

#### Providing priority services

In 2024, all self-owned business outlets of China Unicom implemented priority services for the elderly and disabled groups. The Company provided caring seats in the business outlets equipped with guiding signs. In more than 5,300 standard and flagship outlets, the Company has set up green channels to provide a more convenient service experience for disadvantaged groups. For all 42,000 sales personnel, 24 sales skill training drills were conducted to comprehensively enhance the service level and service awareness of the sales staff, providing more considerate and professional face-to-face services to various groups in need of care.



Providing a more convenient in-store processing experience



Enhancing service awareness, prioritising age-friendly services

Tianjin Unicom optimises offline facilities and services for the elderly and disabled. Throughout the city, 174 self-operated business outlets have completed elderly-friendly renovations, as well as the establishment of caring stations and smart elderly service experience centres. Various elderly assistance service activities such as "Public Welfare Lecture Halls" and Silver Age entertainment activities were organised, providing a more convenient and comfortable service environment for the elderly.



Tianjin Unicom Elderly Assistance Volunteer Service Team Provides In-Home Services for the Elderly

# Serving Community Digital Life

# Upgrading the entire family's intelligent services

To enable residents to experience a more intelligent lifestyle, China Unicom's broadband service has been continuously upgraded comprehensively in terms of service teams, service capabilities, and service scope, with the smart home engineer team providing comprehensive smart services for families.

• The Smart Home engineers possess professional network design, installation, and maintenance capabilities, and can provide on-site wholehouse network optimisation and upgrade customised services for subscribers.

• The Company implemented the four broadband service commitments of "compensation for slow service, full-house testing, overnight repair, and carry-on service", providing community residents with "same-day installation and same-day repair" and "night repair within two hours" premium Smart Home customised services. 12 million households are already using China Unicom's full-house optical broadband service.

• Upholding the original intention of serving the people, the Company conducted free on-site broadband network inspection services for 11.33 million times.

• From 2024, the real-time satisfaction evaluation for broadband services has been implemented, with a positive rating reaching 99.7%.

Tuotuo River, the source of the Yangtze River, the lofty mountains and vast glaciers, constructed the local unique and fragile plateau ecology. Qinghai Unicom's Geermu Smart Home Engineer Si Qiu overcame the challenges of extreme environments, constructing gigabit fibre optic networks with dedication and commitment, and actively engaged in environmental protection, becoming a guardian of the information 'Heavenly Road' and the magnificent mountains and rivers.



Smart Family engineers support hometown construction

# Illuminating smart community living

Smart communities are becoming the bridge connecting technology and life. China Unicom utilises emerging technologies such as 5G, AI, and the Internet of Things to create five major innovative scenarios in community governance, community security, smart property management, digital life, and smart business districts, along with N innovative applications, constructing new units of future cities with new living experiences, new service models, new governance models, and new industrial methods.

• The Smart Community Platform has covered 6,861 streets and 17,598 community committees, providing services such as incident reporting, cultural and entertainment activities, online voting, and surveys to 9.548 million residents for over 40,000 times, effectively enhancing the level of grassroots community governance.

• The Company provides smart access control functions such as facial recognition and WeChat door opening, as well as intelligent Al monitoring functions like high-altitude object throwing surveillance and flame recognition monitoring, to achieve comprehensive intelligent supervision of people, objects, and events in the community, enhancing residents' sense of security.

• The Company provides convenient and efficient home-based elderly care services and one-click call, elderly care bracelet terminals for community elderly subscribers, enhancing the quality and level of community elderly care services.

# Caring for the well-being of the employees

China Unicom deeply implements talent-oriented corporate development, adheres to the strategic position of talent-led development, regards employees as the driving force for the Company's growth, respects the legitimate rights and interests of each employee, listens to the opinions and suggestions of every employee, focuses on the career development of each employee, creates a good workplace environment, and achieves an efficient and fulfilling professional life.

# Safeguarding the basic rights of employees

China Unicom implements legal and regulatory requirements, creates an equal employment environment, improves the compensation and benefits system, safeguards employees' social welfare, and enhances the Company's talent attraction and social influence.

# Adhering to fair employment

The Company strictly implements the "Labour Law of the People's Republic of China" and the "Labour Contract Law of the People's Republic of China" and other laws and regulations, comprehensively strengthens labour employment management, standardises various forms of employment, and always adheres to the principles of equality, voluntariness, and mutual agreement, ensuring 100% signing of labour contracts with employees. In the process of terminating labour contracts, the Company strictly implements relevant national policy requirements to protect their basic rights.

Adhering to the principles of fairness, openness, and impartiality, the recruitment process is strictly regulated to ensure fair employment of candidates. It is strictly prohibited to publish employment information containing discriminatory clauses against national regulations concerning ethnicity, gender, household registration, age, etc. It is also strictly prohibited to release false and fraudulent illegal employment information. Efforts are made to create a fair employment environment. During the reporting period, there were no incidents of child labour, forced labour, or employee abuse. We have zero tolerance policy forced labor and child labor. If such cases are discovered and confirmed after an investigation, we will pursue appropriate actions, including but not limited to initiating disciplinary actions, commencing legal proceedings and/or reporting to the appropriate governmental/regulatory authorities.

#### Improving compensation management

The Company continuously improved the management mechanism of compensation and benefits to encourage talent growth and innovative development.

The Company improved the total wage resource allocation mechanism, closely linking the growth of total wages with the Company's
operating performance.

• The Company deepened the reform of internal compensation distribution, optimised internal distribution relations, improved the protection mechanism for various groups, implemented a policy to raise the base salary for lower-level employees, covering 160,000 personnel.

The Company flexibly implemented medium- to long-term incentives, completed the unlocking of one unlocking period of the second phase
of restricted shares, achieving the sharing of interests and risks between employees and the Company.

The Company strictly implemented the regulations related to employees' working hours and rest and leave, ensuring the legitimate rights of
employees to take leave.

# Strengthening grassroots democratic management

China Unicom continues to enhance the construction of the tripartite democratic corporate management system comprising the "General Meeting of Staff Representatives", "Open Corporate Affairs", and "Employees' Advice and Suggestions", promoting consultation and cooperation between the enterprise and employees, co-building mechanisms, guiding both the enterprise and employees to establish a sense of shared interests, and fostering a positive environment where the enterprise cares for employees and employees contribute to the enterprise.

# Promoting participation in management

The Company organised and convened the 15th meeting of the second session of the employee representative assembly of the Group Company, exercising employees' rights to deliberate and propose, approve, elect, and conduct democratic evaluation and supervision in accordance with laws and regulations. The Company conducted the selection of outstanding employee representative proposals for the year 2024 and facilitated "faceto-face" experience exchange activities for handling employee representative proposals. The Company guided each unit to convene more than 610 staff congresses at various levels, scrutinized more than 1,600 items and collected more than 5,400 proposals, thus the foundation of democratic management of the enterprise has become more solid.

The Company deepened the construction of the corporate affairs open democratic system, guided the extension of corporate affairs openness to grassroots responsibility units, and conducted in-depth "Everyone Has a Clear Account in Mind" themed class meetings. Throughout the year, over 450 corporate affairs open release meetings were held at all levels, with over 1,700 public items. More than 40,000 thematic class meetings on clear accounts were held by grassroots responsibility units to ensure the coverage and effectiveness of disclosure.

#### Smooth communication channels for demands

Members of management teams at all levels and key responsible persons in relevant professional departments regularly listen to employee opinions, utilising various channels such as "General Manager Online" to widely gather employee suggestions and advice, focus on employees' mental dynamics, and address employees' urgent and difficult issues from the source, thereby assisting in building harmonious labour relations.



The 15th meeting of the second session of employee representative assembly at China Unicom



Shandong Unicom has equipped the grassroots grids across the province with a standardised "Enterprise Affairs Bulletin Board".



The provinces launched the "General Manager Online" special event, establishing a closer and more efficient communication bridge between enterprises and employees.

Conducted more than

sessions of General Manager Online activities throughout the year

# Mediating labour disputes

The Company strengthened the construction of grassroots labour dispute mediation organisations, establishing mediation bodies covering municipal branches. Employees can submit mediation applications to the local labour dispute mediation committee, which mediates conflicts between the parties involved in labour disputes according to relevant regulations. Upon reaching a mediation agreement, the trade union guides and urges the parties to actively, promptly, and fully fulfil the mediation agreement.

person-times

Number of participants exceeded

On-site collection and compilation of issues exceeded

A total of

10,000 cases



labour disputes were mediated

through the Mediation Organization for

Labour Disputes and handled with the direct participation of the Group's trade unions

On-site problem resolution rate reached over



# Creating an excellent talent team

China Unicom continues to cultivate fertile ground for talent, consolidate the foundation for talent, and nurture a deep affection for talent. It continuously improves the construction and capacity development of its talent team, creating a community of shared interests and values between the Company and its talent, fostering a core force that supports the Company's sustainable and healthy development.

# Planning Talent Development

The Company formed a "1+3" system framework led by the "China Unicom Talent Strengthening Enterprise Implementation Opinions", and coordinated the development of three teams: management talents, professional technical talents, and skilled talents. The Company continuously strengthened key developments in position management, performance management, and promotion management, implementing various incentive measures through systematic systems.

• The Company issued the "Position Management Measures (Trial) of China Unicom" to achieve job matching for all employees.

• The Company issued the "Guiding Opinions on the Implementation of the Unified System for Employee Performance Management of China Unicom", achieving performance appraisal coverage for all employees and providing a basis for implementing various positive and negative incentives.

 The Company issued the "Guiding Opinions on the Implementation of China Unicom's Employee Promotion and Incentive System", achieving dual-channel promotion for all employees.

# Strengthening talent recruitment

The Company implemented the national policy on employment stabilisation and comprehensively upgraded the talent recruitment policy system.

. The Company optimised the mechanism for introducing and cultivating young talents, targeted strategic emerging industries and future industries, deeply explored high-quality employment positions, and attracted more outstanding young talents to join.

• The Company actively built a school-enterprise cooperation ecosystem, deepened the "National Recruitment Action", implemented the "Sailing Plan" of the Communist Youth League Central Committee, clearly listed 28 group-level cooperative colleges, and organised the selection of 519 highpotential "new seedlings" for long-term continuous cultivation.

The Company optimised the flexible talent introduction mechanism and introduced 27 people.



9,277 temporary staff were hired from the market in mainland China. Note:

# Strengthening capability training

Focusing on the Company's main responsibilities and core businesses, a key training plan was formulated with the principle of full coverage for critical groups, constructing a tiered and categorised training system to deliver precise training for specific groups such as management personnel, outstanding cadres, and high-level talents.

Ongoing capability and quality training for management personnel.

The Company organised 178 sessions of research classes for central state-owned enterprise cadres, with a total of 19.521 participants.

• The Company organised centralized rotational training for China Unicom management personnel, with a total of 4,999 participants from all units of the Group.

• The Company selected 22 company management cadres and outstanding management talents to participate in the high-level ideological education training class.

Regularly conducting education on ideals and beliefs for outstanding young cadres.

• The Company organised 4 cadre talent development programmes, including spring and autumn training classes for young and middle-aged cadres and demonstration classes for outstanding management talents, with 174 participants.

Targeting high-level talents, implement joint training programmes between universities and enterprises for master's and doctoral engineering students.

• The Company jointly completed the recruitment of fulltime engineering master's and doctoral students for 2025 with 8 universities, currently jointly cultivating 180 engineering master's and doctoral students.

• The Company received 18 students to carry out enterprise practise.

Implementing independent capacity development for professional technical talents.

• The Company organised over 300 independent training projects for key capabilities and issued 12 capability certification schemes.

• The Company organised and completed a total of 16 batches of professional competence certification exams for governmententerprise and digitalisation, with approximately 150,000 participants passing.

Implementing job position training certification for front-line employees.

• The Company conducted a total of over 65,000 training sessions for more than 2.4 million front-line employees in sales, call centres, and installation and maintenance.

	2023	2024
Number of senior management personnel receiving training (person-times)	8,537	8,062
Number of middle management personnel receiving training (person-times)	328,463	301,520
Number of ordinary employees receiving training (10 thousand person-times)	469.3	436.1
Proportion of male employees participating in training (%)	98.5%	100%
Proportion of female employees participating in training (%)	98.5%	100%
Average training time of senior management (hours per person)	240	209
Average training time of middle management (hours per person)	171	152
Average training time for ordinary employees (hours per person)	112	106
Average training time of male employees (hours per person)	115	110
Average training time of female employees (hours per person)	115	105
Proportion of senior management attending training (%)	100%	100%
Proportion of middle management personnel attending training (%)	100%	100%
Proportion of ordinary employees attending training (%)	98.35%	100%

#### Holding skill competitions

The Company fully leveraged the function of the employee skill competition platform, replaced training with competition, empowered through competition, and continuously developed various professional talents that meet the needs of the Company's transformation and development by building a multi-level, multi-professional, and high-coverage group-level employee labour and skill competition system. The Company united and mobilised all employees to enhance skills and make contributions in the Company's high-guality development.



China Unicom Government-Enterprise Innovation Business Skills Competition



China Unicom Network and Information Security Skills Competition



2024 China Unicom International Business Sailing Cup Skills Competition



# Providing heart-warming services for employees

China Unicom cares about the physical and mental health of its employees, with a focus on caring for female employees and special groups, enriching the cultural life of employees during their leisure time, and creating a loving and warm corporate family.

# Focusing on physical and mental well-being

The Company adheres to the five-character strategy of "prevention, treatment, management, education, and construction", ensuring vertical and horizontal integration and comprehensive measures to safeguard employees' physical health and life safety, effectively protecting employees' health rights, and actively promoting the construction of a healthy enterprise.

• The Company promoted the construction of health cabins to provide employees with free health checks and consultations, and invited specialist doctors to offer diagnosis and consultation services for common and frequently occurring diseases among employees.

• The Company promoted the installation of AED defibrillators throughout the Company to provide multiple protections for employees' life and health. A total of 219 AED defibrillators were installed throughout the year, providing multiple safeguards for employees' health and safety.

• The Company carried out critical illness insurance and mutual aid protection work for employees, supervised the lawful implementation of working hours, employee rest and leave, and recuperation systems, to promote the physical and mental health of employees.

The Company continuously cares for employees' mental health by establishing a psychological consultation platform and a psychological crisis intervention hotline, conducting mental health seminars, and training mental health specialists to meet employees' mental health needs.

• The Company promoted the construction of mental health cabins, with a total of 180 "psychological stations" established nationwide, conducting a variety of activities such as team counselling, group salons, psychological consultations, and stress-relief massages.

• The Company continuously enhanced the professional level and service capability of the EAP specialist team, training over 600 EAP specialists, selecting 31 psychological lecturers, and conducting 298 lecture tours.



To further improve the employee mental health service system, China Unicom organised the 2024 EAP (Employee Assistance Programme) Specialist Training Course to enhance the professional level of EAP specialists, enabling each specialist to master programme design, crisis management, conflict resolution, communication, and team-building skills effectively. This initiative effectively promotes EAP work to penetrate the front lines and grassroots levels, enhancing the sense of happiness and belonging among employees.



EAP Specialist Training Course

#### Building humanistic care

China Unicom provides personalised care services for employees, strives to create a balanced and happy working environment, and enhances employees' sense of happiness.

#### Carrying out assistance and care

The Company promoted targeted assistance, in accordance with the requirements of "covering the bottom line, weaving a dense network, and building a mechanism", to create a "three-in-one" medical system of critical illness insurance, mutual aid fund, and supplementary medical care, comprehensively ensuring the stability of the lives of employees in need.

• The Company vigorously promoted the compensation work for critical illness insurance for employees in financial difficulty due to illness. In 2024, the entire group has cumulatively lifted over 400 people out of poverty and difficulty.

 The Company promoted employee medical mutual assistance, established a mutual aid fund system, and in 2024, the Company provided aid to more than 1,700 people, with a total disbursement of over RMB16 million.

# Caring for employees' children

The Company continuously improved the employee care service system, established and implemented work brands such as employee children custody and Golden Autumn Education Assistance, provided volunteer registration services for employees' children, distributed care packages and money to employees with children taking exams, and organised seminars and other activities. In 2024, a total of over 9,000 employees' children were provided custody service, and guidance for college entrance exam volunteer registration was provided to 6,386 employees' children.

#### Improving the working environment

The Company fulfilled the responsibility and commitment of central state-owned enterprises, promoting the continuous extension of 'service reach'.

• The Company used the "Five Small" construction as a starting point, building and creating a warm "staff home", with special funds of RMB22 million allocated for the construction of 630 grassroots projects across 23 provincial branches.

• The Company steadily advanced the "Trade Union Service Station Double 15 Project", promoting the construction of over 2,700 trade union stations, with a cumulative service to more than 1.35 million outdoor workers.

 The Company explored new models of cross-industry union organisation cooperation and co-building in collaboration with SF Express Union, so that over 150,000 employees could enjoy discounted courier services.

Heilongjiang Unicom's "Five Small Construction" received the honorary title of "National Health Enterprise Construction Featured Case". Heilongjiang Unicom will advance the "Five Small Construction" work as the focus of healthy enterprise construction. We have thoughtfully formulated two "Three-Year Plans", taking into account the older age profile of employees across the province, emphasising the theme of "health", and vigorously advancing the "Five Small Construction" project.



Heilongjiang Unicom "Five Small Construction" Project Site

Assistance fund for employees in difficulty amounted to



Provided support for more than



RMB**3.7** million has been invested

More than

# Protecting women's groups

The Company provided health care and psychological counselling services for female employees to protect their rights, fostering a work environment that respects and cares for female employees.

• The Company implemented the "Special Provisions on Labour Protection for Female Employees", ensured the protection of female employees during the "five periods", safeguarded their rights to rest and leave, and conducted psychological counselling for female employees.

• The Company conducted screenings for "two cancers" and health examinations for female employees, and promoted the construction of 404 breastfeeding rooms for female employees.

• The Company carried out "March 8 Festival" celebration and condolence activities, selected and commended 100 group-level "Heroines' Civilised Positions" and 100 "Heroines' Meritorious Models", created the "Blossoming at the Right Time" brand, promoted the spirit of heroines, and showcased the elegance of heroines.

# Enriching cultural and sports activities

The Company organised online and offline cultural and sports activities to enhance the physical fitness and cultural literacy of employees, enriched their leisure cultural life, and improved their well-being and literacy.



Shanghai Unicom Staff Sports Games



Sichuan Unicom Staff Sports Games



China Unicom Hunan balloon volleyball competition



Anhui Unicom Fun Sports Games

# Strengthen security support to consolidate the foundation for high-quality development



# Strengthen security support to consolidate the foundation for high-quality development

# 

China Unicom implements the overall national security concept, leverages its technological advantages, and maintains the baseline for secure development. It continuously provides highquality security assurance for society, protects the multi-dimensional security interests of the nation, enterprises, and individuals, and vigorously safeguards national cybersecurity.

# Measures adopted in 2024

- The Company promoted the construction of an active defence system to form a security protection mechanism for critical information infrastructure.
- The Company strengthened data classification and grading management to ensure user data is secure and controllable.
- The Company provided communication assurance services for 127 major national events and 9 "Cloud Diplomacy" major support services.
- The Company advanced the three-year action plan for fundamentally addressing work safety and the "Seven Key Tasks". Throughout the year, no major or above work safety accidents occurred.

# Actions to be taken in 2025

- The Company will build a strong and reliable network security defence system, upgrading defence capabilities from passive to active, from static to dynamic, and from single point to holistic.
- The Company will strengthen data security assurance and personal information protection to achieve highquality development and foster positive interactions with high-level security.
- The Company will consistently provide high-level communication support services for major national events.
- In accordance with the overall arrangement of the three-year action plan for fundamental improvement, the Company will enhance the quality of hidden danger inspections, promote the construction of digital platforms, strengthen basic management, and ensure the continuous stability of the safety production situation.

# Safeguarding cyberspace security

China Unicom adheres to the principle of coordinating development and security, focusing on the three major security objectives of "management standardisation", "operation deepening", and "value realisation". It steadily advances the Cybersecurity action plan, significantly enhancing its capabilities in coordinating development and security, proactively preventing and mitigating risks, and leading in ecosystem development.

# Forging core network security capability

China Unicom strengthens its role as the leader of the modern industrial chain in network security, focusing on core support strength, technological innovation driving force, and integration-led influence. This approach comprehensively enhances its core capabilities in network security.

Protection of Critical Information Infrastructure	The Company deepened the advancement of active defence system construction, formed a security protection mechanism for critical information infrastructure. It developed capabilities for DDoS defense, APT monitoring, attack traceability, improved emergency plans for extreme scenario, and ensured the safe and stable operation of critical information infrastructure. The Network Security Base Strengthening Project was selected as one of the first projects in the "Top 100 Projects" by the State-owned Assets Supervision and Administration Commission of the State Council.
Enhancing the overall level of network security defence	<ul> <li>The Company built a PB-level network security data resource pool, equipped with multiple high-intensity advanced network security attack defence capabilities. The capability to prevent cyber security risks has been significantly enhanced, successfully completing multiple important assurance tasks.</li> <li>The Company enhanced the security monitoring capability of IPv6 network routing and completed the first domestic operator's innovative demonstration application of a routing security solution based on the global Internet Resource Public Key Infrastructure (RPKI).</li> </ul>
	• The Company carried out the China Unicom Network and Information Security Monitoring Command Centre SOC2.0 Level 2 Compliance Certification, achieving standardisation of operational processes, quantifiable operational indicators and visualised operational quality.

# Safeguarding data security and protecting privacy

China Unicom has established a data security governance system integrating "management + technology + operations", focusing on the core technologies in data security. It strictly ensures the compliance and security of subscribers' privacy data collected across various service processes, including mobile services, broadband services, and fixed-line services, thereby safeguarding the flow and value realisation of data elements.

# Solidifying the foundation of data security management

• The Company strengthened data asset inventory management, ensured the identification of core, important, and general data. It enhanced data classification and grading management to ensure the security and controllability of subscribers' data.

• The Company established a nationwide integrated operating system to promptly identify and address various data security risks, effectively preventing data from being illegally accessed, tampered with, leaked, damaged, or improperly used. This system achieves one-point monitoring and nationwide handling.

• The Company took the lead in establishing group-level data security risk monitoring capabilities, identifying data security risks through proactive deep web and internet detection. Hainan Unicom became the industry's first cross-border mobility pilot unit, collaborating with the Cyberspace Administration of China to complete the pilot project.

# Strengthening data security technology research

• The Company enhanced the protection level of critical data and core data carrying systems, fully leveraging the advantages of IT centralisation and data concentration. It established a centralised data security emergency response platform, achieving multi-dimensional, multi-scenario, full-process practical emergency drills to improve emergency response capabilities.

• The Company conducted research on artificial intelligence data security technology, strengthened security management of training data and data processing activities, thereby enhancing data security control capabilities in the field of artificial intelligence research.

• The Company explored technological innovations and pilot verifications in trusted data spaces and privacy computing, conducting key technical research on data flow risk identification, data ownership confirmation, and data authorization.

• The Company partnered with the University of Electronic Science and Technology to develop YSK, the first domestically produced and self-controllable programming language for network security. This initiative breaks the monopoly of foreign programming languages in the field of network security, realizing a truly domestic independent and controllable development language. YSK was selected as one of the "Top Ten Technological Advances in the Information and Communication Field of the Year".

#### Protecting the personal information of subscribers

• The Company strictly implemented the "Personal Information Protection Law of the People's Republic of China" and conducted special inspections on personal information protection for mobile internet applications (APP) within the Company. This initiative aimed to prevent issues such as excessive collection of subscriber information and unclear rules for handling personal information, thereby enhancing the sense of security and trust of subscribers.

Chongqing Unicom has timely deployed the "Zero Trust Escort" solution. The plan, centred around the philosophy of "never trust, always verify", established a dynamic and continuous security protection system through technologies such as zero trust architecture, high-strength device fingerprinting, SPA preauthentication, and security sandboxing, ensuring the security and privacy protection of customer information.



# Safeguarding communication security for major events

China Unicom provides comprehensive and high-quality communication and cloud service support for major national events, fully combats natural disasters, ensures the security and smooth operation of communication networks, and establishes a communication "lifeline".

• The Company provided communication support services for 127 major national events, offered important communication support services for "cloud diplomacy" for 9 times, including major national events such as the Sino-African Cooperation Forum Summit.

• The Company actively engaged in emergency rescue operations during Typhoon "Yagi", the breach of the Dongting Lake levee at Tuanzhou in Huarong County, Hunan, the collapse of the highway bridge in Shangluo, Shaanxi, and the heavy rain and flood in Huludao, Liaoning. Throughout the year, a total of 155,000 disaster relief personnel were deployed, 57,000 rescue vehicles were dispatched, 45,000 emergency equipment and power generators were used, and 1.08 billion emergency public SMSs were sent. A total of 80,000 base stations were restored, 29,000 kilometres of optical cables were

repaired, and 94,000 poles were restored. The network and services in the affected areas have rapidly restored, receiving gratitude and high praise from units such as the Hainan and Liaoning Provincial Party Committees and Provincial Governments.

Emergency communication support

**127** times

Emergency communication vehicles called out

87,000

Emergency communication support personnel dispatched

**341,000** 



emergency communication



Inner Mongolia Unicom provided communication assurance services for the return of the Chang'e-6 probe

Shanghai Unicom collaborates with the Shanghai Emergency Bureau and the Shanghai Public Security Bureau Police Aviation Team to develop a 4/5G adaptive airborne base station system based on China Unicom's dedicated satellite frequency, which is mounted on rescue helicopters to provide stable and efficient communication support for emergency rescue operations.



Shanghai Police Aviation Team's EC-155 helicopter platform equipped with China Unicom emergency communication equipment
On 19 April 2024, China Unicom held the "Highland Sword" 2024 Shaanxi-Qinghai-Sichuan-Tibet cross-regional earthquake emergency communication joint exercise in Yushu City, Yushu Tibetan Autonomous Prefecture. The four support teams from Qinghai Unicom, Shaanxi Unicom, Sichuan Unicom, and Tibet Unicom were urgently dispatched across regions. They swiftly established an emergency communication command centre on site, activated satellite portable stations, completed drone reconnaissance and video transmission, and performed emergency power generation and cross-river optical cable restoration. They successfully completed all drills, thoroughly testing the communication support coordination capabilities in high-altitude areas.

Under the combined influence of the remnants of Typhoon "Trami" and cold air, many areas in Hainan suffered disasters. In response to Shibi Town in Qionghai City being surrounded by floods, Hainan Unicom promptly deployed tethered drone base stations and backpack satellite base stations for emergency communication support in Shibi Town. The Company established a backpack satellite base station in Xialang Village, Shibi Town, to ensure timely transmission of information and smooth command and dispatch in the disaster area.

### 🔇 Creating a clean and secure cyberspace

China Unicom strictly adheres to the "Anti-Telecom Network Fraud Law of the People's Republic of China", continuously advancing efforts to combat and manage telecom network fraud, resolutely safeguarding the legitimate rights and interests and property safety of the people.

#### Guarding subscribers' communication security

• The Company launched China Unicom's 'Do Not Disturb' anti-harassment service, actively guiding complaint subscribers to register their preferences for refusing calls and messages. Based on these preferences, corresponding protective measures are taken. Currently, the number of registered subscribers totals approximately 130 million, with about 260 million harassing calls intercepted in 2024.

The Company launched the "One-Click Diagnosis" and video customer service functions to enhance the service perception of subscribers.

• The Company launched the "Unicom Security Butler" product system, achieving a monthly proxy duration of 320 million minutes and intercepting 910 million spam messages annually, providing comprehensive protection for the entire family and all services.

#### Enhancing anti-fraud capability development

• Deepening police communication cooperation to combat crime. The Company assisted the police in uncovering more than 10,000 criminal dens and arresting more than 20,000 suspects.

 Breakthrough in anti-fraud technology capabilities. The Company achieved a virtuous cycle of "fewer closures, lower involvement in cases, and superior service". The Company strengthened source control measures such as red and yellow cards and blacklists, coordinated the handling of

major system vulnerabilities like live authentication and eSIM card separation, explored countermeasures against Internet scam technologies such as FaceTime and "small black box". It led the industry in promoting the "verify first, then disconnect" mechanism, resulting in a yearon-year decrease of 53%, 64%, and 68% in shutdown volume, case volume, and complaint volume respectively. These advanced experiences are being promoted and learned within the industry.

• Al empowering anti-fraud efforts. China Unicom's Anti-Fraud Centre self-developed an Al outbound platform, conducting outbound calls through the "10101010" China Unicom anti-fraud dedicated warning number, covering the entire country. Based on the anti-fraud semantic understanding large model, through Al voice interaction, subscribers suspected of receiving fraudulent calls are alerted and authenticated,



China Unicom Al Outbound Operations Dashboard

and subscribers are assisted in double-checking and verification. Since September 2024, the cumulative outbound call volume has been 1.8 million, the cumulative number of successful dissuasions has been 35,000, and it is estimated that more than RMB\$1.5 billion in economic losses have been recovered.

• Conducting comprehensive anti-fraud education for all. The Company launched a collection of anti-fraud publicity and education works with diverse types, comprehensive nodes, segmented audiences, and both internal and external considerations, among which the anti-fraud video column "Unpreventable" won the third prize in the Seventh Central Enterprises Excellent Story and the First AIGC Creative Communication Works.

Beijing Unicom "517" Telecom Day Anti-Fraud Promotion Event On-Site

Shanxi Jinzhong Unicom collaborates with the police to conduct anti-fraud publicity. By improving the local anti-fraud data model, it promptly handles high-risk users, further reducing users' fraud-related risks.



Conduct anti-fraud publicity

# Developing the cybersecurity industry

China Unicom effectively plays a role in technological innovation, industry control, and security support. It precisely identifies bottlenecks, continuously enhances technological innovation capabilities, actively partners with diverse collaborators in the industry chain, strengthens supply and demand connections, and achieves a sustainable development pattern of resource sharing, complementary advantages, and mutual benefits.

### Building a security capability platform

China Unicom is committed to self-developing reliable and secure technologies and products, providing more high-quality capabilities to the network security industry.

• Mogong security operation service platform constructs dynamic security data and capability access technology. To address the industry's challenge of "non-interoperable security product data and non-interconnected security atomic capabilities", the Company has collaborated with 86 security ecosystem partners to automatically integrate over 1,000 types of threat attack log alerts and manage over 200 security products, achieving a scale far exceeding industry standards.

"Mogong" security operation service links with "Security Hub" to provide customers with one-stop purchase of security products and comprehensive systematic security operation services, continuously meeting customers' diverse and scenario-based operational needs in the face of new cyber security risks. The new model of "Mogong Platform + Industry Chain Components + Joint Operation Services" has already covered 70 ecosystem partner manufacturers and over 230 industry chain ecosystem security components.



Mogong Unified Security Operation Service Platform

• Self-developing the UniAI network security large model. The model covers more than 8 security application scenarios, reducing daily alarm logs from billions to thousands, with a noise reduction rate for security incidents exceeding 99.99%. It automates the assessment of alarm events with an accuracy rate of up to 95.4% and has passed the first batch of "Security Large Model Basic Network Security Capability Assessment" organised by the China Academy of Information and Communications Technology and the Thiel Laboratory.

Pioneering the operational service system of "Technology + Operations + Management". The Company built the first unified security
operation centre for a mega city, represented by the Guangzhou Digital Security Operation Centre, becoming the largest project in the security
industry.

• Operationalizing the foundational network resources of operators. Through security capabilities such as "cloud, network, edge, terminal, use, data", technological innovation has driven an improvement in security service efficiency by 30%–50%, forming a large-scale demonstration effect. The benchmark projects for mega-cities have been replicated in several provinces, including Sichuan and Liaoning, with services extending across all 31 provinces nationwide.

"Digital Liaoning Empowerment Centre (Intelligent Computing Power Centre)" is the digital empowerment service platform jointly constructed by the Shenfu Reform and Innovation Demonstration Zone, Liaoning Unicom, and Hexagon. It is based on a new data centre security assurance system of "monitoring and early warning, security protection, emergency response, and comprehensive management". It provides integrated software and hardware defence services with network security as the baseline, effectively countering cyber attacks and threats.



Digital Liaoning Empowerment Centre (Intelligent Computing Power Centre)

### Building a secure industry ecosystem

China Unicom fulfils its responsibility as a chain leader, fully leveraging its role in facilitating integration and driving continuous new achievements in coordinated industrial development.

#### Prosperous and secure industry ecology

• The Company upgraded the chain leader work coordination mechanism, achieving top-tier performance in the 2023 chain leader evaluation by the SASAC of the State Council.

• The Company undertook the construction and operation centre for smart security of the SASAC of the State Council, implementing 89 security operation service projects.

Unicom (Chongqing) Cybersecurity Innovation Base was unveiled in Xiantao Data Valley, Yubei District. The base is equipped with three laboratories: information and communication technology innovation and adaptation laboratory, joint innovation laboratory for network security in production, education and research, and data security laboratory, aiming to enhance network security protection capabilities. At the unveiling ceremony, Chongqing Unicom, together with Chongqing University, Southwest University, QAX, and nearly 20 other entities, jointly established the "Unicom (Chongqing) Network Security Innovation Consortium".



The unveiling of the Unicom (Chongqing) Network Security Innovation Base

• The Company deepened the operation of the first national cybersecurity industry intellectual property operation centre, leveraging the integrative role of the national-level platform ecosystem.

• The Company established a network security industry innovation and intellectual property utilisation consortium in collaboration with industry chain partners such as Beijing University of Technology, jointly creating an open, cooperative, and mutually beneficial industry ecosystem of "multiple enterprises – multiple schools".

• The Company led the "Hundred Chains and Thousand Enterprises" patent industrialization promotion project of the China Patent Protection Association and the key industry intellectual property strengthening and efficiency enhancement project of the Beijing Intellectual Property Office.

The Company established a network security patent feature database and launched the Beijing Intellectual Property Public Information Service Platform, supporting data query services for over 1 million patent information entries.

The Company leveraged the National Patent Navigation Comprehensive Service Platform to innovatively establish the "Docking" industry special zone, promoting ecological innovation cooperation among over 1,000 universities, research institutions, and enterprises nationwide.

 The Company held industry ecosystem activities such as the Co-Chain Action Conference, National Cybersecurity Awareness Week, and World Internet Conference, as well as closed-door seminars for the industry chain, to fully consolidate industry chain consensus and enhance industry influence.

#### Promoting the leap in industrial value

• The Company deepened the operation of the threat intelligence centre, integrating multiple intelligence sources from the industry chain to provide high-quality intelligence support and analysis.

• The "Chain Leader Management Model for Promoting High-Quality Development of the Modern Cybersecurity Industry Chain to Safeguard New Quality Productivity" won the "First Prize for Innovation in the Modernization of Corporate Management in the Information and Communication Industry 2024".



China Unicom made a remarkable appearance at the 2024 China Cybersecurity Week

# Preventing and mitigating major risks

China Unicom continues to strengthen the foundation for secure development, resolutely maintaining security as the baseline. It continuously optimises and improves the comprehensive risk management system. It systematically enhances security assurance capabilities and adopts multiple measures to prevent and mitigate major operational risks, ensuring the healthy and sustainable development of the Company.

### Resolutely winning the fight against corruption

China Unicom is deeply advancing the rectification efforts in conduct and discipline and anti-corruption, promoting the integrated approach of "deter, disable, and discourage" corruption, and driving the continuous improvement of the corporate ecosystem.

#### Continuously improving the anti-corruption system

The Company continuously promoted the construction of the discipline inspection and supervision system, formulating over 50 important normative documents covering four major areas: supervision and inspection, discipline enforcement, discipline and conduct building, and basic management.

• Strengthening daily supervision of key personnel. The Company issued the "Implementation Measures for Interviews with Leaders of China Unicom", standardising the interview work of leaders at all levels, strengthening daily reminders, and reinforcing early intervention and prevention.

• Enhancing the standardisation level of discipline inspection and supervision team building. The Company issued the "Accountability Measures for Disciplinary Inspection and Supervision Cadres of China Unicom for Inadequate Performance of Duties", strengthening comprehensive supervision over the ideological understanding, duty performance, and conduct of disciplinary inspection and supervision cadres, and building a high-calibre professional disciplinary inspection and supervision team.

• Optimising the anti-corruption risk prevention and control system mechanism. Based on the 103 integrity risk points and 309 preventive measures guidelines proposed in the "China Unicom Key Areas Integrity Risk Prevention and Control Guidelines Manual" (2022 Edition), the "Related Key Areas Integrity Risk Prevention and Control Guidelines" was additionally compiled in 2024. It addressed 17 integrity risk points in four key areas, including network maintenance and information security, and proposed 47 preventive measures guidelines, further strengthening the integrity risk prevention and control network.

#### Enhancing the integrity of the anti-corruption and pre-corruption mechanism

The Company continuously strengthened discipline and work style, resolutely eliminated the conditions for corruption to breed, and created an atmosphere of integrity and uprightness for entrepreneurship.

• Enriching the means and carriers for building a culture of integrity in the new era. The Company formulated and issued the China Unicom Integrity Culture Work Guidelines, focusing on strengthening 18 areas of work, specifying 30 mandatory actions and 20 advocated actions, to promote the in-depth and practical development of integrity culture in the new era.

• Improving the corporate grand supervision framework. The Company formulated and issued the "Group Company Anti-Corruption Coordination Team Work Plan (2023–2027)", promoting each member unit to strengthen work coordination and continuously form a strong joint force against corruption. The Company handled 9 corruption cases during the year, with 12 people dismissed and disciplined due to corruption.

• The Company issued the "Opinions on Several Issues Concerning the Application of the 'Regulations on Letters and Visits' by China Unicom's Discipline Inspection and Supervision Institutions" to promote accurate understanding of core principles and requirements, establish a good order for petition letters and visits reporting, and enhance the standardisation level of work. Anti-commercial bribery and anti-corruption training covers

100% of directors and employees

Number of participants receiving anti-corruption education and training during the Year was



### Continuously strengthening internal control

China Unicom continues to advance the orderly operation of its internal control work mechanism, continuously strengthens internal control supervision and evaluation. It builds and perfects the audit supervision system, promptly identifies problems, corrects issues, and implements rectifications. This approach promotes the improvement of operational management levels and safeguards high-quality corporate development.

#### Operating the internal control mechanism in an orderly manner

The Company insists on the objectives of "strengthening internal control, preventing risk, and promoting compliance", and deeply advances the construction of the internal control system to improve corporate governance.

• The Chairman oversees internal control, risk, and audit work, approves audit reports individually, regularly listens to reports on key issues identified in audits, and promotes rectification of audit findings.

• The headquarters internal control department plays a role in overall coordination, organisational promotion, and supervision of implementation.

• The business department continues to strengthen the control of professional lines, promoting the responsibility for internal control construction from top to bottom and layer by layer. This integrates internal control into the entire production and operation process, covering all employees of each production unit, and basically forming an internal control work mechanism that is strongly led, with well-defined responsibilities, clear processes, and orderly norms.

#### Gradually strengthening the internal control supervision and evaluation

The Company focuses on internal control of key business and critical processes, continuously establishing and improving the internal audit system to provide direct and strong support for promoting high-quality development of the enterprise.

• The Company continuously strengthens the coordination of audit projects and adheres to comprehensive audit coverage. It conducts supervision and inspection across 31 provinces and key subsidiaries annually using the approach of "special internal control audit + economic responsibility audit". The effectiveness of internal control is a priority for each audit project, emphasising the construction of institutional processes and compliance with operational execution, to promote the effective implementation of internal control within the Company.

• The Company strengthens the coordination and scheduling of audit resources and project organisation, strictly controls the quality throughout the entire audit project process and ensures the effectiveness of audit supervision. The Company continuously deepens the digital and intelligent transformation of auditing, solidly advances the construction of audit informatization, thoroughly conducts research-oriented auditing. This approach constantly enhances the breadth, depth, and precision of audit analysis and monitoring, effectively empower auditors.

• The Company implements the "second half" of the audit rectification, focusing on the transformation and application of audit results. The Company addresses emerging and common issues in the Company's business development with a focus on weak areas in business control and promptly issues audit recommendations and warning notices. The Company promotes com-prehensive rectification of issues by drawing lessons from one case to another, continuously strengthens the internal control system, and ensures the effective operation of the Company's internal control.

#### Continuously improving the audit supervision system

The Company continuously strengthens the leadership and management system for internal audit work, and strives to build a centralised, unified, comprehensive, authoritative, and efficient audit supervision system.

• The headquarters has established an Audit Department, which operates under the direct leadership of the China Unicom Board of Directors and reports to it.

• 31 provincial subsidiaries have established independent audit departments, implementing a stationed management system, subject to dual leadership and dual assessment by the headquarters and the local companies, ensuring the independence and authority of internal audits.

• Secondary subsidiaries and significant subsidiaries below the second level, which have been established for over 1 year, are substantively conducting business and have subordinate subsidiaries, have all established audit function departments.

#### • Regularly updating the regulatory system

The Company adheres to the principle of leading reform and development through institutional construction, accelerates the improvement of the modern enterprise system with Chinese characteristics. It regularly organises and carries out the "abolition, reform, and establishment" of rules and regulations, improving and perfecting the internal control system of enterprises.

• The Company relies on the institutional management platform to strictly controls requirements such as hierarchical classification, version management, and release procedures. It regularly conducts institutional evaluations and plan formulation, promptly follows up and supervises plan execution, orderly carries out the establishment, revision, and abolition of systems, and promotes agile iteration of systems. In 2024, the Company cumulatively formulated and revised 7,488 regulations.

• The Company regularly organises the update and optimisation of internal control standards, comprehensively assesses internal and external factors affecting these standards. It promptly updates and optimises the basis of the system, risk descriptions, and control measures to ensure the completeness, applicability, and effectiveness of the internal control standards.

• The Company strengthens the evaluation of internal control inspections, organizes subsidiaries within the scope of consolidation to conduct internal control self-assessment annually, conducts special self-assessments of internal control in high-risk areas every six months. In accordance with the self-regulatory requirements of the Shanghai Stock Exchange, compliance checks on major internal control matters such as related party transactions and external investments are conducted every six months. No significant violations of laws or regulations and internal control deficiencies were found.

### 😵 Strictly managing risks

China Unicom continuously enhances its corporate risk control capabilities, strengthens risk prevention and process control, fully identifies major risk hazards, and achieves comprehensive risk management involving all personnel and processes. The Company issued the "China Unicom Risk Management Measures" and other related professional line risk management systems, continuously deepening the construction of a healthy and safe enterprise. In 2024, the Company did not experience any significant operational risk events.

#### Strengthening risk identification and early warning

The Company adheres to the goal of high-quality development, prioritising stability while seeking progress, coordinating development and security, emphasising prevention as the primary approach combined with control, strengthening full-process, chainstyle, dynamic risk prevention and control, and maintaining the bottom line of avoiding major risks.

• The Company strengthens the source control of major risks, diligently organises and conducts risk identification work, continuously monitors changes in the international and domestic macroeconomic situation as well as industry development trends, and timely updates and optimises the "China Unicom Risk Directory".

• The Company strengthens the effective operation of the risk assessment mechanism, adheres to comprehensive evaluation and coverage, conducts annual major operational risk assessments across the entire group, scientifically evaluates the major risks faced by the Company, clarifies responsible units and control targets, and reasonably formulates major risk response measures in conjunction with the Company's strategy and key work arrangements, establishing a task ledger for major operational risk prevention and control.

#### Increasing risk tracking and control

The Company continuously strengthens the control of major risk processes. Based on the results of the annual major operational risk assessment, the Company scientifically establishes annual major operational risk monitoring indicators, tracks changes quarterly. It holds operational analysis meetings monthly to analyse the production and operational situation and changes in major risk impacts, analyses and assesses the development trends and causes of major risks, summarises the implementation status and control effects of prevention measures. It further adjusts and optimises risk prevention measures, tracks and promotes the implementation and refinement of relevant measures, and effectively ensures the effectiveness of risk control.

#### Regularly conducting risk disclosure

The Company regularly discloses the major risks that it may face in accordance with capital market regulations, promptly announces the basic situation, impact level, and handling response of major sudden risk events. It periodically submits financial final accounts, monthly financial reports, internal control evaluation reports, and other materials to higher authorities such as the National Audit Office and the SASAC of the State Council, accepting supervision and inspection by higher authorities. At the same time, an audit firm is engaged annually to audit the Company's financial reports and the effectiveness of internal controls, which is combined with the Company's regular internal control self-assessment and internal audit supervision to form an internal and external supervisory synergy, ensuring that the design of internal controls is reasonable and their implementation is effective, thereby ensuring the quality of performance disclosure information.

### Fully ensuring safe production

China Unicom places the protection of people's lives and safety as a top priority and firmly establishes the concept of safe development. It fully implements the primary responsibility for production safety, prevents and reduces production safety accidents, and ensures the safety of life and property of employees of central enterprises and the general public.

• The Company strengthened the construction of the safety production system, revised and improved systems such as the "Safety Production Supervision and Management Measures" and the "Safety Production Assessment Implementation Rules". Using a model of basic and supporting systems, an organically connected, mutually complementary, and dynamically adaptive safety production system has been initially formed, further solidifying the foundation of the safety production management system.

• The Company organised the 2024 safety production training class. A total of 108 individuals, including safety directors, Level B safety production experts, and safety production liaisons from provincial branches (subsidiaries), provincial capitals, municipalities with independent planning status, and strategic business unit branches, participated in the training. • The Company strengthened the work of special inspections and rectifications, strictly controlled the network operation risks of "two cores and two keys" (core machine rooms, core networks, key routes, key systems), strictly controlled fire risks in key places such as communication buildings, high-rise buildings, densely populated areas, and three halls and one dormitory, and strictly controlled risks in critical operations such as confined space work, live-line work, and working at heights. In 2024, various units identified 61,700 potential hazards, of which 59,500 have been rectified, achieving a rectification rate of 97%.

• Each unit utilised nodes such as Production Safety Month and Fire Safety Publicity Month, employing various forms such as special seminars, thematic presentations, guidance reports, and video broadcasts to continuously organise and conduct educational learning. The entire company organised over 2,200 training and presentation activities, with participation exceeding 95,000 people, and conducted more than 4,600 safety production warning education sessions, covering over 225,000 people.

Ningxia Unicom conducted maintenance inspections and rectification of potential hazards focusing on waterproofing, lightning protection grounding, and equipment operation safety at key node machine rooms. During the national "Safety Production Month", 18 safety production education and emergency evacuation drills were conducted, with 1,036 participants.



Ningxia Unicom emergency evacuation drill

Based on its dual prevention and standardised business system, China Unicom has established a "comprehensive, all-process, and all-round" safety risk control system, creating a nationwide integrated centralised digital platform for safety production management. It has been deployed in 50 branches (subsidiaries) of China Unicom, more than 300 city-level companies, and over 2,000 county-level companies.



### Continuously carrying out compliance management

China Unicom thoroughly implements Xi Jinping's thought on the rule of law, diligently executes the deployment for the construction of a lawbased central enterprise. It closely focuses on the refined and deepened development goals of compliance management, continuously enhances compliance management level, promotes the deep integration of business development with legal compliance, and takes greater strides in building a compliance barrier for the Company's high-quality development.

• Improving the system and processes. The Company formulated specific compliance systems such as the Management Measures for Market Operation Irregularities, clarified compliance special work rules, and formulated compliance operational regulations such as the Legal Compliance Risk Prevention Guidelines for Computing and Digital Smart Applications projects to assist in compliance risk prevention. Based on business iteration and the updated compliance risk identification, process control, and position compliance responsibility list, it consolidated compliance responsibility, strengthened risk control, iterated and updated the compliance review checklist for important decisions, and strengthened compliance review and control.

• Carrying out special governance. The Company closely monitored key areas such as marketing, Cybersecurity, engineering construction, and material procurement to ensure effective risk investigation and targeted governance, with governance measures becoming more solid and governance efficiency gradually improving. The Company focused on issuing warnings regarding the risks of pre-litigation preservation such as the freezing of the group's bank accounts and copyright infringement risks, and solidly advanced source prevention.

• Actively protecting intellectual property rights, strengthening the coordinated protection of patents, copyrights, and trade secrets in technological innovation. The Company registered 1,747 software copyrights and successfully registered 50 important trademarks such as "Unicom UniAI" and "China Unicom Smart Home". The Company made comprehensive use of trademark and copyright protection strategies to safeguard important rights such as mascot cartoon images.

• Strengthening the compliance team. The Company continuously expanded the compliance team, organised training for chief compliance officers and capability enhancement training for specialised compliance management positions and compliance managers to build a high-calibre compliance force.

• Cultivating a compliance culture. The Company's legal education platform published a total of 8,901 legal compliance journals, legal education articles, and videos in 2024, with over 69 million views and 335,000 registered learners. A series of special legal education activities were organised, with more than 228,000 employees participating in the Company's constitution quiz activities, fostering an increasingly strong atmosphere of legal compliance.



# A Century of Legacy, Thirty Years of Newness



The year 2024 marks the 75th anniversary of the founding of New China, and it is also an important year for China Unicom to continue its efforts under the theme of "A Century of Legacy, Thirty Years of Newness". Over the past thirty years, China Unicom has undergone numerous transformations in the telecommunications industry, evolving from a mobile communications enterprise with a registered capital of 1 billion to a technology service company with operations across 31 provinces in China and multiple countries and regions overseas. It ranked 279th in "Fortune Global 500" for the year 2024.

# Casting heritage with a hundred years of inheritance

In the early 1920s, the initial development of wireless communication in our country. The active cultivation of communication technology personnel across various regions spurred advancements in related fields such as electronic technology and communication technology. With the establishment of the People's Republic of China, communication personnel, with their tenacious spirit of struggle, established nationwide communication links in just three years. Subsequently, batch after batch of communication workers have made indelible contributions to the construction of China's communication industry and economic and social development.

• In early March 1949, the Xiangshan Telephone Special Bureau officially commenced operations.

 The Telegraph Building, completed in September 1958 and located on Chang'an Street in Beijing, stood as a testament to the arduous struggle of those in the telecommunications industry.

• As a microcosm of the advancement in communication technology in New China, the Beijing Long-Distance Telephone Bureau was completed and began operation on 1 July 1976.

• The 17th National Posts and Telecommunications Work Conference held in 1979 proposed that communication is also a social productive force.

• The "National Postal and Telecommunications Ninth Five-Year Plan Outline" released on 12 May 1994 officially confirmed that by the end of the 20th century, an "Eight Verticals and Eight Horizontals" optical cable transmission backbone network will be established, covering provincial capitals and key regions nationwide, and connecting the world.



The Beijing Telegraph Building newly constructed in 1958



The work scene inside the Beijing Long Distance Telephone Building in the 1970s

# 🔂 Unicom establishes a new chapter

The establishment of "China Unicom" is a significant strategic decision in the process of China's reform and opening-up. It represented an important reform in the telecommunications sector, by breaking the monopoly, introducing competition, and promoting the substantial development of the communications industry in accordance with market economy principles. China Unicom, with its high-quality and diverse communication services, promotes communication benefits for the public. It is listed in places such as Shanghai and Hong Kong, gradually growing into an emerging telecommunications enterprise.

• On 19 July 1994, China United Telecommunications Corporation announced its establishment at the Diaoyutai State Guesthouse in Beijing, marking the beginning of a transformation to break the monopoly in the telecommunications industry and promote innovation in communication services. From then on, the distinctive telecommunications brand "Unicom" became embedded in the long course of development of China's telecommunications industry.

 In 1995, China Unicom adopted GSM digital mobile communication technology to build China's second public mobile communication network in four cities: Beijing, Tianjin, Shanghai, and Guangzhou, which drove a significant reduction in mobile phone prices.



China United Telecommunications Corporation Inaugural Meeting

• On 8 January 2002, China Unicom launched its CDMA business, and by 2004 it had developed into the world's second largest CDMA operator.

• In August 2004, China Unicom launched its new mobile communication service brand, "Worldwind", enabling users to seamlessly switch between GSM and CDMA mobile networks, enjoying dual-network services.



China Unicom GSM digital mobile phone network inauguration ceremony



China Unicom CDMA network inauguration ceremony



On 9 October 2002, China Unicom was listed on the Shanghai Stock Exchange

• On 21 and 22 June 2000, the Company (formerly known as China Unicom Limited) successfully issued shares on the New York Stock Exchange and The Stock Exchange of Hong Kong respectively.

• On 9 October 2002, the listing ceremony of China Unicom A share Company was held at the Shanghai Stock Exchange, making China Unicom the first telecommunications operator in China to be listed in Hong Kong, the United States, and the mainland.

On 6 May 2002, China Telecom Group Corporation and China Network Communications Group Corporation completed their restructuring.

# O Joining hands to embark on a new journey

With the continuous deepening of reforms in China's telecommunications industry, the staff of China Unicom have been endowed with a diverse and rich reform culture. They possess the historical accumulation of a century of telecommunications, uphold the original intention of serving the development of social informatization, and have the determination to courageously shoulder the mission of the era and be a good "Luban Stone" for the Cyber Superpower.

• In August 2008, the former China Netcom, as the designated communication services partner of the Beijing Olympics, fully committed to creating the "Broadband Olympics" and "Digital Olympics".

• In October 2008, the former China Netcom and the former China Unicom merged and restructured, officially establishing China United Network Communications Corporation Limited.

• On 17 January 2009, the Ministry of Industry and Information Technology issued the WCDMA 3G licence to China Unicom. China Unicom built the world's largest WCDMA network at that time.

On 17 May 2009, China Unicom launched the trial commercial use of 3G services.

 On 4 December 2013, the Ministry of Industry and Information Technology issued China Unicom the licence to operate "LTE/4G digital cellular mobile Communications Services (TD-LTE)".

• On 27 February 2015, the Ministry of Industry and Information Technology issued China Unicom the licence to operate "LTE/4G digital cellular mobile Communications Services (FDD-LTE)." In the 4G era, China Unicom constructed a 4G network integrating both TD-LTE and FDD-LTE standards, significantly promoting the development of China's 4G network.

# Reforming and innovating towards the future

#### The mixed-ownership reform of Unicom introduces new energy for development



On 17 May 2009, China Unicom announced the trial commercial use of 3G networks in the first batch of 55 cities

Through the introduction of strategic investors, China Unicom's mixed-ownership reform has optimised the equity structure and enhanced financial strength. It has also improved governance structure, increased operational efficiency and competitiveness, and driven business innovation and development, while promoting balanced development in the telecommunications market and injecting a diverse and open gene into China Unicom's high-quality development.

• On 28 September 2016, China Unicom was included in the first batch of mixed-ownership reform pilot enterprises by the state.

• In 2017, China Unicom A share Company successfully introduced 9 strategic investors including China Life, Chengtong, Tencent, Baidu, JD.com, Alibaba, etc., and in February 2018, established a diversified board of directors comprising "internal directors + strategic investor directors + independent directors".

• On 20 December 2022, China Unicom signed strategic cooperation agreements with strategic investors such as Tencent, Baidu, Alibaba, and JD.com to comprehensively launch a new round of cooperation.



The mixed-ownership reform has received widespread attention and recognition from various media outlets

#### Co-build and co-share to promote extensive network interconnection

With the advent of the 5G era, China Unicom is actively deploying 5G network construction and deepening co-build and co-share with China Telecom, effectively reducing network construction and operation and maintenance costs, efficiently achieving network coverage, bringing faster and smarter communication experiences to society, and providing more convenient and efficient communication services to customers.

- On 6 June 2019, China Unicom obtained the 5G commercial licence.
- On 9 September 2019, China Unicom and China Telecom commenced 5G network co-build and co-share.
- On 24 December 2023, the "China

Telecom & China Unicom 5G Co-build and Co-share SA Construction Project" won the National Premium Engineering Gold Award. This is the first time for China Unicom and the only national-level premium engineering gold award project in the telecommunications industry in nearly a decade, setting an industry benchmark and an excellent example for new infrastructure construction.



China Unicom obtained the 5G commercial license



"China Telecom & China Unicom 5G Co-build Co-share SA Construction Project" won the National Premium Engineering Gold Award

#### Striving to become an innovative frontline troop in digital intelligence integration

China Unicom adheres to integrated innovation, promoting the deep integration of 5G, Big Data, cloud computing and other technologies with various industries. By building 5G networks, establishing a computing power ecosystem, and providing data governance services, it accelerates the digital transformation of industries and enhance production efficiency across various sectors while promoting high-quality economic and social development.

• In March 2022, as the sole official telecommunication service partner of the Beijing 2022 Winter Olympics and Paralympic Winter Games, China Unicom successfully completed the communication service support tasks for the Winter Olympics and Paralympics. In April, awarded the honorary title of "Outstanding Contribution Group for Beijing Winter Olympics and Paralympic" by the State Council.

• On 19 May 2022, China Unicom was awarded the title of "Chain Leader" of the modern cybersecurity industry chain.

• On 17 July 2022, China Unicom was awarded the honorary title of "Enterprise with Outstanding Contribution in Technological Innovation" for the 2019-2021 term by the SASAC of the State Council.

In January 2024, the "Mogong" Security Operation Service Platform and "Tianji" Security Platform, self-developed by China Unicom, were
permanently included in the collection of the National Museum of China.

- On 12 April 2024, China Unicom became the "Official Communication and Cloud Services Partner" of the 9th Harbin Asian Winter Games.
- On 9 May 2024, China Unicom was awarded two original technology sources for next-generation Internet and Big Data.
- On 4 June 2024, China Unicom was awarded the title of "Chain Leader" in the artificial intelligence industry chain.



Signing ceremony as the official telecommunication services partner of the 2022 Beijing Winter Olympics and Paralympic Winter Games



The "Mogong" security operation service platform and the "Tianji" security platform, self-developed by China Unicom, have been permanently included in the collection of the National Museum of China

China Unicom focuses on the main responsibilities of constructing Cyber Superpower and Digital China, courageously acting as the leading contributor of digital information operation and services and the pioneer of digital technology integration and innovation, striving to make new contributions to Chinese-style modernization with new achievements.

# **Sustainable Development Governance**

# Sustainability Development System

#### Sustainable Development Governance

China Unicom attaches great importance to the management of environmental, social, and governance-related matters. The Board of Directors has overall responsibility for the Company's environmental, social, and governance strategy and reporting. It is responsible for making decisions and arrangements for China Unicom's corporate social responsibility work, including the process used to evaluate, prioritise and manage risks and opportunities in environmental, social, and governance, and defining the objectives and strategies for sustainable development. The Corporate Development Department/Legal Department is responsible for the coordination and daily management of sustainable development work, while each department of the Group, provincial branches, and subsidiaries are responsible for organising and promoting the implementation of sustainable development work within their respective units, addressing key issues and major projects in their specific areas of expertise.



#### Sustainable Development Supervision

In the implementation of strategy, major transaction decisions, and risk management processes, China Unicom fully considers the impact of sustainability risks and opportunities. The Board and Audit Committee regularly receive reports on sustainability-related work. They review the company's performance, and provide management and relevant departments with advice and instructions on optimizing sustainability efforts. They also approve the disclosure of the sustainability report. The remuneration of the Company's management is linked to sustainable development goals such as green and low-carbon initiatives, technological innovation, rural revitalization, and safety production. Multi-dimensional training is conducted to facilitate the achievement of these objectives.

# Sustainable Development Strategy

#### Vision and Strategy for Sustainable Development

China Unicom integrates its development with broader sustainable development, accelerating its transformation into a world-class technology service enterprise with global competitiveness, achieving a harmonious unity between the Company's interests and social objectives. In 2024, China Unicom continued to be guided by the new development philosophies of innovation, coordination, green, openness, and sharing. The Company took practical actions to implement the Cyber Superpower and Digital China initiatives, formulating the Sustainability Development System of China Unicom to fulfill its social responsibilities effectively.



#### Sustainable Development Management

China Unicom, supported by effective organisation, systems, processes, and methods, revised and issued the "China Unicom Social Responsibility Management Measures" in 2024. This further detailed the planning formulation, data management, communication management, performance management, and other work contents and processes, deeply integrating the concept of sustainable development into the Company's management and operational services.

• The Company conducted in-depth research on policies, standards, technological innovations, and data management strategies in the field of Environmental, Social, and Governance (ESG), integrating sustainable development into the Company's strategy.

 The Company improved the China Unicom Social Responsibility Management Indicator System by refining and quantifying various indicators, formulating specific implementation plans and measures to ensure the effective implementation of all social responsibility tasks.

• The Company organised and implemented special tasks on environment, social, and governance.

China Unicom continued to strengthen its capacity for responsibility and to promote the concept of responsibility among all employees. It established a two-tier sustainable development team at both the Group and subsidiaries, extensively and deeply promoted the implementation of responsible practises, and encouraged the improvement of the Group's ability to fulfil its responsibilities through case sharing. Many responsible practises have received awards from various sectors of society. Personnel engaged in ESG work actively participated in various seminars and training organised by the sustainable development industry, focusing on trends in responsible development, learning from the experiences of outstanding enterprises, and contributing ideas and opinions. In 2024, ESG training reached more than 100 participants, with a total training duration exceeding 60 hours, aiding the in-depth advancement of sustainable development.

 The Company was accredited with the "2024 Low Carbon Operation Pioneer and Ona Award" and the "2024 Responsibility Gold Award" by the Social Responsibility Conference Organising Committee.

• "Innovative Smart Dual-Circulation Air Conditioning Energy-Saving Technology, Creating a Green Data Centre Model" was selected as the "2024 Best Practise Case for Sustainable Development of Listed Companies" by the China Association for Public Companies.

• "'Unicom Carbon Life' Assists in Green Transformation of Public Life – Carbon Inclusive Application Utilises Al+ to Support subscribers Carbon Footprint Tracking" received the "2024 ESG Excellence Practise" award at the ESG China Innovation Annual Conference jointly organised by the China Enterprise Reform and Development Society and CCTV.

• "Upholding the Original Aspiration of Serving the People, Fulfilling the Responsibility of Central Enterprises, and Advancing Anti-Fraud Governance to a New Level" and "Unicom Carbon Life' Carbon Inclusive Applications in the Telecommunications Industry Facilitating Green Transformation of National Production and Lifestyle" won the "Brand ESG Excellent Practise Case" organised by the China Advertising Association.

• "Innovative Smart Dual-Circulation Air Conditioning Energy-Saving Technology Empowering Sustainable Development in the Communication Industry" was recognised the "China Enterprise ESG Excellent Case" by Xinhua News Agency's "Banyue Tan" magazine and the China Enterprise Reform and Development Research Association.

• "Harbin Cloud Data Centre Waste Heat Recovery Energy Saving" and 6 other cases were selected as "2024 Outstanding Practise Cases of Enterprise Green Low-Carbon Development".

## 🔁 Important Issue Management

#### 🛞 Important Issue Evaluation Process

China Unicom conducts regular identification of important issues annually. In 2024, the dual materiality approach was adopted, considering the impact of sustainability issues on its own financial or strategic aspects, as well as their impact on the environment and society.

#### Identifying sustainability agendas

Based on the principle of double-materiality, and considering factors such as industry trends, regulatory policies, and domestic and international sustainability-related norms and standards (such as CASS-ESG6.0, United Nations Sustainable Development Goals, GRI Industry Standards, Global Risk Report, etc.), potential sustainability opportunities or risks are identified through stakeholders feedback (including investor suggestions, partner conferences, employee opinions, customer feedback, media analysis reports, etc.). These potential factors, combined with opportunities or risk factors from past business activities, form a complete pool of sustainable development issues. In 2024, 26 sustainability agenda items were identified.

#### Analysing and deciding on important agendas

Based on the nature of sustainability agendas, the Company analysed factors such as positive and negative impacts, scale and scope of impact, probability and speed of occurrence, and the degree of stakeholder concern to assess the extent of each agenda's impact on the economy, environment, and society. The materiality scoring is set by the Corporate Development Department to screen and rank the dual materiality topics for this year.

#### Confirming and managing key agendas

The results of the analysis of important agendas are determined through management discussions to ensure that the dual materiality assessment method and results align with the Company's management policies and development objectives. The Company regularly reviews the implementation of measures related to key agendas and continuously optimises its internal management policies. This year, a total of 21 items were included as important topics, with 6 items classified as dual importance, 5 items as financially important, and 10 items as impactful.

### Dual Materiality Assessment Matrix and Evaluation Results

The results of the importance assessment are presented in the following dual materiality matrix. The matrix considers both the significance of impact and financial importance, plotting each significant agenda based on its degree of impact on the environment and society (Y-axis), and its degree of impact on the Company's operations and finances (X-axis). Relevant agendas are included in the appropriate sections for disclosure.



Materiality to China Unicom's own operations and financial conditions

China Unicom Sustainability Agenda Importance Assessment Matrix

### 🔞 Due Diligence on Sustainability Agenda

China Unicom primarily conducts due diligence on investment-related businesses to gain a truthful and objective understanding of the current situation. It analyses investment feasibility, and formulates reports and strategic recommendations. Relevant circumstances are incorporated into risk assessment and subsequent management processes.

The Company conducted feasibility studies on networkrelated fixed asset investments to enhance the scientific nature of investment decisions and optimise resource allocation. The feasibility studies for network-related fixed asset investment are organised and conducted by qualified feasibility study preparation units, the Construction and Development Department, and relevant demand units. The main procedures of the feasibility study include needs assessment, current network research, formulation and discussion of the initial draft of the construction plan and investment, expert review, and other stages. The content of the feasibility study covers the necessity and feasibility of engineering construction, dual carbon considerations, economic factors, risk assessments, and other sustainable development elements. The Company's equity investment activities strictly adhere to due diligence regulations to ensure the rationality of investment decisions and the controllability of risks, thereby safeguarding the security and appreciation of state-owned assets. The due diligence primarily covers various aspects such as the financial condition, operational status, market prospects, and legal risks of the investment target. It is mainly conducted through document review, on-site inspections, and personnel interviews. Upon completion, a detailed due diligence report is issued, along with corresponding risk warnings and investment recommendations, to help enhance the quality and level of investment decision-making.

# Communication with Stakeholders

China Unicom places great importance on communication and cooperation with stakeholders, enhancing communication mechanisms and management procedure. It actively builds a communication platform with investors, continuously enhances the transparency of information disclosure, streamlines internal communication channels, and promptly responds to the diverse demands and expectations of stakeholders.

### Communication with Stakeholders Mechanism and Management Procedures



### Investor Relations Management and Shareholder Rights Protection

#### **Investor Relations Management**

China Unicom has strengthened proactive and effective investor relations management, coordinating relationships with regulatory, analyst, shareholder and securities media. This has significantly enhanced its influence in the capital market and continuously enhanced the value of the Company and its shareholders. Annual general meeting shall be held every year, and extraordinary general meeting may be held when the Board deems it appropriate, the Company's Directors and representatives of Board committees will attend the meetings. All matters at the Company's general meetings are resolved by poll and the relevant procedures are explained at the meeting and the Company publishes the poll results in a timely manner, thereby offering protection of the shareholders' rights and interests. Latest updates on the Company's website (www.chinaunicom.com.hk), so that investors can keep timely understand of the Company's latest developments. The Company's website not only serves as an important channel for disseminating press releases and corporate information to investors, media, and the capital market in terms of investor relations, but also plays a critical role in the Company's valuation and compliance with regulatory requirements for information disclosure. The Company continuously updates the content of its website, further enhances the website's functionality, and strengthens the transparency of information disclosure, striving to achieve international best practise standards. In 2024, the Company's website (https://www.chinaunicom.com.hk) was honoured with the Gold Award in the "iNova Awards" for nine consecutive years. The Company's efforts in investor relations have been highly praised by the capital markets, and it has received numerous awards, including being rated by fund managers and analysts as having the "Best IR Program (Telecoms)" in the 2024 Asia Executive Team ranking organised by Institutional Investor.

• An Investor Relations Department is in place to provide investors with the information and services they require and to actively engage with investors and fund managers.

The Company formulated Shareholders' Communication Policy to ensure that the shareholders are provided with readily, equal and timely
access to balanced and understandable information to protect their right to know.

• The Company focused on strengthening communication with the capital market, enriched communication methods, organised a number of reverse investor roadshows activities, and arranged the management to carry out roadshow activities from time to time. Throughout the year, the Company organised/participated in nearly 100 international capital market communication activities, and the communication with investors, analysts and the media increased significantly compared with last year.

• The Company actively respond to investors' concerns, and transparently makes adequate disclosures on the Company's efforts to address climate-related risks on climate change issues that have been widely concerned by investors in recent years.

#### Transparency in information disclosure

China Unicom strictly fulfils its information disclosure obligations, organises and completes various information disclosure work in accordance with laws and regulations to ensure the truthfulness, accuracy, completeness and timeliness of information disclosed to the public (including inside information). The Company's efforts in corporate governance (including information disclosure) were highly regarded by the capital market and received a number of awards. In particular, the Company was voted as "Asia's Most Honoured Telecom Company" for nine consecutive years in the "2024 Asia Executive Team" ranking organised by the authoritative financial magazine, Institutional Investor. It was awarded the "Best Managed Company in China-Gold" in the "2024 Asia's Best Managed Company Awards" organised by the authoritative financial magazine, EinanceAsia. It received the "Sustainable Asia Award" at the "14th Asian Excellence Recognition Awards 2024" organised by Corporate Governance Asia.

• The Company developed and refined the Information Disclosure Policy to ensure the convenience and security of information disclosure while ensuring the fulfilment of information disclosure obligations in compliance with laws and regulations.

• The Company established the Information Disclosure Committee chaired by the management to clarify the procedures for the compilation and reporting of financial and operational data and other information as well as the procedures for the preparation and review of periodic reports. The Company has made specific provisions on the contents and requirements for the verification of financial data, especially requiring the responsible persons of each major department to issue a statement letter to be assumed by individuals from the bottom to the top. • The Company adhered to fair disclosure and held result briefings or presentations in Hong Kong and Beijing immediately after the publication of annual and interim result announcement to ensure that all investors have equal access to relevant information.

• The Company actively participated in various surveys and inquiries conducted by regulators and exchanges, and earnestly put forward constructive opinions and suggestions.

• The Company attached great importance to the protection of the rights and interests of creditors. The Company had a good credit history, all interest-bearing liabilities were repaid on time without any instances of debt default or adverse credit records.

• The Company regularly invites different professional teams to provide training for Directors on the latest development of relevant laws and regulations, market environment and industry development, so as to enhance their ability to perform their duties.

### Communication with Stakeholders Methods and Expectations

Stakeholder	Communication method	Expectations for China Unicom
Customers	<ul> <li>Business outlets communication</li> <li>Service hotline</li> <li>Weibo/WeChat and APP</li> <li>Business Visit</li> <li>Customer satisfaction follow-up</li> </ul>	<ul> <li>Network quality and product experience</li> <li>Efficient and convenient customer service</li> <li>Information security and privacy protection</li> <li>High-quality brand image</li> <li>Innovative and futuristic communication technologies</li> <li>Strengthen the cultivation and enhancement of key product capabilities</li> </ul>
Employees	<ul> <li>Employee forum</li> <li>Workers' congress</li> <li>Democratic life meeting</li> <li>General Manager Online</li> <li>Open corporate affairs</li> </ul>	<ul> <li>Protection of lawful rights and interests</li> <li>Extensive career development opportunities</li> <li>Effective vocational skills education</li> <li>Equal employment with equal pay for the same position</li> <li>Opportunities for participation in democratic management</li> <li>Assistance received during difficult times</li> <li>Safe and comfortable work environment</li> </ul>
Investor	<ul> <li>Results press conference</li> <li>Investor activities</li> <li>"Investor Relations" section in Company's website</li> </ul>	<ul> <li>Sustainable operating performance</li> <li>Corporate governance and integrity management</li> <li>Information security and privacy protection</li> </ul>
Supply chain enterprises	<ul> <li>Procurement activities</li> <li>Meetings, interviews</li> <li>On-site audit guidance</li> </ul>	<ul> <li>Extensive and convenient support services</li> <li>Promote the coordinated development of digital and green transformation</li> <li>Anti-commercial bribery and fair competition</li> </ul>
Government	<ul> <li>Meetings</li> <li>Face-to-face communication</li> </ul>	<ul> <li>Information infrastructure construction</li> <li>Security assurance services during critical periods</li> <li>Corporate governance and integrity management</li> <li>Information security and privacy protection</li> </ul>
Non-governmental organisation	<ul><li>Thematic Forum Exchange Activity</li><li>Meetings, interviews</li></ul>	<ul> <li>Addressing climate change risks</li> <li>Information security and privacy protection</li> <li>Community Care and Charity Investment</li> </ul>
Community	<ul><li>Meetings</li><li>Seminars</li><li>Visits</li></ul>	<ul> <li>Comprehensively promote rural revitalization</li> <li>Sustainable and effective donations</li> <li>Carry out charity and volunteer activities</li> <li>Energy-saving and environmentally friendly communication equipment</li> </ul>
Partners	<ul> <li>Partners Conference</li> <li>Meetings, interviews</li> <li>Self-service portal of partners</li> <li>Regularly conduct high-level mutual visits and discussions with partners</li> </ul>	<ul> <li>Promote the rapid, healthy, and controllable development of the cybersecurity industry</li> <li>Fair and open opportunities for cooperation</li> <li>Strengthen cooperation in the integration of the four chains: innovation chain, industry chain, capital chain, and talent chain</li> </ul>
Media	<ul> <li>Issue press release and hold press conferences</li> <li>Promotional Activities</li> <li>Special communication</li> </ul>	<ul> <li>Operating performance</li> <li>Network quality and infrastructure construction</li> <li>Risk Management and Emergency Management</li> </ul>

# **Appendices**

# **()** Key Performance

Category	Indicators	Unit	2022	2023	2024
	Total assets	RMB billion	642.66	661.05	671.24
	Operating revenue	RMB billion	354.94	372.60	389.59
	Service revenue	RMB billion	319.35	335.17	345.98
	Profit before income tax	RMB billion	20.59	22.95	25.22
Operations and development	Number of internet billing subscribers	Thousand	322,698	333,298	343,979
development	Number of broadband online subscribers	Thousand	103,630	113,416	122,253
	Cumulative number of IoT terminal connections <sup>4</sup>	Thousand	385,540	493,911	624,781
	Number of customers served by virtual private networks in 5G industry <sup>4</sup>	Units	3,805	8,563	16,059
	Number of 4G mid-band available base stations	Thousand	2,276	Over 2,900	Over 2,300
	Total number of 5G base station construction	Thousand	1,000	Over 1,210	1,375
	Number of fixed network broadband access ports	Billion	0.250	0.266	0.279
	Gigabit fibre network coverage capacity	Billion households	0.208	0.356	0.430
	Broadband coverage rate in administrative villages in ten northern provinces	%	99	99	99.8
Network capabilities	Coverage rate of mobile network in township	%	100	100	100
	Coverage of mobile network administrative villages	%	96	98	99
	The co-construction rate of pole lines	%	95	99.2	90.3
	Cable sharing rate	%	93	99.6	96.4
	Co-construction rate of pipelines	%	91	94.9	92.5
	Sharing rate of pipelines	%	93	98.2	96.3
	International internet external bandwidth	G	5,860	7,000	8,010
	Number of data centre racks	Thousand	363	405	Over 420
	Total number of emergency communication guarantees⁵	Times	672	160	127
Commitment in major assurance	Emergency communication support personnel <sup>5</sup>	Thousand person- time	790	242	341
initiatives	Mobile emergency communication vehicles <sup>5</sup>	Thousand vehicle- time	285	70	87
	Investment in emergency communication equipment ${}^{\!\!\!\!\!^{5}}$	Thousand set-time	186	13	6
	R&D investment	RMB billion	14.38	15.12	15.93
Independent	Number of effective patents	Items	-	-	9,397
innovation	Number of patents applied	Items	2,672	4,398	2,071
	Number of patents granted	Items	1,666	2,287	1,436

Cotorer		11	0000	0000	- 0004
Category		Unit	2022	2023	2024
	Overall satisfaction <sup>6</sup>	Points	81.97	81.78	82.0
	Including: Mobile business customer satisfaction	Points	81.24	80.93	81.2
Customer service	Fixed line phone customer satisfaction	Points	88.34	88.94	89.3
	Fixed Internet customer satisfaction	Points	81.32	81.29	81.5
	Valid complaint rate <sup>7</sup>	cases/million households	-	-	43.5
	Total number of employees	Person	244,658	242,891	240,617
	Gender proportion of employees	Male: female	1.63:1	1.62:1	1.62:1
	Proportion of ethnic minority employees	%	6.8	6.98	7.16
	Proportion of female in senior management	%	12.8	12.3	12.9
	Input in employee training	RMB thousand	333,320	464,650	397,210
	Training hours per employee	Hours	118	115	126
	Network college online learning person- time	Thousand persons	50,040	59,860	57,430
	Total learning hours by participants at the network college	Thousand hours	-	-	14,560
	Social insurance coverage rate	%	100	100	100
	Proportion of contracted employees in labour	%	100	100	100
	Input to help and support employees suffered from difficulties	RMB thousand	81,000	120,000	123,070
	Employee turnover rate	%	2.18	2.06	1.97
	Number of new employees	Person	13,260	9,446	8,409
	Number of new male employees	Person	8,468	5,975	5,269
	Number of new female employees	Person	4,792	3,471	3,140
People-oriented	Number of employees who voluntarily resign	Person	3,200	3,321	2,926
	Number of male employees who voluntarily resigned	Person	2,103	2,063	1,927
	Number of female employees who voluntarily resigned	Person	1,097	1,258	999
	Number of dismissed employees during the year	Person	2,122	1,686	1,812
	Number of dismissed male employees	Person	1,369	1,083	1,200
	Number of dismissed female employees	Person	753	603	612
	Turnover rate of employees aged below 30	%	4.23	6.98	4.19
	Turnover rate of employees aged 30–50	%	0.94	1.34	0.77
	Turnover rate of employees aged over 50	%	0.35	0.72	0.45
	Turnover rate of male employees	%	1.39	2.09	1.30
	Turnover rate of female employees	%	1.18	2.01	1.09
	Turnover rate of domestic employees	%	1.31	1.4	1.2
	Turnover rate of oversea employees	%	1.68	3.2	11.30
	Number of work-related fatalities	Person	0	0	0
	Rate of work-related fatalities	%	0	0	0
	Lost days due to work injury	Day	0	0	0

		11.11			0004
Category	Indicators	Unit	2022	2023	2024
	Special investment in energy conservation and emission reduction	RMB billion	0.168	0.336	0.411
	Greenhouse gas emission reduction	Thousand tonnes of carbon dioxide equivalent	120	1,360	2,297
	Water resources consumption	Thousand tonnes	16,630	14,920	15,680
	Water consumption density	Tons/RMB Million	50.72	40.04	40.22
	Total energy consumption	Thousand tonnes of standard coal	2,890	2,920	3,040
	Energy saving	Thousand tonnes of standard coal	269	415	445
	Fossil energy consumption	Thousand tonnes of standard coal	60	50	50
	Gasoline consumption <sup>8, 9</sup>	Millions of litres	40	29	31.7
	Diesel consumption <sup>8, 9</sup>	Millions of litres	11	9	8.9
	Coal consumption <sup>9</sup>	Thousand tonnes	1	0.3	0.9
	Natural gas consumption <sup>9</sup>	Millions of m <sup>3</sup>	4.65	4.09	4.97
	Electricity consumption <sup>9</sup>	Billion kWh	22.2	22.5	23.4
Low-carbon	Comprehensive Energy consumption per unit of information flow	Kg of standard coal/ TB	2.4	2.3	2.0
development	Energy consumption intensity	Tonnes of standard coal/RMB million	-	-	5.8
	Direct energy consumption	Thousand tonnes of standard coal	-	-	53
	Indirect energy consumption	Thousand tonnes of standard coal	-	-	2,983
	Greenhouse gas emissions <sup>10</sup>	Million tonnes	13.4	13.25	13.00
	Total direct emission of GHG (category I)	Million tonnes	0.14	0.10	0.11
	Total indirect emission of GHG (category II)	Million tonnes	13.22	13.15	12.89
	Category III GHG Emissions – Category 6: Business travel <sup>11</sup>	Thousand tonnes	-	-	33.7
	Indirect greenhouse gas emissions generated from electricity consumption	Million tonnes	-	-	12.54
	Indirect greenhouse gas emissions from thermal energy consumption	Million tonnes	-	-	0.36
	Sulphur dioxide emission	Tonnes	2	0.1	0.3
	Scrap disposal and recycling amount	RMB billion	0.63	0.655	0.680
	Disposal of scrapped batteries (hazardous)	RMB billion	0.093	0.123	0.140
	Comprehensive waste treatment volume (non-hazardous)	RMB billion	0.287	0.297	0.540
Compliance	Number of safety production hazard inspections <sup>12</sup>	ltem	-	-	61,700
management	Production safety training coverage rate	%	100	100	100
	Number of registered volunteers	Units	89,714	95,734	103,778
Community	Total tax paid	RMB billion	7.105	8.60	13.70
responsibility	Employment creation	Person	13,349	9,446	8,409
	Total donations	RMB thousand	1,045	1,436	2,031

Notes:

Data Description: The data and information collection of this report mainly sourced from the Company's internal data collection system and relevant statistical reports, as well as the corporate sustainable development practise cases submitted by provincial companies. There is no material change in relation to the methods used for prepping the 1 disclosure. The data for 2024 guoted in this report is the final statistical data. If there is any discrepancy between the financial data and the annual report, the annual report shall prevail. The monetary unit adopted in this report is RMB. Please refer to the "Description to the Report" for the details of the report reference standards.

2.

Quality assurance: The Board of Directors and all directors undertake that the information disclosed in the report is authentic, complete and correct, with no false record or 3. misleading statements.

4. To better reflect the Company's good progress in grasping new opportunities, embracing new changes and achieving new development, the Company has adjusted the disclosure of its monthly operational statistics since 22 March 2022, and improved market transparency in a number of key business areas such as "Ubiquitous Connectivity, Innovative Application, Smart Services and Technological Innovation"

5. The Company revised the important communication guarantee scheduling mechanism, refined the hierarchical and classified management standards, and adjusted the statistical calibre such as the number, personnel, vehicles and equipment investment for important communication guarantee services starting from 2023.

6. The comprehensive satisfaction data is sourced from the Ministry of Industry and Information Technology of the People's Republic of China, and from 2024 onwards, the compliance status will replace the specific scores.

The 2024 valid complaint rate (cases per million households) data is sourced from the Ministry of Industry and Information Technology of the People's Republic of China, 7. and differs from the 2022 monthly average complaint rate of 6.71 (instances per million subscribers) and the 2023 customer complaint rate of 746.5 (instances per million subscribers), thus the data for 2022 and 2023 is shown as "-".

- 8. With reference to the requirements of ESG information disclosure, gasoline and diesel consumption has been measured by volume unit since 2022.
- The data statistics of gasoline consumption, diesel consumption, natural gas consumption, electricity consumption and coal consumption cover the headquarters and 31
  provincial branches. The conversion factor of each energy consumption shall refer to "General Rules for the Calculation of the Comprehensive Energy Consumption".
- provincial branches. The conversion factor of each energy consumption shall refer to "General rules for the calculation of the comprehensive Energy Consumption".
  10. The Company uses operational control methods to account for greenhouse gases, including all relevant operational entities within the accounting scope. The type of greenhouse gas accounted for is carbon dioxide. The accounting guidelines are derived from the "Guidelines for Accounting and Reporting Greenhouse Gas Emissions for Enterprises in Other Industrial Sectors" issued by the National Development and Reform Commission. The average greenhouse gas emission factor for the power grid is sourced from the Ministry of Ecology and Environment's "Notice on the Management of Greenhouse Gas Emission Reporting for Power Generation Industry Enterprises from 2023 to 2025" (Climate Office Letter [2023] No. 43) and "Announcement on the Release of 2022 Power Carbon Dioxide Emission Factors" (Announcement 2024 No. 33). The carbon dioxide emission factor for purchased thermal energy is sourced from the "Notice on Issuing the Third Batch of 10 Industry Enterprise Greenhouse Gas Accounting Methods and Reporting Guidelines (Trial)" by the General Office of the National Development and Reform Commission (Development Reform Office Climate [2015] No. 1722). The carbon dioxide emission factors for coal, natural gas, gasoline, and diesel are sourced from the "2006 IPCC National Greenhouse Gas Inventory Guidelines," with gasoline density set at 0.735 Kg/L.
- 11. The scope of greenhouse gas emissions statistics for business travel is limited to domestic units. Transportation methods include trains and aeroplanes. The calculation method is the emission factor method, which calculates carbon emissions based on the carbon emission coefficient per unit mileage and then sums them up. The total mileage is calculated based on financial travel reimbursement data. The carbon emission factor for air travel is set at 0.139kg/km, while for train travel it is set at 0.04kg/km.
- 12. To more accurately and intuitively reflect the actual situation of potential risk inspections in safe production, the Company will optimise the relevant disclosure indicators for safe production from 2024 onwards, replacing "number of safety production training" with "number of safety production hazard inspections".

# **Honours and Recognition**

✓ China Unicom ranked 279th in "Fortune Global 500" in 2024.

✓ China Unicom was honoured with several accolades including "Best Listed Company CEO" and "Best Listed Company" in the 2024 China Securities Golden Bauhinia Awards.

✓ China Unicom was voted as "Asia's Most Honoured Telecom Company", by Institutional Investor for the ninth consecutive year. China Unicom was also voted as "Asia's Best CEO (Telecoms)", "Asia's Best CFO (Telecoms)" and "Best IR Program (Telecoms)".

✓ China Unicom was honoured with the "Best in Communications Sector" award at the "IR Magazine Awards – Greater China 2024".

✓ China Unicom was awarded "Best Managed Company in China – Gold", "Best Large-cap Company in China – Gold", "Best CEO in China – Gold", and "Most Committed to DEI in China – Gold" by FinanceAsia.

✓ China Unicom was accredited with "Sustainable Asia Award", "Asia's Best CEO", "Asia's Best CFO", and "Best Investor Relations Company" at the 14th Asian Excellence Recognition Awards 2024 held by Corporate Governance Asia.

✓ The listed company's website has been awarded the "iNova Awards" Gold Award for the ninth consecutive year, and in 2024, it received the Gold Award in "Investor/Shareholder Relations", the "Mercury Awards" Gold Award, and the "Best Use of Video – Gold" from International w3 awards.

# Description to the Report

<b>Reporting Period</b>	From 1 January to 31 December 2024, with some contents exceeding the aforesaid period.
Reporting Cycle	China Unicom (Hong Kong) Limited's Sustainability Report is an annual report.
Scope of the Report	This report covers China Unicom (Hong Kong) Limited and its subsidiaries. For the convenience of expression, "China Unicom", "the Group", "the Company" and "we" are used in the presentation of this report.
Reporting Reference Standard	Guiding Opinions on High Standards of Social Responsibility Fulfilment by Central Enterprises in the New Era issued by the State-owned Assets Supervision and Administration Commission of the State Council; Guidelines for Preparation of Central Enterprises Social Responsibility Report (Draft for Comments) issued by the State-owned Assets Supervision and Administration Commission of the State Council; Enterprise Sustainable Disclosure Standards – Basic Guidelines (Trial) issued by the Ministry of Finance; Shanghai Stock Exchange Listed Companies Self-Regulatory Guidelines No. 14 – Sustainability Report (Trial) issued by the Shanghai Stock Exchange; HKEX Environmental, Social and Governance Reporting Guide; Chinese Academy of Social Sciences' Guidelines for the Preparation of Corporate Social Responsibility Reports in China (CASS-ESG6.0); Social Responsibility Guidelines (GBT36000-2015), General Administration of Quality Supervision, Inspection and Quarantine and National Standardization Administration; GRI Sustainability Reporting Standards issued by the Global Sustainability Standards Board (GSSB); Corporate Social Responsibility Management System of China's Information and Communication Industry issued by the China Association of Communications Enterprises.
Report Data Description	The 2024 data quoted in this report are final statistical data. In case of any discrepancy between the financial data herein and those in annual report, the annual report shall prevail.
Reporting Quality Assurance	The Board of Directors and all directors undertake that the information disclosed in the report is authentic, complete and accurate, with no false record or misleading statement.
Language versions and availability	The Company's sustainability report is available in both Chinese and English versions, provided in both paper and online formats. The Chinese and English version of the online report is available on the website of China Unicom: http://www.chinaunicom.com.hk.
Contact information	Address: China Unicom Corporate Development Department, No. 21 Jinrong Street, Xicheng District, Beijing Postal code: 100033 Fax: 86-10-66258604 Email: zhangting62@chinaunicom.cn

# Indexes

Index	Page Disclosed	Index	Page Disclosed	Index	Page Disclosed	Index	Page Disclosed
A1	P42-50	A2.5	See Note 1	<b>B</b> 3	P64–65	B6.1	See Note 2
A1.1	P45, 92	A3	P46	B3.1	P65	B6.2	P32, 91
A1.2	P92	A3.1	P47	B3.2	P65	B6.3	P80
A1.3	P92	A4	P43–45	B4	P62	B6.4	P33–34
A1.4	P92	A4.1	P43–45	B4.1	P62	B6.5	P71–74
A1.5	P45, 46–47	B1	P62, 64	B4.2	P62	B7	P76
A1.6	P48	B1.1	P64, 91	B5	P57	B7.1	P76
A2	P46–50	B1.2	P91	B5.1	P58	B7.2	P76–77
A2.1	P92	B2	P66, 79	B5.2	P57	B7.3	P77
A2.2	P92	B2.1	P91	B5.3	P57	B8	P37-41, 58-62
A2.3	P45–47	B2.2	P91	B5.4	P57	B8.1	P58
A2.4	P49	B2.3	P66	B6	P33–34	B8.2	P58

#### Environmental, Social and Governance Reporting Guide, HKEX

Notes:

1. As the Company mainly engages in the provision of information communication services, packaging material used for the finished products as prescribed in A2.5 is not applicable to the Company's business practice.

 Product recycling indicator involved in B6.1 is not applicable to the actual business of the Company. Through the identification of substantive agenda, the Company mainly reported on the maintenance of network information security, the protection of emergency communication, and the protection of customer rights and interests in accordance with the law.

### Shanghai Stock Exchange "Shanghai Stock Exchange Listed Companies Self-Regulation Guidelines No. 14 – Sustainability Report (Trial)"

Disclosure requirements	Page Disclosed	Index	Page Disclosed	Index	Page Disclosed
Addressing climate change	P42-46, 92	Circular economy	P48–49, 92	Product and service safety and quality	P32-34
Pollutant emissions	P47, 49, See Note 1	Rural Revitalization	P37–42	Data security and customer privacy protection	P71–74
Waste disposal	P48, 92, See Note 2	Social contribution	P58–59, 92	Employee	P62–65, 91
Protection of Ecosystems and Biodiversity	P29, 50, See Note 3	Innovation-driven	P17–19, 90	Due diligence	P87
Environmental Compliance Management	P42-43	Technology Ethics	N/A	Communication with Stakeholders	P87-88
Energy Utilisation	P46–48, 92	Supply chain security	P57–58	Anti-commercial bribery and anti-corruption	P76–77
Water resource utilisation	P49, 92	Equal treatment of SMEs	P58	Anti-unfair competition	P33

Notes:

1. Since the Company is not included in the list of enterprises required by law to disclose environmental information, and its production process does not involve the discharge of industrial wastewater and waste gas, the relevant indicators of pollutant emissions are not applicable to the actual business of the Company. We mainly reported on the management and discharge of domestic wastewater.

Since the Company is not an enterprise whose production and operation activities generate waste that has a significant impact on the environment, the relevant
indicators of waste disposal are not applicable to the actual business of the Company. We mainly report on the management of solid waste categorized as hazardous
and non-hazardous, the disposal situation, and reduction measures.

3. Since the Company's production and operation activities do not have a significant impact on the ecosystem and biodiversity, the relevant indicators for protection of ecosystem and biodiversity are not applicable to the actual business of the Company. We mainly report on enhancing the integration of digital technology with river and lake governance and ecological protection, and the planning of networks to avoid ecological protection red lines.

	Index	Page Disclosed		Index	Page Disclosed		Index	Page Disclosed
	E1.1.1	P49	E5.3	E5.3.1	P44-45	S3.2	\$3.2.3	P57
E1 1	E1.1.2	P49		E5.4.1	P46-47	S4.1	S4.1.1	P92
E1.1	E1.1.3	See Note 1		E5.4.2	P47–48	64.0	S4.2.1	P37, 61–62
	E1.1.4	P92	55.4	E5.4.3	P49	S4.2	\$4.2.2	P438, 62
	E1.2.1	N/A, See Note 2	E5.4	E5.4.4	P49		S4.3.1	P58
E1.2	E1.2.2	N/A, See Note 2		E5.4.5	P57	S4.3	S4.3.2	P58–59
	E1.2.3	N/A, See Note 2		E5.4.6	P50		S4.3.3	P60–61
	E1.3.1	P92		E5.5.1	P43		S4.4.1	P74–76
	E1.3.2	P92	E5.5	E5.5.2	P43	C4.4	S4.4.2	P37–42
E1.3	E1.3.3	-		E5.5.3	P50	S4.4	S4.4.3	P50–52
	E1.3.4	P92	FF 0	E5.6.1	P44		S4.4.4	P46
	E1.3.5	P92	E5.6	E5.6.2	P44		G1.1.1	P7–8
<b>F</b> 4 4	E1.4.1	N/A, See Note 2		\$1.1.1	P62, 64	01.1	G1.1.2	P8
E1.4	E1.4.2	P49, See Note 3	S1.1	\$1.1.2	P64	G1.1	G1.1.3	P8
	E2.1.1	P49, See Note 3		\$1.1.3	P62	· • • • • • • • • • • • • • • • • • • •	G1.1.4	-
	E2.1.2	P49, See Note 3		S1.2.1	P63		G1.2.1	P7–8
E2.1	E2.1.3	P49, See Note 3	S1 2	S1.2.2	P63	G1.2	G1.2.2	P6–8
	E2.1.4	N/A, See Note 3	S1.2	S1.2.3	P63, 67		G1.2.3	P8
	E2.1.5	N/A, See Note 3		S1.2.4	P63–64		G1.3.1	P8
	E2.2.1	N/A, See Note 3	S1.3	S1.3.1	P66, 79	G1.3	G1.3.2	P8
E2.2	E2.2.2	N/A, See Note 3		S1.3.2	P79		G1.3.3	P8
	E2.2.3	N/A, See Note 3		S1.3.3	P79		G2.1.1	P77
	E2.3.1	P48		S1.3.4	P67	G2.1	G2.1.2	P77–78
	E2.3.2	P48		S1.4.1	P64		G2.2.1	P76
E2.3	E2.3.3	P92	S1.4	S1.4.2	P64	G2.2	G2.2.2	P76–77
	E2.3.4	P48		S1.4.3	P64		G2.3.1	P33
	E2.3.5	P92		S1.5.1	P63	G2.3	G2.3.2	P33
	E3.1.1	P45	S1.5	S1.5.2	P64		G3.1.1	P88
	E3.1.2	P42–43, 46		S1.5.3	P91	G3.1	G3.1.2	P89
	E3.1.3	P92		S2.1.1	P33–34	· · · · ·	G3.1.3	P88
E3.1	E3.1.4	P92		S2.1.2	P34		G3.2.1	P88
	E3.1.5	P92	S2.1	S2.1.3	P33–34	G3.2	G3.2.2	P88
	E3.1.6	P92		S2.1.4	P33–34		G3.2.3	P88
	E3.2.1	P46–47		S2.2.1	P31-33		G3.3.1	P88
E3.2	E3.2.2	P92	S2.2	S2.2.2	P32	G3.3	G3.3.2	P88
	E3.3.1	P47–48		S2.2.3	P72		G4.1.1	P88, 90
E3.3	E3.3.2	-		S2.3.1	P18	G4.1	G4.1.2	P90–92
	E3.3.3	P47–48		S2.3.2	P18	G4.2	G4.2.1	P88, 92–93
E3.4	E3.4.1	P42–45	S2.3	S2.3.3	P17–19		G5.1.1	P52, 80
E4.1	E4.1.1	P29–30		S2.3.4	P75, 80	G5.1	G5.1.2	P80
E5.1	E5.1.1	P42–45		\$3.1.1	P57	· · · ·	G5.1.3	P80
	E5.2.1	P49	S3.1	S3.1.2	P58		G5.2.1	P78
FF 0	E5.2.2	N/A, See Note 2		\$3.2.1	P57–58	G5.2	G5.2.2	P78
E5.2			S3.2					

### The SASAC of the State Council's "Reference Index System for ESG Special Report of Central Enterprise-Controlled Listed Companies"

#### Note:

- 1. Due to the extensive coverage of China Unicom's business operations, we are currently unable to provide a comprehensive statistic for the proportion of recycled water usage related to E1.1.3. Through substantial issue identification, we mainly report the total annual water consumption, including that of the headquarters and all subsidiaries, as well as the recycled water usage from the headquarters and directly affiliated units. In the future, the company will further improve the relevant data statistical systems.
- 2. Since the company's primary business involves providing information and communication services, the material and packaging-related indicators associated with E1.2, E1.4, and E5.2.2 are not applicable to our operations. We primarily report on initiatives related to the lightweight and reduction of packaging materials involved in the renovation of China Unicom's service halls.
- 3. The company's production processes do not involve industrial wastewater and exhaust emissions, and we are not classified as a major polluter. Therefore, the wastewater and exhaust indicators related to E2.1 and E2.2 are not applicable to our operations. We primarily report on the management and discharge of domestic wastewater.

### Guidelines for China Enterprise Sustainable Development Report (CASS-ESG6.0)

Index	Page Disclosed	Index	Page Disclosed	Index	Page Disclosed	Index	Page Disclosed
1. Preface of th	ne Report (P series)	E2.1.1	P48	(E3.2) Water	Source Utilization	S2.1.7	P18
(P1) Specifica	tion of the Report	E2.1.2	See Note 1	E3.2.1	P92	S2.1.8	P19
P1.1	P93	E2.1.3	See Note 1	E3.2.2	P92	S2.1.9	P19, 90
P1.2	P93	E2.1.4	See Note 1	E3.2.3	P49	S2.1.10	P19, 90
(P2) Message from	n Senior Management	E2.1.5	See Note 1	E3.2.4	P49	S2.1.11	P19, 90
P2.1	P4-5	E2.1.6	See Note 1	(E3.3) Cii	rcular Economy	S2.1.12	P18–19
(P3) Corp	oorate Profile	E2.1.7	See Note 1	E3.3.1	P48	S2.1.13	P18–19
P3.1	P6	E2.1.8	See Note 1	E3.3.2	P48–49	(S3) Supplie	ers and Customers
P3.2	P6	E2.1.9	See Note 1	E3.3.3	P48–49	(S3.1) Supp	oly Chain Security
P3.3	P6	(E2.2) W	/aste Disposal	E3.3.4	P48–49	S3.1.1	P57–58
P3.4	P7–8	E2.2.1	See Note 2	E3.3.5	P48, 92	S3.1.2	P57–58
2. Environr	ment (E series)	E2.2.2	See Note 2	E3.3.6	P49	S3.1.3	P57–58
(E1) Addressin	ng Climate Change	E2.2.3	See Note 2	3. Soc	ial (S series)	S3.1.4	P57–58
(E1.1) Addressi	ng Climate Change	E2.2.4	See Note 2	(S1) Rural Revitaliza	tion and Social Contribution	(S3.2) Equal	Treatment of SME
E1.1.1	P42	E2.2.5	See Note 2	(S1.1) Rur	al Revitalization	S3.2.1	P58
E1.1.2	P42–43	E2.2.6	See Note 2	\$1.1.1	P37	\$3.2.2	P58
E1.1.3	P43	E2.2.7	See Note 2	S1.1.2	P37–42	(S3.3) Product and	Service Safety and Quality
E1.1.4	P45	(E2.3) Ecosystem an	d Biodiversity Conservation	S1.1.3	P37–40	\$3.3.1	P32–34
E1.1.5	P44–45	E2.3.1	See Note 3	S1.1.4	P37–40	S3.3.2	P32–34
E1.1.6	P44	E2.3.2	See Note 3	S1.1.5	P37–40	S3.3.3	P32–34
E1.1.7	P92	E2.3.3	See Note 3	(S1.2) Soc	cial Contribution	S3.3.4	P32–34
E1.1.8	P92	E2.3.4	See Note 3	S1.2.1	P58–60	S3.3.5	P32–34
E1.1.9	P92	E2.3.5	See Note 3	S1.2.2	P58–60	S3.3.6	P32–34
E1.1.10	P48	(E2.4) Environmenta	l Compliance Management	S1.2.3	P92	(S3.4) Data Security a	nd Customer Privacy Protection
E1.1.11	P48	E2.4.1	P44	S1.2.4	P58–60	S3.4.1	P71–72
E1.1.12	P45	E2.4.2	P44–45	S1.2.5	P58–60	S3.4.2	P71–72
E1.1.13	P92	E2.4.3	P44–45	S1.2.6	P58–60	\$3.4.3	P71–72
E1.1.14	P93	E2.4.4	P44–45	(S2) Inn	ovation Driven	S3.4.4	P71–72
E1.1.15	P48	(E3) Resource Utiliza	ation and Circular Economy	(S2.1) Ini	novation Driven	(S4)	Employee
E1.1.16	P45–48, 92	(E3.1) En	ergy Utilization	S2.1.1	P17–19	(S4.1) Emp	ployee Protection
E1.1.17	P92	E3.1.1	P92	S2.1.2	P17–19	S4.1.1	P92
E1.1.18	P92	E3.1.2	P92	S2.1.3	P17–19	S4.1.2	P64
E1.1.19	P46–48	E3.1.3	P92	S2.1.4	P18, 90	S4.1.3	P64
(E2) Pollution Preventio	on and Ecosystem Protection	E3.1.4	P92	S2.1.5	P18	S4.1.4	P62
(E2.1) Pollu	Itant Emissions	E3.1.5	P45, 47	S2.1.6	P18	S4.1.5	P64

Index	Page Disclosed	Index	Page Disclosed	Index	Page Disclosed	Index	Page Disclosed
S4.1.6	P91	S4.3.3	P64–65	G1.1.11	P86–87	G2.1.6	P76-77
S4.1.7	P63	S4.3.4	P65, 91	G1.1.12	P86–87	G2.1.7	P76–77
S4.1.8	P64	S4.3.5	P65, 91	(G1.2)	Due Diligence	G2.1.8	P76–77
S4.1.9	P91	S4.3.6	P65, 91	G1.2.1	P87	(G2.2) Anti	-unfair Competition
S4.1.10	P62	4. Gover	nance (G series)	G1.2.2	P87	G2.2.1	P33
S4.1.11	P62	(G1) Governance M	echanisms for Sustainable	G1.2.3	P87	G2.2.2	P33
S4.1.12	P63–64	(G1.1) Sustainable	e Governance Mechanism	G1.2.4	P87	G2.2.3	P33
(S4.2) He	alth and Safety	G1.1.1	P85–86	(G1.3) Stakeho	older Communication	5. Report C	onclusion (S series)
S4.2.1	P79–80	G1.1.2	P85–86	G1.3.1	P87–88	(A1)	P5
S4.2.2	P79–80	G1.1.3	P85–86	G1.3.2	P87–88	(A2)	P90–92
S4.2.3	P79–80	G1.1.4	P85–86	(G2) Bus	iness Practices	(A3)	P94–98
S4.2.4	P92	G1.1.5	P85–86	(G2.1) Anti-commerci	ial Bribery and Anti-corruption	(A4)	-
S4.2.5	P91	G1.1.6	P85–86	G2.1.1	P76–77	(A5)	-
S4.2.6	P78–79	G1.1.7	P85–86	G2.1.2	P76–77	(A6)	P99
S4.3) Career Dev	velopment and Training	G1.1.8	P85–86	G2.1.3	P76–77		
S4.3.1	P65, 91	G1.1.9	P86–87	G2.1.4	P76–77		
S4.3.2	P64–65	G1.1.10	P86–87	G2.1.5	P76–77		

#### Note:

- 1. The company is not included in the list of enterprises mandated by law to disclose environmental information. Additionally, our production processes do not involve industrial wastewater and emissions. Therefore, the pollution emission indicators related to E2.1 are not applicable to our operations. We primarily report on the management and discharge of domestic wastewater.
- 2. As the company does not fall under the category of enterprises whose waste generated from production activities significantly impacts the environment, the waste treatment indicators associated with E2.2 are not relevant to our operations. We focus our reporting on the management of solid waste categorized as hazardous and non-hazardous, along with disposal practices and reduction initiatives.
- 3. Given that the company's production and operational activities do not significantly affect ecosystems and biodiversity, the ecosystem and biodiversity protection indicators related to E2.3 are not applicable to our operations. Our reporting primarily addresses the integration of digital technology with river and lake governance and ecological protection, including network planning to circumvent ecological protection red lines.

### GRI Sustainability Reporting Standards

No.	Page Disclosed	No.	Page Disclosed	No.	Page Disclosed	No.	Page Disclosed
GRI1: Ge	neral Disclosure	3. 0	lovernance	2-21	-	3-1	P86–87
GRI1	GRI1: Foundation 2021	2-9	P6-7	4. Strategy, P	olicies and Practises	3-2	P86–87
GRI standard	P93	2-10	P8	2-22	P85	3-3	P86–87
1. Organisation	and Reporting Practises	2-11	P7	2-23	P7, 62	GRI201: Eco	nomic Performance
2-1	P6	2-12	P7	2-24	P56–57	3-3	P4–5
2-2	P93	2-13	P85	2-25	P32	201-1	P90
2-3	P93	2-14	P85	2-26	P32	201-2	P43–44
2-4	P92–93	2-15	P7–8	2-27	P34	201-3	P62–63
2-5	-	2-16	P85	2-28	P75	201-4	See Note 1
2. Activit	ies and Workers	2-17	P85–86	5. Participati	on by Stakeholders	GRI203: Indire	ect Economic Impacts
2-6	P54–58	2-18	P85–86	2-29	P89	3-3	P11
2-7	P64, 91	2-19	P8	2-30	P62–63	203-1	P10–13
2-8	P64	2-20	P8	GRI3: N	laterial Topics	203-2	P10-13

No.	Page Disclosed	No.	Page Disclosed	No.	Page Disclosed	No.	Page Disclosed
GRI 204 Pro	curement Practises	305-6	N/A, See Note 2	403-3	P66	408-1	P62
3-3	P57	305-7	N/A, See Note 2	403-4	P66	GRI 409: Forced	or Compulsory Labou
204-1	P57–58	GRIS	806: Waste	403-5	P66	3-3	P62
GRI205:	Anti-corruption	3-3	P48–49	403-6	P66	409-1	P62
3-3	P76	306-1	P49	403-7	P66	GRI413: Lo	ocal Communities
205-1	P76–77	306-2	P48	403-8	P66	3-3	P52
205-2	P76–77	306-3	P48	403-9	P66	413-1	P52
205-3	P76–77	306-4	P48	403-10	P66	413-2	P52
GRI206: Anti-c	ompetitive Behaviour	306-5	P49	GRI404: Train	ing and Education	GRI414: Suppl	ier Social Assessment
3-3	P33	GRI308: Supplier E	nvironmental Assessment	3-3	P65	3-3	P57
206-1	P33	3-3	P57	404-1	P65	414-1	P57
GRI	302: Energy	308-1	P57	404-2	P65	414-2	P57
3-3	P46	308-2	P57	404-3	P64	GRI416: Custor	mer Health and Safety
302-1	P92	GRI401	: Employment	GRI405: Diversity	and Equal Opportunity	3-3	P73
302-2	P92	3-3	P62	3-3	P64	416-1	P73
302-3	P92	401-1	P91	405-1	P91	416-2	P73
302-4	P92	401-2	P66–68	405-2	P64	GRI417: Mar	keting and Labelling
302-5	P92	401-3	P66	GRI406: No	n-discrimination	3-3	P33–34
GRI30	05: Emissions	GRI402: Labour/I	Vanagement Relations	3-3	P64	417-1	P33–34
3-3	P42–43	3-3	P64	406-1	P64	417-2	P33
305-1	P92	402-1	P64	GRI407: Freedom of Asso	ciation and Collective Bargaining	417-3	P33
305-2	P92	GRI403: Occupat	ional Health and Safety	3-3	P64	GRI418: 0	Customer Privacy
305-3	P92	3-3	P73	407-1	P64	3-3	P71
305-4	P92	403-1	P73	GRI 408:	Child Labour	418-1	P71
305-5	P92	403-2	P73	3-3	P62		

Note:

1. The relevant content regarding government financial subsidies related to 201-4 is included in our company's 2024 annual report.

2. Material gases such as ozone-depleting substances (ODS), nitrogen oxides (NOX) and sulphur oxides (SOX) cited in 305-6 and 305-7 are not the major emissions of the Company.

# G Feedback

#### Dear Reader:

Thank you for reading China Unicom's 2024 Sustainability Report, which is the ninth sustainability report published by the Company to the public. In order to better provide you and other stakeholders with valuable information while facilitating the supervision of social responsibility works as well as enhancing the capability and standard of performing social responsibility, we would like to have your valuable opinions and suggestions regarding this report.

Email: zhangting62@chinaunicom.cn Fax: 86-10-66258604 Address: China Unicom Corporate Development Department, No. 21 Jinrong Street, Xicheng District, Beijing, China, 100033

#### • Your capacity:

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

#### • Overall evaluation of China Unicom's Sustainability Report:

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

Evaluation of China Unicom's performance in economic, social and environmental responsibilities:

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

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

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

Overall evaluation of this report in terms of the clarity, accuracy and integrity of the disclosure of information, data and index:

Clarity	A. Excellent	B. Good	C. General	D. Not Satisfactory	E. Poor
Accuracy	A. Excellent	B. Good	C. General	D. Not Satisfactory	E. Poor
Integrity	A. Excellent	B. Good	C. General	D. Not Satisfactory	E. Poor

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

Content Arrangement	A. Excellent	B. Fair	C. Inconvenient
Layout Design	A. Excellent	B. Fair	C. Inconvenient

• Any other opinion/suggestion for our work and report of sustainability?



CHINA UNICOM (HONG KONG) LIMITED 75th Floor, The Center, 99 Queen's Road Central, Hong Kong www.chinaunicom.com.hk

