

Foreward - Internet development achievements during the 14th Five Year Plan

During the 14th Five Year Plan, China made significant progress in internet development. Broad nationwide 5G coverage was achieved, and the deployment of new infrastructure, including data centres and cloud computing, accelerated, providing strong support for the digital economy. China's internet user population reached 1.123 billion, enabling more people to share in the benefits of digital development. The digital economy continued to expand and industrial digital transformation gathered pace. Continuing breakthroughs in scientific and technological innovation, together with the faster deployment of artificial intelligence, provided strong momentum for integrating the digital and real economies.

1 Building digital foundations and accelerating infrastructure upgrades

Faster infrastructure upgrades

During the 14th Five Year Plan, China followed the principle of developing infrastructure moderately ahead of demand, accelerating the evolution and upgrading of information infrastructure and laying the foundations for internet development and the growth of the digital economy.

First, basic network capabilities improved markedly. China built the world's largest mobile communications and fibre broadband networks, achieving gigabit connectivity in every county, 5G in every township and 5G coverage in more than 90% of administrative villages. As at June 2025, the total number of 5G base stations reached 4.549 million. Gigabit network construction progressed steadily, with 30.22 million 10G PON ports capable of providing gigabit services and 226 million fixed broadband subscriptions at access speeds of 1,000 Mbps or above. The mobile Internet of Things accelerated its transition from connecting everything to intelligently connecting everything, reaching 2.831 billion terminal connections.¹

Second, inter-network internet architecture continued to become more multidimensional and flatter. By May 2025, China had established 29 national backbone internet direct interconnection points, with more than 70 Tbps of interconnection bandwidth in operation. Pilot national new-type internet exchange centres were established in Hangzhou, Shenzhen, Zhongwei, Shanghai and Wuhan, connecting almost 650 enterprises and handling peak exchange traffic of more than 13 Tbps.²

Third, computing infrastructure construction accelerated markedly. Over the five-year period, the computing network layout improved rapidly, placing China's computing capacity among the world's largest. By the end of March 2025, China had 10.43 million standard computing racks in use and 748 EFLOPS of intelligent computing capacity, providing an intelligent foundation for processing vast quantities of data.³

Continued growth in basic resources

During the 14th Five Year Plan, China's basic internet resources grew rapidly, providing essential underlying support for a flourishing digital economy and for national cybersecurity and stability.

First, .CN domain names ranked first worldwide for eleven consecutive years. As at June 2025, China had 32.62 million domain names, including 20.85 million registrations under the national top-level domain .CN. This was an increase of 1.88 million compared with the beginning of the 14th Five Year Plan, maintaining its leading global position for the eleventh consecutive year.

Second, IPv6 development accelerated. During the plan period, policy measures covering strategic planning and integrated industry applications were introduced, including the Notice on Accelerating the Large-scale Deployment and Application of Internet Protocol Version 6 and the Implementation Opinions on Advancing IPv6 Technology Evolution and Innovative Application Development. These supported phased progress in large-scale IPv6 deployment. As at June 2025, China held 68,567 /32 IPv6 address blocks; active IPv6 users reached 836 million in the first half of 2025.

2 Digital inclusion and sharing the benefits of development

Steady growth in the internet user population

During the 14th Five Year Plan, comprehensive infrastructure development, innovative internet applications and strong policy support and guidance enabled steady and relatively rapid growth in internet use. As at June 2025, China had 1.123 billion internet users, with penetration reaching 79.7%, an increase of 9.3 percentage points from the beginning of the plan period.

First, the urban-rural internet penetration gap gradually narrowed. China continued to implement its digital countryside strategy and accelerate the Broadband Border Areas initiative, improving network availability in border regions and steadily increasing rural informatisation. By June 2025, rural internet penetration had reached 69.2%, up 13.3 percentage points from the beginning of the plan period.

Second, the representation of older people among internet users increased significantly. Over the five-year period, China continued to adapt digital services for older people by improving standards, expanding the scale of adaptations and enhancing service experiences, helping older people cross the digital divide. As at June 2025, there were 161 million internet users aged 60 or above, and internet use among older people reached 52.0%, an increase of 8.7 percentage points from the beginning of the plan period. This represented a significant step towards enabling older people to benefit from digital and intelligent services.

Improving public services

During the 14th Five Year Plan, significant progress was made in applying digital technologies to government services, education, healthcare and other public services, making them more digital, convenient and inclusive.

First, online government services saw substantial growth in both user numbers and service quality. By the end of 2024, online government services had 1.004 billion users, 19.1% more than at the beginning of the plan period. Digital government services continued to improve. Since 2024, three batches comprising 33 integrated service packages under the Efficiently Completing One Matter initiative had been introduced, handling a cumulative 51 million cases. Work to establish the Regulations on Government Data Sharing supported more than 540 billion government data-sharing transactions across regions and departments.⁴ In the six years since its launch, the national government services platform had standardised

5.21 million service items and more than 36,000 frequently used service applications.⁵

Second, the content and delivery models of internet healthcare services evolved rapidly. As at June 2025, internet healthcare had 393 million users. Telemedicine networks continued to expand, reaching more regions and population groups. Services grew beyond their initial focus on online follow-up consultations and medicine delivery to include online consultations, health management and the dissemination of medical knowledge.

Third, digital education became more equitable and inclusive. As at June 2025, China had 293 million online education users, accounting for 26.1% of all internet users. Internet access had reached 100% of primary and secondary schools, including teaching sites,⁶ and opportunities for lifelong learning continued to widen. More than 76,800 massive open online courses had been made available, with 1.277 billion course participations. China ranked first worldwide in both the number of such courses and their scale of use.⁷

3 Digital empowerment and more effective integration with the real economy

Significant results in intelligent manufacturing

During the 14th Five Year Plan, China placed the digital transformation and upgrading of manufacturing in an important strategic position. Intelligent manufacturing became a principal focus of efforts to build manufacturing strength, revitalising the sector's transformation and upgrading.

First, strategic planning and coordinated policies drove deeper digital transformation. Over the five-year period, the policy framework continued to improve. Measures including the 14th Five Year Plan for Intelligent Manufacturing Development, the Action Plan for the Digital Transformation of Manufacturing and the Implementation Guide for the Digital Transformation of Manufacturing Enterprises provided strong support. By the first quarter of 2025, more than 30,000 basic-level smart factories, over 1,200 advanced-level smart factories and more than 230 excellence-level smart factories had been established nationwide.⁸ The

adoption rate of digital research, development and design tools among key industrial enterprises reached 84.1%.⁹

Second, technological innovation and industrial integration fostered new quality productive forces. Deep integration of next-generation information technologies, including artificial intelligence and big data, with manufacturing shifted production towards data-driven processes and intelligent decision-making, accelerating the emergence of productive forces led by science and technology. The National Industrial Internet Big Data Centre had collected 1.4 billion industrial data records and established an initial industrial model corpus. More than 340 industrial internet platforms had significant influence, and key platforms connected over 100 million industrial devices or sets of equipment. Enterprises had moved onto cloud services and platforms approximately 4 million times in total.¹⁰

Accelerating development of smart agriculture

During the 14th Five Year Plan, China advanced a new round of agricultural technological change and rural industrial transformation. Greater investment in innovation and the application of research results steadily increased agricultural digitalisation, bringing new momentum to rural revitalisation.

First, digital and smart agriculture developed rapidly. Over the five-year period, advanced technologies such as the Internet of Things, artificial intelligence and big data were widely applied in crop and livestock production. Smart agriculture projects continued to develop. The Ministry of Agriculture and Rural Affairs supported the establishment of 34 national smart agriculture innovation centres and sub-centres, alongside 116 innovative application projects.¹¹ Information technology became deeply integrated into agricultural production and management. By the end of 2023, 2.2 million agricultural machines nationwide were fitted with BeiDou terminals, with operational efficiency and accuracy reaching internationally advanced levels.¹² Precision sowing, variable-rate fertiliser application and crop-protection drones were adopted more widely. The informatisation rate of agricultural production reached 27.6%, and that of field crop cultivation reached 26.4%.¹³

Second, the rural e-commerce service system continued to improve. Over the five-year period, the comprehensive demonstration programme for bringing e-

commerce to rural areas was implemented extensively. It supported 1,489 counties in establishing nearly 3,000 county-level e-commerce public service centres and logistics distribution centres, and more than 158,000 village-level e-commerce service points.¹⁴ Postal and delivery networks linking counties, townships and villages expanded rapidly. China established 346,000 integrated village-level postal, delivery and logistics service stations,¹⁵ helping manufactured goods reach rural areas and agricultural products reach cities.

Strong performance in digital services

During the 14th Five Year Plan, the integration of digital technologies into commerce, distribution and everyday services accelerated, steadily increasing the digitalisation of the service sector and unlocking consumption potential.

First, online shopping became an important source of consumer-market vitality. National online retail sales reached RMB 6.04 trillion between January and May 2025.¹⁶ China maintained its position as the world's largest online retail market for thirteen consecutive years. As at June 2025, online shopping users numbered 976 million, 24.7% more than at the beginning of the plan period.

Second, online services continued to grow rapidly. Over the five-year period, food delivery, travel and other online services developed quickly. New combinations of culture and tourism, such as live-streamed sport and virtual performances, emerged continuously, enhancing immersive experiences. As at June 2025, user numbers for online travel booking, ride-hailing and online food delivery were respectively 50.2%, 40.0% and 36.0% higher than at the beginning of the plan period. Digital everyday services, including errand-running and rapid local delivery, and online domestic services, repairs and laundry, expanded rapidly, reaching 223 million and 153 million users respectively.

Third, digital content flourished. Content innovation, technological upgrades and cross-sector integration drove rapid development and change in online video, online music and other digital content. Short videos and micro-dramas continued to prosper, playing an increasingly important role in entertainment, social interaction and access to information. As at June 2025, short videos had 1.068 billion users, or 95.1% of all internet users, while micro-dramas had 626 million users, or 55.8%. Online music, online games and online literature had 724 million, 584 million and

513 million users respectively. The three emerging cultural export categories represented by online games, online literature, and online film and television performed strongly overseas and became prominent examples of China's cultural exports.

4 Digital innovation and stronger technological applications

Information and communications technology leading development

During the 14th Five Year Plan, China's 5G development moved from building networks well to using them effectively, and from technology-led development to value-led adoption. Its wide-ranging benefits provided strong support for new industrialisation and for building manufacturing and cyber strength.

First, technological innovation continued to deepen. China actively participated in international 5G standard-setting. It accounted for 42% of declared 5G standard-essential patents worldwide,¹⁷ placing its technological and industrial capabilities among the global leaders. For 6G research and development, the Ministry of Industry and Information Technology guided the establishment of the IMT-2030 (6G) Promotion Group to coordinate innovation. More than 50 research outputs were published, including the 6G Overall Vision and Potential Key Technologies. Tests and validation of key technologies, including integrated sensing and communications and wireless AI, accelerated their development.¹⁸

Second, applications delivered clear benefits. 5G applications had entered 86 major categories of the national economy, with 138,000 application cases and more than 18,500 5G plus Industrial Internet projects. Twenty typical application scenarios had emerged across ten major industries. 5G was increasingly integrated into core production processes in the real economy, covering the whole production chain.¹⁹

Third, mobile communications networks accelerated their evolution towards 5G-Advanced. China continued to lead international 5G-A standards, opened the first 5G-A base station on Mount Everest and launched the world's largest commercial 5G-A deployment. The range of 5G-A products expanded, and more than 300 cities began using 5G-A to support smart-city development.²⁰

Faster deployment of artificial intelligence applications

During the 14th Five Year Plan, China's artificial intelligence technologies developed rapidly, user numbers grew, applications expanded widely and industrial innovation accelerated.

First, technological innovation gathered pace. According to a World Intellectual Property Organization report, China had become the world's largest holder of artificial intelligence patents, accounting for 60% of the total.²¹ DeepSeek's large AI models made advanced models, parameter weights, reasoning logic and toolchains fully open source. Chinese large models topped download rankings in major global open-source communities.

Second, capabilities across the industry continued to improve. China developed a complete industrial system covering foundational infrastructure, frameworks, models and applications, nurturing a number of competitive general-purpose and sector-specific large models. The value of China's artificial intelligence industry exceeded RMB 700 billion in 2024, after maintaining growth above 20% for several consecutive years.²² The industrial chain covered key upstream and downstream components, including chips, algorithms, data, platforms and applications.

Third, large numbers of generative AI services emerged. By March 2025, 346 generative AI services had completed filing with the Cyberspace Administration of China. A further 159 generative AI applications or functions that directly called filed models through APIs or other methods had completed registration with local cyberspace administrations.²³

Fourth, AI applications advanced steadily. Large AI models were increasingly deployed in electronics, raw materials, consumer goods and other industries, supporting research and design, pilot testing and validation, production, operations and management.²⁴

Notes and sources

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