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China's 14th Five-Year Plan
on Digital Economy Development

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In January 2022, China's State Council, the Central People's Government released its "14th Five-Year Plan on Digital Economy Development" (hereinafter referred to as "the Digital Economy Plan" or "the Plan"). This is the first time that China lists digital economy as one of the top priorities for national economic development. It is the supplement and extension of the fifth chapter (Accelerating Digital Development and Building a Digital China) of the "14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035" announced in early 2021.

As defined at the beginning of the Plan, digital economy is a main economic form after agricultural and industrial economy. It is a new economic form that takes data resources as the key element, modern information network as the main carrier, the integration of information and communication technology and the digital transformation of total factors (or factors of production, which include labour, land, capital, as well as information and data, etc.) as important driving forces, to promote fairness and efficiency.

Figure 1: The four major components of digital economy in China

Factors of production	Forces of production	Relations of production
Data valuation	**Digital industrialisation**	**Digital governance**
• Collection and aggregation	• Basic telecom	• Multi-party participation
• Affirmative pricing	• Electronic information manufacturing	• Technology and management
• Marketplace	• Software and services	• Digital public services
• Security protection	• Internet	
	Digitalisation of industry	
	• Marginal contribution of digitalised agriculture	
	• Marginal contribution of digitalised industry	
	• Marginal contribution of digitalised services	

Source: China Academy of Information and Communications Technology (CAICT); PwC China Economic Quarterly Q2 2020

The importance of digital economy in China

Why does China's central government attach great importance to digital economy for the future of economic development?

The rapid development of digital economy has brought significant influences to different aspects at an unprecedented level, stimulating profound changes in the mode of production, lifestyle, and governance. It is increasingly a key driver for restructuring production factor resources, reshaping global economic structure, and changing the patten of competition.

Furthermore, digital economy is a strong driver for the sustainable and healthy development of China's economy and society. More specifically, in 2020, the added value of core industries in the digital economy accounted for 7.8% of China's GDP, according to the Plan (based on data and new classification from the National Bureau of Statistics).

This is much less than the previous understanding of the research from China Academy of Information and Communications Technology (CAICT). The report claims that the scale of China's digital economy reached 39.2 trillion yuan in 2020, accounting for 38.6% of GDP.

Comparatively, according to the report on digital economy released by the US Bureau of Economic Analysis (BEA) in August 2020, the added value of digital economy in the US was US$1,849.3 billion in 2018, accounting for 9.0% of GDP.

■ Redefined definition and measurement of digital economy

CAICT's calculation was based on different standards and statistic calibres, as pointed out by the National Bureau of Statistics. It added to the difficulty of international comparative analysis and confused the public understanding of the development level of digital economy in China. (However, previously, CAICT's research was widely quoted when there is no official data). To better prepare for the execution of the digital economy plan, the National Bureau of Statistics issued the classification of digital economy and its core industries in June 2021, which

serves as the official standard for measuring the development level of China's digital economy.

This standard is based on the methods adopted by the Organisation for Economic Cooperation and Development (OECD) and the United States Bureau of Economic Analysis (BEA). It also follows the common principles the two organisations apply in the classification of digital economy. Thus, it is an internationally comparable and statistical classification of digital economy.

This indicates that the definition and measurement of digital economy in China have been officially redefined and adapted when drafting the Digital Economy Plan. It is expected that the Statistics Bureau would disclose data of the digital economy in 2022 on a regular basis.

The classification of digital economy and its core industries (2021), (hereinafter referred to as "the classification") emphasises that the digital economy is closely linked to three elements:

Figure 2: The three elements of the digital economy

Data resources

Modern information network

Information communication technology

The classification defines the scope of digital economy into five categories:

Figure 3: The scope: the five categories of the digital economy

01 Digital product manufacturing

02 Service of digital product

03 Digital technology application

04 Digital factor driving

05 Digital efficiency improvement

It adopts the line classification method and hierarchical coding method to divide the digital economic activities into three layers. These activities and layers are coded with Arabic numerals. The first layer is the general category, which is represented by two-digit numbers from 01 to 05. There are five general categories in total. The second layer consists of 32 intermediate categories which are represented by four-digit numbers (for example, 0101 is for computer manufacturing). The third layer is sub-category, represented by six-digit numbers (for instance, 010102 stands for computer parts manufacturing and 010401 represents industrial robot manufacturing). A total of 156 sub-categories belong to this layer.

Among the five general categories, the first four (01 to 04) are the core industries of digital economy. It refers to all kinds of economic activities that provide digital technology, products, services, infrastructure, and solutions for the digital development of industry, as well as those that are completely dependent on digital technology and data elements.

The core categories or industries (01 to 04) also represent the digital industrialisation part, which is the basis for the development of digital economy. More specifically, the core of digital economy comprises of the following sub-sectors or industries:

Figure 4: Digital industrialisation: the core of digital economy and industrial digitisation, or digital efficiency improvement

0101 Computer manufacturing

0102 Communication and radar equipment manufacturing

0103 Digital media equipment manufacturing

0104 Intelligent device manufacturing

0105 Electronic components and equipment manufacturing

0106 Other digital product manufacturing

0201 Digital product wholesale

0203 Digital rental products

0204 Digital product maintenance

0205 Other digital products and services

01
Digital product manufacturing

02
Service of digital product

The 05 category represents industrial digitisation, or digital efficiency improvement, which refers to leveraging digital technology and data resources in traditional industries to increase output and efficiency. It is the integration of digital technology and real economy.

05
Digital efficiency improvement sectors

03
Digital technology application

0501 Smart agriculture

0502 Intelligent manufacturing

0503 Intelligent transportation

0504 Smart logistics

0505 Digital finance

0506 Digital commerce

0507 Digital society

0508 Digital government

0509 Other digital efficiency improvement sectors

04
Digital factor-driven sectors

0301 Software development

0302 Telecommunications, radio, television, satellite transmission services

0303 Internet-related services

0304 Information technology services

0305 Other digital technology applications

0401 Internet platform

0402 Internet wholesale and retail

0403 Online finance

0404 Digital content and media

0405 Information infrastructure construction

0406 Data resources and property rights transaction

0407 Other digital factor-driven sectors

Take intelligent manufacturing (0502) as an example, it refers to an advanced production mode that uses digital twins, artificial intelligence, 5g, blockchain, VR/AR, edge computing, experimental verification, simulation technology and other new generation information technologies. It is deeply integrated with advanced manufacturing technology, aimed at improving the quality and core competitiveness of manufacturing industry. It mainly includes four sub-categories, such as digital general and special equipment manufacturing (050201), digital transportation equipment manufacturing (050202), digital electrical and mechanical equipment and instrument manufacturing (050203), and other intelligent manufacturing (050204).

■ Highlights of the Digital Economy Plan

The 14th Five-Year Plan on Digital Economy Development is a 20-page report with over 12,000 Chinese characters. There are ten chapters and the headlines of these chapters are as follows:

1. Development status and current situation

2. General requirements and development objectives

3. **Optimise and upgrade digital infrastructure**

4. **Give full play to data elements**

5. **Promote industrial digital transformation**

6. **Accelerate digital industrialisation**

7. Improve the digital proficiency of public services

8. Advance the digital economy governance system

9. Strengthen the security system for the digital economy

10. Expand international cooperation in digital economy

While all chapters contain important messages, chapter 3 to chapter 6 underscore the essence of the plan. These chapters illustrate that there is great potential in giving full play to data elements (chapter 4), while upgrading digital infrastructure (chapter 3), industrial digital transformation (chapter 5) and digital industrialisation (chapter 6) present significant business and investment opportunities.

In chapter two, the plan sets a number of goals for digital economy development by 2025, such as:

• The added value of the core industries of the digital economy will account for 10% of GDP in 2025, improving from 7.8% in 2020.

• The number of active users of Internet Protocol version 6 (IPv6[*]) shall grow from 460 million in 2020 to 800 million in 2025.

• Gigabyte broadband users shall increase from 6.4 million in 2020 to 60 million in 2025.

• Revenue of software and information technology services shall grow from 8.16 trillion yuan in 2020 to 14 trillion yuan in 2025.

• Application penetration rate of industrial Internet platform shall increase from 14.7% in 2020 to 45% in 2025.

• National online retail sales shall increase from 11.76 trillion yuan in 2020 to 17 trillion yuan in 2025.

• E-commerce transaction scale shall grow from 37.21 trillion yuan in 2020 to 46 trillion yuan in 2025.

• The number of real-name users of online government services shall rise from 400 million in 2020 to 800 million in 2025.

Figure 5: Main indicators of digital economy development in the 14th Five Year Plan

Indicators	2020	2025
Added value of the digital economy's core industries as a share of the GDP (unit: %)	7.8	10
Number of active users of Internet Protocol version 6 (IPv6[*]) (unit: million)	460	800
Number of gigabyte broadband users (unit: million)	6.4	60
Revenue of software and information technology services (unit: trillion yuan)	8.16	14
Application penetration rate of industrial Internet platform (unit: %)	14.7	45
National online retail sales (unit: trillion yuan)	11.76	17
E-commerce transaction scale (unit: trillion yuan)	37.21	46
Number of real-name users of online government services (unit: million)	400	800

* IPv6: The communication protocol that provides an identification and location system for computers on networks and routes traffic across the Internet.

Optimising and upgrading digital infrastructure consists of three major aspects: acceleration of information network infrastructure construction, development of cloud network collaboration and computing network integration, and intelligent upgrading of infrastructure. Accelerating the construction of information network infrastructure, for example, requires building a comprehensive cloud-based infrastructure that is fast, agile, green, safe and controllable. It also requires the expansion of optical fiber network, large-scale deployment of 5g network, and upgrade of spatial information infrastructure.

Giving full play to data elements will focus on three areas: enhance the supply of high-quality data, accelerate the market-oriented circulation of data, and innovate the development and utilisation mechanism of data.

More specifically, strengthening the supply of high-quality data would involve the following tasks: support market entities (companies) to carry out data collection in accordance with the law; focus on data labeling, cleaning, desensitisation, declassification, aggregation, and analysis; improve the processing capacity of data resources; and cultivate and expand the data service industry. In order to promote the circulation of data, it is necessary to create rules for the data market, encourage the development of related businesses, and improve data governance.

Promoting industrial digital transformation would involve many sectors. There are four key observations as follows:

• Accelerating digital transformation and upgrade of enterprises: This involves guiding enterprises in strengthening digital thinking, improving employees' digital skills and data management ability, and promoting digital transformation in R&D and design, production and processing, operation and management, sales service and other businesses.

• Deepening digital transformation in key industries: It requires the promotion of an all-round digital transformation across the whole supply chain in traditional and other industries, and ultimately improves total factor productivity.

• Promoting digital transformation of industrial parks and industrial clusters.

• Cultivating a robust ecosystem for transformation support services: It requires establishing a digital transformation service ecosystem driven by market-oriented services and public services, which are supported by technology, capital, talents, data and other factors. It also calls for the cultivation of several digital solutions to support the transformation in key industries and enterprises.

Accelerating digital industrialisation also covers four major areas such as promoting of key technology innovations (such as sensors, quantum information, network communication, integrated circuits, key software, big data, artificial intelligence, blockchain and new materials), improving the competitiveness of core industries (basic software and hardware, core electronic components, key basic materials and production equipment), cultivating new business forms and patterns, and creating a prosperous industrial innovation ecosystem (with resource sharing and data openness, innovative collaboration, capacity sharing and supply chain interoperation while integrating online and offline businesses).
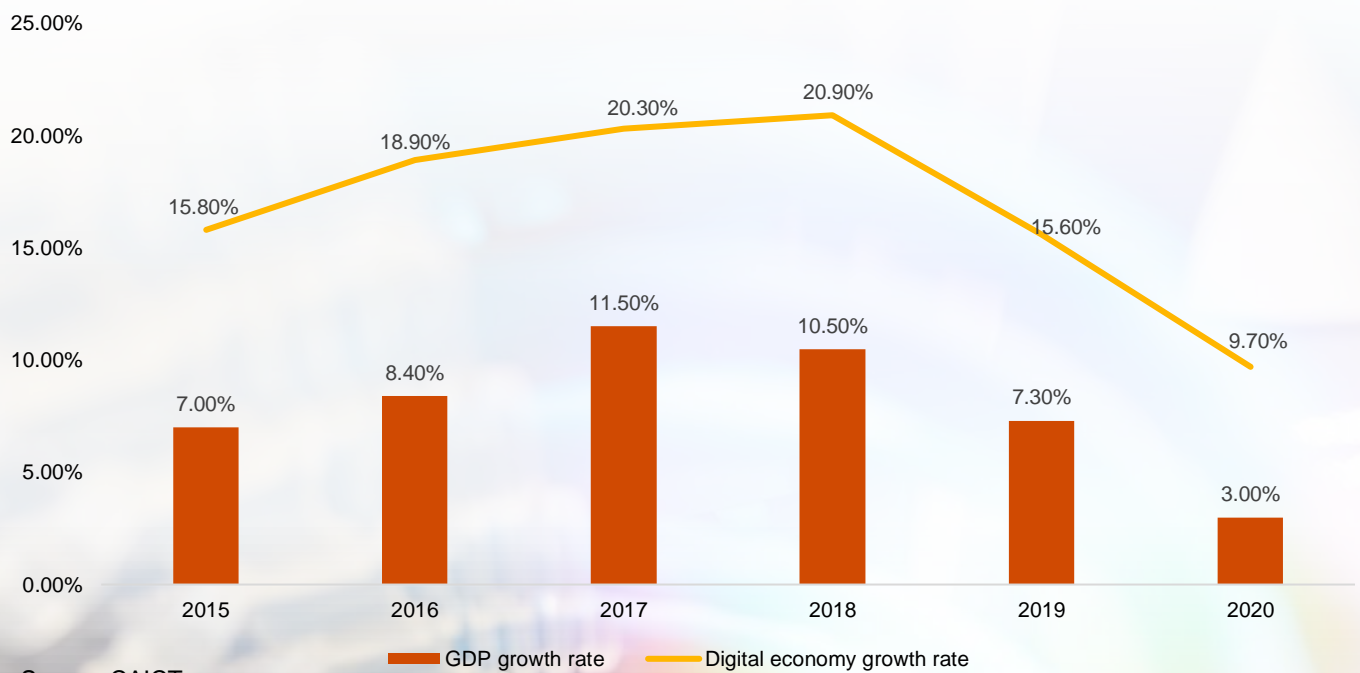
■ Business implications of the Digital Economy Plan

1

First, the economic size of the digital economy is more than nine trillion yuan.

Added value of core industries in the digital economy is expected to account for more than 8% in 2022. This means that the economic size of the main part of the digital economy is at least nine trillion yuan in China. Besides, the growth rate of digital economy is among the fastest compared to most of the traditional industries and would continue to rapidly grow in the next few decades.

From 2015 to 2020, China's digital economy has enjoyed an average growth rate of 15% or more, while the average GDP growth maintained at around 7% during the same period. Thus, the digital economy is bound to influence nearly all segments and industries of the business sector, as well as the public sector.

Figure 6: Growth rate of China's digital economy and GDP

Source: CAICT

Legend: ■ GDP growth rate — Digital economy growth rate

Data points (Digital economy growth rate): 15.80% (2015), 18.90% (2016), 20.30% (2017), 20.90% (2018), 15.60% (2019), 9.70% (2020)

Data points (GDP growth rate): 7.00% (2015), 8.40% (2016), 11.50% (2017), 10.50% (2018), 7.30% (2019), 3.00% (2020)

2 Second, the development of the digital economy will boost the rapid progress of the following technologies.

This will upgrade China's national technological competence, bringing the economy to a higher level and lifting many companies and sectors to the medium and high-end of the value chain.

Cloud computing

Big data

Internet of things (IoT)

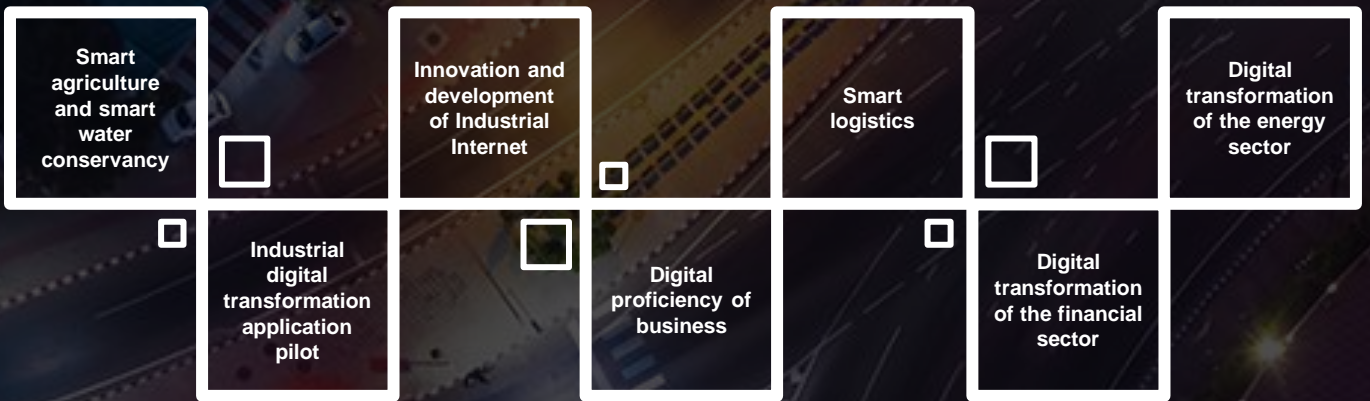**Industrial Internet**

Blockchain

Artificial Intelligence

Virtual reality and augmented reality

- **Cloud computing:** accelerate the iterative upgrading of cloud operating system, promote technological innovation such as large-scale distributed storage, elastic computing and virtual data isolation, and improve cloud security.

- **Big data:** promote technological innovation in big data collection, cleaning, storage, mining, analysis and visualisation algorithms; develop industrial systems along data lifecycle such as data transmission and management applications; and improve the big data standard system.

- **Internet of Things (IoT):** promote technological innovation such as sensors, network slicing and high-precision positioning; jointly develop cloud services and edge computing services; and cultivate the Internet of Vehicles, medical Internet of Things and home appliance Internet of Things.

- **The Industrial Internet:** build an independent and controllable identification analysis system, standard system, and safety management system; strengthen industrial software research and application; cultivate an Industrial Internet platform with international influence; and promote the construction of the Industrial Internet plus intelligent manufacturing industry.

3

Third, industrial digital transformation will embrace digital upgrading projects in the following key industries, according to the Plan.

Industrial digital transformation will create business and investment opportunities for many sectors, including:

Smart agriculture and smart water conservancy	Innovation and development of Industrial Internet	Smart logistics	Digital transformation of the energy sector
Industrial digital transformation application pilot	Digital proficiency of business	Digital transformation of the financial sector	

- Developing smart agriculture and smart water conservancy;
- Carrying out demonstration of industrial digital transformation applications;

- Accelerating the innovation and development of Industrial Internet;
- Improving the digital proficiency of business;
- Vigorously developing smart Logistics;

- Accelerating the digital transformation of the financial sector;
- Accelerating the digital transformation of the energy sector.

More specifically, developing smart logistics would involve many detailed works, such as the digital transformation and upgrading of traditional logistics facilities to promote the integrated development of modern logistics industry to agriculture and manufacturing sectors; building a cross-industry and cross-region logistics information service platform to realise real-time sharing of demand, inventory and logistics information; building an intelligent storage system and improve the automation and intelligence level of logistics storage.

Accelerating digital transformation in the financial sector would require the following efforts, including further apply big data, artificial intelligence, blockchain and other technologies in banking, securities, insurance and other financial fields; developing new models such as intelligent payment, intelligent outlets, intelligent investment advisers and digital financing; and promoting the pilot and development of digital RMB.

Digital transformation in the energy sector promotes the development of the following areas, such as digital upgrading of energy production, transportation, storage and utilisation facilities; implementation of the digital construction and transformation of equipment, facilities and process flows in coal mines, oil and gas fields, oil and gas pipeline networks, power plants, power grids, oil and gas reserves, and terminal energy consumption; pilot demonstration application of smart energy technologies, such as microgrid; construction of digital platforms based on the connections between supply and demand, production services, supervision and management as well as other businesses; and improvement of the intelligence level of energy system.

Finally, there are also enormous business opportunities associated with improving the digital level of public services, advancing governance system of the digital economy, strengthening security system of the digital economy, and expanding international cooperation in the digital economy, such as the development of trade digitisation and the development of the digital silk road. Many other sectors and industries, for example, healthcare, education, culture and tourism, and even community services will be remodelled or reshaped in the era of digital economy.

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