ISSN 2616-5902 Vol. 5, Issue 23: 113-118, DOI: 10.25236/AJBM.2023.052317

# Study on the strategies for promoting the high-quality development of China's digital economy

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***Abstract:*** *Digital economy has brought opportunities and challenges to the global economic development and has become a key force in the global economic development. Nowadays, the digital economy is increasingly driving China's economic development, but there are still some problems in the current development of China's digital economy, such as the lack of close integration with the real economy, weak core technology capabilities, insufficient network information security, shortage of professional talents in the digital economy, and imperfect legal system environment. In order to fully play the leading role of the digital economy in China's economic development, China should promote the deep integration of the digital economy with the real economy, improve the core technology research and development capabilities of the digital economy, build a data network security environment for the digital economy, introduce and cultivate core professional talents in the digital economy, formulate and improve relevant laws and regulations for the digital economy, and promote the high-quality development of the digital economy through multiple means, injecting strong impetus into China's rapid economic growth.*

***Keywords:*** *digital economy; real economy; high-quality development*

## 1. Introduction

With the rapid development of science and technology, digital technology has made amazing progress, followed by the digital economy has become a key force for global economic growth and social progress. The digital economy based on Internet, big data, artificial intelligence and other technologies is merging with traditional industries, which promotes economic growth, industrial upgrading and social progress through innovation. China attaches great importance to the work of digital economy, and clearly points out in the Overall Layout Plan of Digital China Construction that the construction of digital China is an important engine to promote Chinese modernization in the digital age and a powerful support to build a new competitive advantage of the country.

In 2022, China's digital economy maintained a sustained and high-speed growth, and now it is moving towards a higher-quality development direction. This paper summarizes the development status and opportunities of China's digital economy, analyzes the realistic challenges faced by the high-quality development of China's digital economy, and puts forward corresponding strategic suggestions, which has certain practical significance.

## 2. The Present Situation of Digital Economy Development in China

### *2.1 The scale of the digital economy continues to expand*

In 2022, the scale of China's digital economy reached 50.2 trillion yuan, ranking second in the world in total, with a year-on-year increase of 4.68 trillion yuan. It has been significantly higher than the nominal GDP growth rate of the same period for 11 consecutive years, accounting for 41.5% of GDP.

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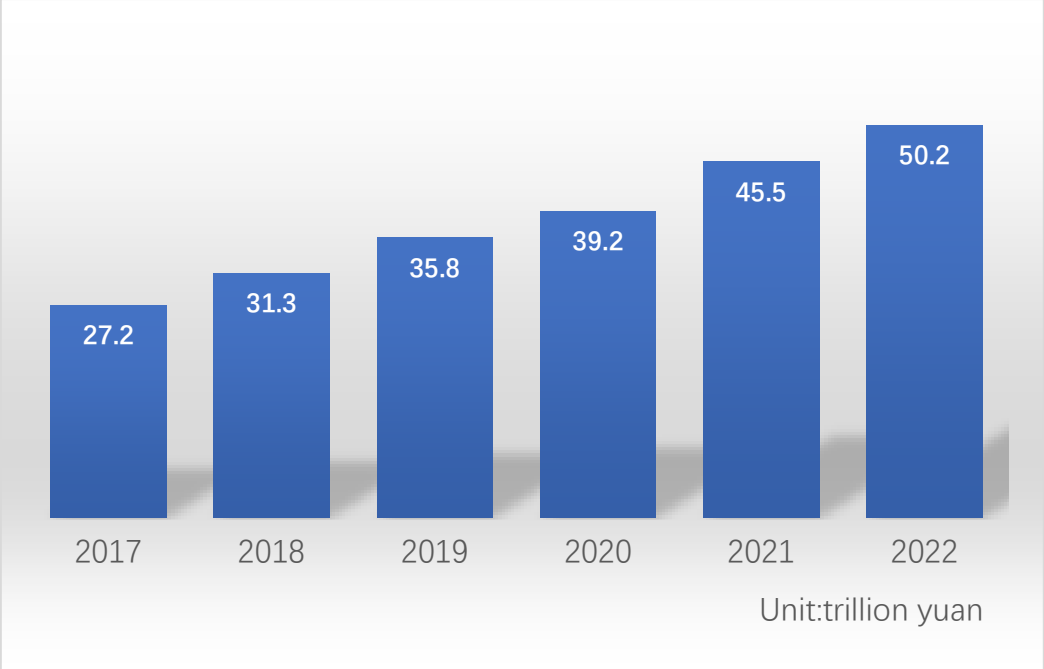


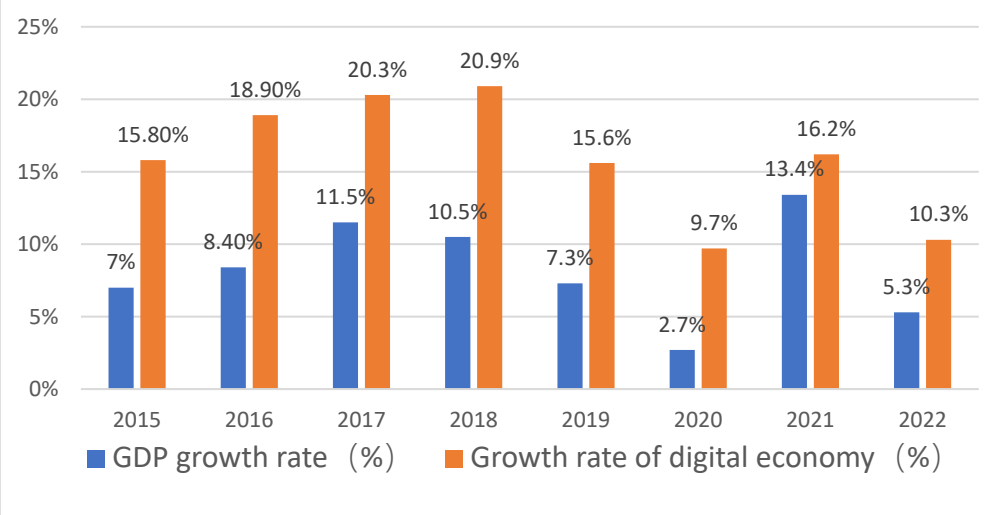

*Data source: Research Report on the Development of China's Digital Economy (2023)*[1]

*Figure 1: Statistical Chart of the Scale of China's Digital Economy from 2017 to 2022*

As shown in Figure 1, from 27.2 trillion yuan in 2017 to 50.2 trillion yuan in 2022, the scale of China's digital economy is constantly expanding, with a good growth trend.

### *2.2 The digital economy grows continuously at a high speed*

In 2022, China's GDP grew by 5.3% year-on-year in nominal terms, while the digital economy grew by 10.3% year-on-year, 4.98 percentage points higher than the nominal GDP growth rate. In recent years, the growth rate of China's digital economy has been significantly higher than that of GDP, indicating that the role of the digital economy in economic development is becoming increasingly crucial.




*Data source: Research Report on the Development of China's Digital Economy (2023)*[1]

*Figure 2: Comparison of the growth rates of China's digital economy and GDP from 2015 to 2022*

As shown in Figure 2, from 2015 to 2022, the growth rate of China's digital economy compared with the nominal growth rate of GDP, the growth rate of the digital economy in the same period was higher than the growth rate of GDP. Except for 2020, when the growth rate of China's digital economy was 9.7%, the growth rate of the digital economy in other years exceeded 10%, and the growth trend was basically the same as that of GDP growth. Only in 2018, the growth rate of GDP slowed down by 1% compared

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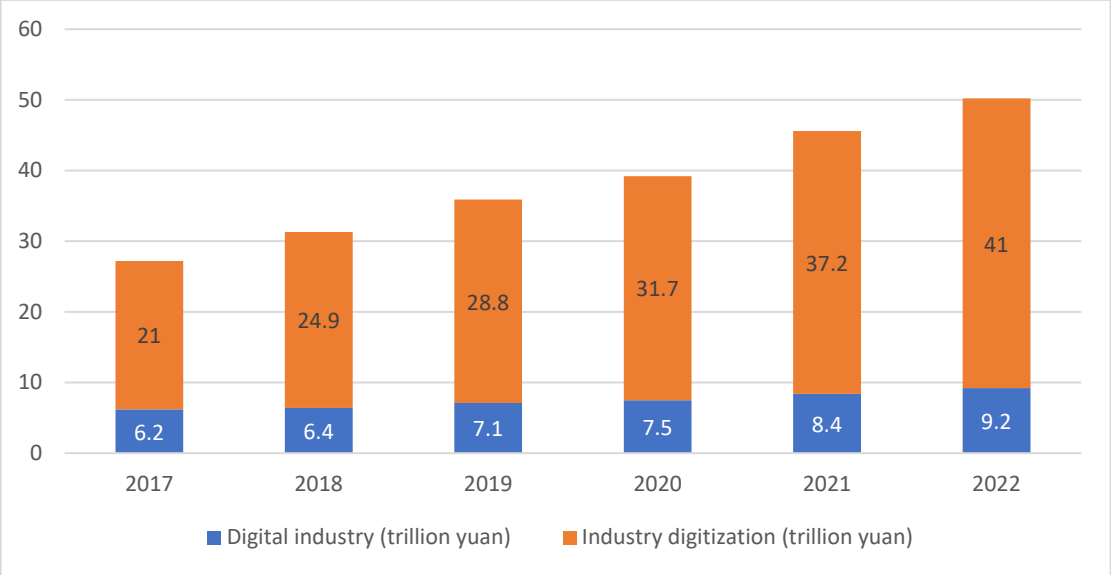
with that of 2017, while the growth rate of the digital economy increased by 0.6% in the same period.

### *2.3 Stable proportion structure of digital economy*

In 2022, digital technologies such as big data and artificial intelligence further integrated with the real economy, and the role of industrial digitalization in China's digital economic growth became more prominent. The scale of China's industrial digitalization was 41 trillion yuan, with a nominal growth of 10.3% year on year, accounting for 33.9% of GDP and 81.7% of the digital economy. At the same time, the scale of digital industries, namely the large-scale and industrialized application of digital technology, has reached 9.2 trillion yuan, with a nominal growth of 10.3% year on year, accounting for 7.6% of GDP and 18.3% of the digital economy. It can be seen that the scale of digital industrialization and industrial digitalization in China's digital economy in 2022 accounted for 8:2.




*Data source: Research Report on the Development of China's Digital Economy (2023)*[1]

*Figure 3: The scale of China's Digital Industrialization and Industrial Digitalization Scale from 2017 to 2022*

As shown in Figure 3, from 2017 to 2022, the scale of industrial digitalization in China's digital industrialization and industrial digitalization has grown rapidly, doubling from 21 trillion yuan in 2017 to 41 trillion yuan in 2022.However, the scale of digital industrialization in the same period has only increased from 6.2 trillion yuan in 2017 to 9.2 trillion yuan in 2022, indicating a slow development of digital industrialization. In addition, from 2017 to 2022, the proportion of digital industrialization scale to industrial digitalization scale in China's digital economy remained basically at 8:2.

By the end of 2022, China had opened 2.312 million 5G base stations, with 561 million 5G users and 1.845 billion mobile Internet of Things (IOT) terminal users.

China has the most complete industrial chain and supply chain in the world, with the longest chain, the most complete upstream and downstream, and the most advanced connection. The transformation of the digital economy has also expanded from traditional industries to finance, logistics, medical care, health, culture, tourism, transportation and other industries.

## 3. Opportunities for high-quality development of China's digital economy

### *3.1 A large consumer group of digital economy*

Consumer demand determines the market size of the digital economy industry. As of June 2023, the number of Chinese netizens reached 1.079 billion, an increase of 11.09 million from December 2022, and the Internet penetration rate has reached 76.4%. Such a large digital economy consumer group and the resulting digital economy user data will promote the rapid development of China's digital economy.

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### *3.2 Rich application scenarios of digital economy*

At present, China's economic development not only maintains a reasonable growth in quantity, but also achieves effective improvement in quality. The transformation and upgrading of industrial ecosystems and economic models in various industries have promoted the high-quality development of the digital economy, injected new vitality into the innovative development of the social economy, and gradually become a new driving force for economic growth.

### *3.3 More complete software and hardware infrastructure*

China's digital infrastructure has achieved leapfrog development. The industrial Internet has been fully integrated into 45 major categories of the national economy. The computing infrastructure has reached the world's leading level. In 2022, the total size of data center racks in use nationwide exceeded 6.5 million standard racks, and the total computing capacity grew at an average annual rate of over 25% in the past five years.

## 4. The realistic challenges faced by the high-quality development of China's digital economy

### *4.1 Not closely integrated with the real economy*

In 2022, the scale of China's industrial digitalization was 41 trillion yuan, accounting for 34.2% of GDP and 81.7% of the digital economy. However, there is still a problem of insufficient integration between the digital economy and the real economy.[2] On the other hand, it is necessary to speed up the digitization of primary and secondary industries and integrate more industrial chains into the digital economy. Especially for agriculture, forestry, animal husbandry and other industries with slow digital development, targeted digital transformation work should be carried out according to the characteristics of the industry.4.2 Weak core digital technology capability

Digital core technology is the foundation of the development of the digital economy and the force to promote the deep integration of the digital economy and the real economy. With the rapid development of the application of big data, artificial intelligence and other technology fields in China, the relevant technical capabilities and levels have been continuously breakthrough and improved. However, there is still a certain gap between China's digital economy and the international advanced level in some key areas of digital technology, such as high-end chips, core components and other key technologies in the digital economy, which are still subject to others. In addition, in the aspect of digital industrialization, the lack of independent research and innovation ability in some areas of core technology restricts the industrialization development of China's digital economy core technology to a large extent.

### *4.2 Network information security is not strong enough*

In the era of digital economy, network information security has become a problem that the whole world must face and deal with. With the explosive growth of data, the role of digitalization in empowering industries is also increasing. Protecting data security while using data correctly and legally has become a regulatory challenge. Various cyber attacks on key industries such as energy and transportation have had a significant impact on social stability and people's lives. However, the work of network information security in new technologies and new scenarios is facing great challenges. At the same time, the clarification of rights and the delineation of boundaries in data mining and data sharing in data information security have also become a major challenge.

### *4.3 Shortage of digital economy professionals*

With the explosive development of the global digital economy, there is an urgent need for a large number of professional talents in the application of digital economy in both the development of digital industries and the transformation of industrial digitalization. China's digital economy started relatively late but has developed rapidly. The speed of training digital economy professionals is far slower than the speed of digital economy development, which has led to a shortage of digital economy professionals. Among Internet innovation companies, especially in the fields of big data and artificial intelligence, there is a lack of professional talents in digital technology innovation.[3] At the same time, there is also a shortage of compound talents who are proficient in digital technology and have certain industry expertise in industries that are integrated with the digital economy.

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### *4.4 The legal system environment is not perfect enough*

With the rapid development of the digital economy, on the one hand, the integration of the digital economy and the real economy has caused the industrial and business boundaries to become increasingly unclear. The existing legal system is difficult to define the ownership of data property rights, which is prone to data infringement disputes, illegal copying of innovative achievements, and other issues. On the other hand, the widespread application of technologies such as big data and artificial intelligence has enabled large digital platforms to obtain massive data in their daily operations, which will not only make large data platforms become data monopolists, but also use their resource advantages to form competitive barriers, thus affecting the effective competition in the market. There may also be issues such as illegal dissemination of data.

## 5. Strategic suggestions for the high-quality development of China's digital economy

### *5.1 Promoting the deep integration of the digital economy and the real economy*

To promote the deep integration of the digital economy and the real economy and accelerate the development of the real economy is a strategic choice for China to seize the new opportunities of the new round of technological revolution and industrial transformation, achieve high-quality economic development and create new competitive advantages. On the one hand, we should strengthen the construction of digital infrastructure. We should increase the construction of new infrastructure such as 5G, Internet of Things, artificial intelligence, etc. Through the construction of digital infrastructure, we should consolidate the foundation for the deep integration of the digital economy and the real economy. On the other hand, we should accelerate the digitalization of the primary and secondary industries and integrate more industrial chains into the digital economy. Especially for the industries such as agriculture, forestry, animal husbandry and other industries with slow digital development, we should carry out targeted digital transformation work according to the characteristics of the industry.

### *5.2 Improve the core technology research and development capability of the digital economy*

Further accelerate the deep integration of the digital economy and the real economy, and occupy a favorable position in the future industrial development and competition in the world. The core technology of the digital economy will become an important weapon. In the current era of rapid development of big data, cloud computing and artificial intelligence, we should seize the opportunity to make full use of global innovation resources to build an independent innovation system. On the one hand, we should increase investment in the research and development of core technologies, key systems and software in the digital field, provide policy support and financial support for Internet companies to develop cutting-edge technologies, encourage and guide enterprises to independently increase investment in big data, cloud computing and artificial intelligence technologies. In addition, we should further promote the formulation of key core technology standards for the digital economy such as 5G, Internet of Things, and artificial intelligence, and grasp the technological autonomy of the digital economy.

### *5.3 Constructing a data network security environment for the digital economy*

As an important economic form today, the digital economy has become an important factor affecting the quality of national economic development. China should actively carry out the construction of a data network security environment, and work with the government, enterprises and other parties to strengthen the system and actively build a data security protection network. On the one hand, we should actively learn from countries and regions with rich experience in information security and Internet management, and learn about the data network security related knowledge of the digital economy. On the one hand, we should do a good job in the security protection measures of data application software and hardware, especially the security encryption protection of relevant data information software and hardware equipment. On the one hand, we should actively carry out the research and development and application of data encryption technology, and promote the wide application of quantum technology, blockchain and other new technologies in data tracking.

### *5.4 Introducing and cultivating core professionals in the digital economy*

The shortage of professionals in the application of digital economy brought about by the rapid

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development of the digital economy is one of the urgent problems to be solved for the high-quality development of China's digital economy. On the one hand, by introducing talents, we can fill the gap in the digital technology innovation professionals in the fields of big data, artificial intelligence and other areas that are urgently needed in Internet innovation enterprises, and ensure the normal needs of the development of the digital economy. On the other hand, we should increase the cultivation of interdisciplinary talents who are proficient in digital technology and have certain industry expertise. In addition, we should accelerate the reform of the talent cultivation mechanism in universities, actively open up disciplines related to data analysis, computational science, etc., increase the scale of training talents in digital technology applications such as big data and artificial intelligence, and do a good job in building relevant talent teams.

### *5.5 Formulating and improving laws and regulations related to the digital economy*

In order to ensure the rapid development of the digital economy and clarify the legitimate rights and interests of all parties, on the one hand, it is necessary to accelerate the legislation of digital security, clarify the ownership of data property rights, set out standardized management standards and requirements for data usage rights, application methods, security mechanisms, etc., and strengthen the protection of important data and personal privacy information.[4] On the other hand, it is necessary to strengthen the supervision of the security and standardization of the use of data on network platforms, clarify the responsibilities that digital platforms and all parties should bear in digital governance. In addition, it is necessary to improve the technical level of data security protection, strengthen the application of cloud platform data security protection technology, ensure the safe circulation and sharing of data, and provide a healthy development environment for the high-quality development of the digital economy.

The 14th Five-Year Plan for Digital Economic Development sets development goals for China's digital economy. "By 2025, the digital economy will enter a comprehensive expansion period, the added value of core industries in the digital economy will account for 10% of GDP, the ability to lead development through digital innovation will be greatly improved, the level of intelligence will be significantly enhanced, the integration of digital technology and the real economy will achieve remarkable results, the digital economic governance system will be more perfect, and the competitiveness and influence of China's digital economy will steadily increase." To achieve this goal, the digital economy should further promote China's economy from quantitative change to qualitative change by deep integration with the real economy, improving core technology research and development capabilities, building a data network security environment, introducing and cultivating core professional talents, and formulating and improving relevant laws and regulations.

## Acknowledgement

**Fund projects:** Social Science Project of Liaoning Province “Research on the statistical measurement and economic effects of fin-tech innovation in Liaoning Province” (L21BJL001)

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