

Research on the Mechanism of the Influence of Digital Economy on the High-Quality Development of Industry

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Abstract: In the context of the new era of rapid development of big data and the continuous popularization of smart terminals, the digital economy has emerged as a new economic form different from the agricultural economy, industrial economy, and culture and tourism economy. With the Internet, big data, artificial intelligence, cloud computing, and other technologies as the core, the digital economy plays an important role in leading the high-quality development of industry. This paper will deeply explore the far-reaching impact of the digital economy on the high-quality development of industries. The paper first introduces the connotation and development status of the digital economy, and then elaborates on the mechanism of the impact of the digital economy on the high-quality development of industries from the reduction of production costs, the generation of new forms of industry, the promotion of the transformation and upgrading of traditional industries, the promotion of the transformation of the labor force, the promotion of innovation, the promotion of the high-quality development from the industry, the promotion of the balanced and coordinated development of the region. The study tries to explore the direction and way of traditional industry change in the context of digital economy development to help the development and transformation of enterprises.

Keywords: Digital economy; Industrial high-quality development; Influence mechanism; Traditional industry change

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1. Introduction

As an emerging economic form, the digital economy has become an important driver of global economic growth. According to the Global Digital Economy White Paper released by the China Academy of Information and Communications Technology in 2023, the global digital economy will reach \$41.4 trillion in 2022, accounting for 46.1% of GDP. Industrial digitization continues to be the main engine of digital economy development, accounting for 85.3% of the proportion of the digital economy, of which the proportion of the digital economy in primary, secondary, and tertiary industries to the value-added of the industry is 9.1%, 24.7%, and 45.7%, respectively. The digital transformation of the tertiary industry is the most active, and the digital transformation

of the secondary industry continues to gain momentum. The development of the digital economy has not only changed the production and operation mode of traditional industries but also had a profound impact on industrial structure, industrial upgrading, and innovation drive. China's government attaches great importance to the development of the digital economy and proposes to accelerate the development of the digital economy and promote the development of industrial high quality^[1]. The purpose of this paper is to analyze the mechanism of the impact of the digital economy on the high-quality development of industries, to provide theoretical support for the formulation of China's digital economy policy, and at the same time, to provide rationalized suggestions for the direction and way of the transformation of traditional industries in the context of the development of the digital economy.

2. Digital economy

2.1. Connotation and characteristics of the digital economy

The digital economy is an emerging economic industry that takes digitized knowledge and information as the key factors of production, takes digital technology as the core driving force, takes modern information networks as the important carrier, and through the deep integration of digital technology and the real economy, continuously improves the level of digitalization, networking, and intelligence of the society, and accelerates the reconstruction of the economic development and governance model.

The digital economy is characterized by the following features. First, it is data-driven, with big data, artificial intelligence, and other technologies at its core. Second, it is highly dependent on information technology, such as the Internet and cloud computing. Third, it is cross-border integration, with the in-depth fusion of digital technology and traditional industries. Fourth, it is inclusive, improving the digital literacy of the entire population, and further promoting social equity.

2.2. Current status of China's digital economy development

According to the report on the development of China's digital economy in 2023 released by the China Academy of Information and Communication Research, China's digital economy has achieved high-quality development, and has further progressed in the direction of becoming stronger, better, and bigger. As shown in **Figure 1**, the scale of China's digital economy reached 50.2 trillion yuan in 2022, with a nominal growth rate of 10.3% year-on-year, which has been significantly higher than the nominal growth rate of GDP for eleven consecutive years, and the share of digital economy in GDP weight reached 41.5%, a net increase of 1.7% over the previous year^[2]. It can be seen that the digital economy has been transformed from a constituent part of economic development to a leading force in economic development, promoting high-quality economic development. The digital economy and the industries are significantly different in terms of production factors while promoting the integration and development of the industries in China. Data becoming a production factor for economic development is a distinctive feature of the data economy that distinguishes it from the agricultural and industrial economies. The value of data production factors for the high-quality development of industries is continuously increasing. The national legislature has introduced laws and regulations to guide the development and improvement of the data industry system, such as the data-related laws and regulations in the civil code, the criminal law, the data security law, and the anti-unfair competition law. In addition, the Chinese government also attaches great importance to data security and other aspects of work and has made forward-looking and targeted strategic planning for it, to promote the high-quality development of the economy and industry.

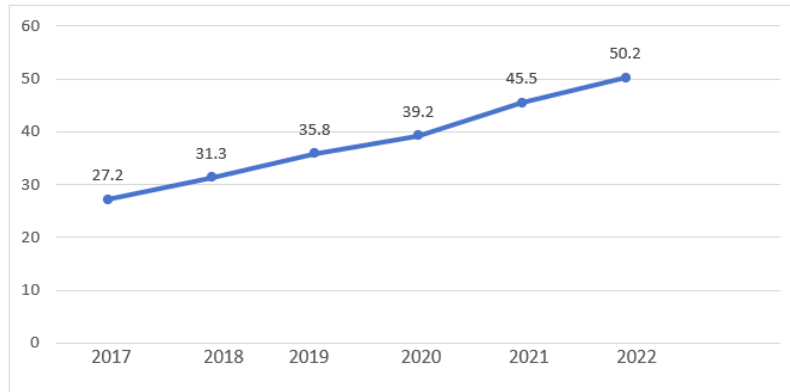


Figure 1. The scale of China's digital economy

3. The mechanism of the impact of the digital economy on the high-quality development of industry

3.1. The digital economy can reduce production costs and promote production development

First of all, the digital economy has made a comprehensive change to the traditional industrial structure. The digital economy reorganizes the chain of traditional industrial production, distribution, exchange, and consumption, promotes the formation of new industrial chains, and improves the efficiency of economic activities through digitalization. Take online shopping as an example, the traditional business model, production, distribution, exchange, and consumption needs to be carried out step by step. Online shopping, on the other hand, because of the emergence of the third party, the consumption stage is divided into two. For consumers, under the bookkeeping method of cash basis, the consumption stage is before the circulation stage, forming the process of production, consumption, and exchange. For producers, the production and circulation platform eliminates the cumbersome exchange and distribution process between production and consumption. This platformize the traditional circulation process, which shortens the cycle of economic activities and improves the efficiency of economic activities, and at the same time, it can also provide the possibility of creating more wealth. The labor cost is saved due to the reduction of labor positions, and the surplus labor can create more wealth for society, which not only reduces the production cost but also promotes the development of social production. The rise of online shopping platforms allows consumers to conveniently buy the goods they want to buy and promotes the integration of the traditional retail industry online and offline.

3.2. Digital economy gives rise to new industries and new business models

The development of the digital economy has given rise to new industries. In the Internet era, the sharing economy, online shopping, online education, intelligent manufacturing, and other industries have developed rapidly, and the integration of the digital economy has given added support to industries such as education, traditional manufacturing, and retailing. The rise and development of the sharing economy have changed the corresponding traditional economic development, the precise combination of social resources and consumer demand, providing consumers with more choices while significantly improving the efficiency of resource utilization. For example, the sharing of bicycles, charging stations, and other new industries based on the sharing economy; online shopping makes shopping more convenient and fast, and the emergence of major platforms allows consumers to increase their choices. Under the premise of healthy competition in the market, online shopping promotes further upgrading

of consumption and promotes the progressive development of the social economy. The development of intelligent logistics provides accurate and efficient goods delivery services, accelerating the speed and efficiency of the circulation of goods. The connection between the various newborn industries is not unrelated to each other, in which both or many aspects echo each other's influence and complement each other. For example, online shopping and intelligent logistics, both have formed an inseparable relationship in the development of the economy and society. The organic combination of the traditional automobile manufacturing industry and the digital economy, relying on advanced data technology, allows the safety, comfort, and maneuverability to continue to improve, and the quality and level of consumption constantly cater to market demand.

3.3. Digital economy promotes the transformation and upgrading of traditional industries

The deep integration of the digital economy and traditional industries has injected new vitality into the good and lasting economic development of traditional industries.

The digital economy promotes the comprehensive transformation of traditional industry production. First of all, in the face of China's economic situation of increasing economic level and decreasing labor force, China's labor price advantage is gradually lost, the role of labor-intensive industries in economic development is gradually decreasing, the traditional labor-intensive industries in the case of maintaining the status quo ante will be faced with greater losses, so to reduce the amount of labor and labor costs has become the primary goal of the labor-intensive industries to continue to go on^[3]. The digital economy just meets the conditions of labor-intensive industries for labor, allowing higher production efficiency, lower labor costs, production process management, and product quality improvement.

In addition, traditional industries have broken the talent restriction to a certain extent to adapt to the new trend of economic development. In the process of industrial digitization, the industry's demand for high-tech talent is increasing, so there is a large gap in talent demand. Repetitive work has been replaced by artificial intelligence, giving rise to new demands in the labor market. To meet these demands and ensure sustained and sound economic development, all sectors of society have made efforts to provide opportunities for training and skills upgrading for the transition of the workforce.

3.4. The digital economy promotes scientific and technological innovation and high-quality industrial development

The digital economy has promoted scientific and technological innovation and become an important driving force for the high-quality development of industries. Digital technology has provided enterprises with a large amount of valuable data, reduced R&D costs, and improved innovation efficiency. At the same time, the digital economy has given rise to new R&D institutions, crowdsource spaces, and other innovation carriers, accelerating the integration and sharing of innovation resources^[4].

The technological innovation attributes of the digital economy make it an important driver of China's long-term economic growth. The digital economy has permeated all aspects of economic activities, with new business forms, new models, new markets, and other new economic elements, but ultimately it is the embodiment of new technologies. This includes the innovation of new technologies such as 5G, big data, cloud computing, and so on, as well as the provision of application scenarios for new technologies in finance, logistics, and other industries. The application of new scenarios provides support for covering the cost of technological research and development, accumulating experimental data, and so on, so it can indirectly promote technological innovation and the high-quality development of industries. Therefore, from the perspective of China's long-term economic development, it is necessary to continue to expand and strengthen the digital economy, especially to play the role

of technological innovation.

4. The direction and path of digital transformation of traditional industries

Long-term stable development of enterprises needs to have forward-looking thinking. According to the law of economic and social survival of the fittest, traditional industries are bound to face the path of reform and upgrading if they want to survive. On the way to reform, how to make every move requires more in-depth thinking and planning.

4.1. Designate a digitalization strategy and build a digital infrastructure

On the road to digital transformation, it is first necessary to develop a clear digital strategy. This includes determining the goals, priorities, and methods of transformation. Since digital transformation cannot be achieved overnight, it is also necessary to consider the time, cost, and resource investment of digital transformation ^[5]. In addition, the development of digital strategy requires specific analysis of specific issues, all aspects, multi-dimensional analysis of market dynamics, industry trends, as well as competitors' level of development and development speed, to ensure that the development of digital strategy maximizes the benefits.

“To get rich, first build roads.” This speaks volumes about the importance of roads for wealth. Similarly, digital infrastructure makes the foundation for the digital transformation of traditional industries, which is of great significance to the transformation and upgrading of traditional industries and the high-quality development of industries ^[6-7]. The construction of efficient and stable digital infrastructure can improve the ability of data analysis and processing, promote information flow and sharing, and provide strong support for digital transformation.

4.2. Innovate digital business models and actively cultivate digital talents

Innovation is the first driving force for development. The rise and development of online shopping and sharing economy show that digital transformation is not only a change in technology and industry but also an innovation of business models. Enterprises should actively explore new business models, such as personalization, platform, socialization, and so on, which can not only meet the diversified on-site demand but also increase corporate profits. Through business model innovation, the enhancement of enterprise value and the construction of competitive advantage can be realized. The development of digital transformation requires certain talent support. Hence, enterprises should pay attention to the training and introduction of digital talents, establish a perfect talent incentive system, and improve the digital literacy and ability of employees ^[8]. At the same time, the organic combination of industry, academia, and research should be promoted so that all sectors of society work together to cultivate digital talents that meet the needs of enterprises.

4.3. Promote the accelerated development of industrial digitization, cross-border cooperation, and innovation

Industrial digitalization is the top priority of the digital transformation of the traditional economy, including all aspects of production, exchange, and consumption. Through borrowing, improvement, and other ways to introduce digital technology, optimize the production process, improve production efficiency, and achieve industrial upgrading. Through various effective means to improve product quality, dominate in the market share, and enhance market competitiveness.

The emergence and development of online education and smart cars shows that traditional enterprises should actively seek cross-border integration with other industries in the process of digital transformation, and realize breakthroughs and innovation through cooperation. In addition, enterprises also need to actively pay

attention to the development and trends of the emerging economy to provide a constant flow of power for digital transformation.

4.4. Build a data-driven decision-making system and strengthen guidance and support

Data is a key element of digital transformation and an important basis for making reasonable decisions. Enterprises should establish a data-driven decision-making system and use data analysis tools to monitor and analyze business data in real-time to provide a scientific basis for decision-making. Through the data-driven decision-making system, decision-making efficiency and accurate characterization can be improved to promote the sustainable development of enterprises. The government should introduce relevant policies and legislative departments to designate complete laws and regulations to provide strong support and a favorable development environment for the digital transformation of traditional industries ^[9]. This includes but is not limited to financial subsidies, tax breaks loan policies, and so on, to reduce the cost and risk of enterprise digital transformation.

5. Conclusion

The digital economy can give rise to new business forms, change the development model of traditional industries, and contribute to the high-quality development of the economy. The digital economy can reduce costs, promote production development and innovation, and inject new blood into the development of industries. It can also provide more employment opportunities, promote the upgrading of China's industrial structure, and at the same time, be beneficial to the upgrading of technical skills of the labor force in traditional industries. It can also improve the unbalanced and insufficient development of China's economy, provide a certain social foundation for the realization of high-quality industrial development, and strengthen the confidence and determination of the Chinese nation to achieve the second hundred-year goal. China's digital economy is gaining momentum and has great potential for development. All sectors of society should take active actions to seize this historic opportunity to promote the digital transformation and upgrading of traditional industries and help China's economic development.

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References

- [1] China Internet Network Information Center, 2023, Annual Global Digital Economy Report 2023. <http://www.caict.ac.cn/kxyj/qwfb/bps/202401/P020240326601000238100.pdf>
- [2] Ren YY, Wang WY, Wang N, 2021, The Impact of Digital Economy on the High-Quality Development of Economy. *Contemporary Finance and Economics*, 2021(10): 1–13.
- [3] Cheng XH, Jiang GG, 2024, Digital Economy, Regional Innovation and Economic High-Quality Development: An Analysis Based on Spatial Durbin Model. *Research on Technical Economy and Management*, 2024(04): 45–50.

- [4] Li J, Wang W, 2024, Research on the Spillover Effect of Digital Economy Empowering Regional High-Quality Development. *Management Modernization*, 44(02): 10–19.
- [5] Tang R, Li MY, 2024, Study on the Effect of Digital Economy Driving High-quality Development of Tourism in Yangtze River Delta. *Tourism Science*, 38(03): 24–43.
- [6] Nie YY, Yao QY, Liu YF, 2024, Digital Economy and High-Quality Development of the Yangtze River Delta Region: Spatio-Temporal Effect and Mechanism Test. *Soft Science*, 38(02): 65–73.
- [7] Li XH, 2024, Industrial Structure Convergence, Digital Technology Innovation, and Economic High-Quality Growth. *Research on Technology Economy and Management*, 2024(02): 144–152.
- [8] China Internet Network Information Center, 2023, China Digital Economy Development Report 2023. https://www.cac.gov.cn/2024-03/25/c_1713038218396702.htm
- [9] Liang Y, 2017, Analysis of the Reasons and Countermeasures for the Rising Labor Costs in China: A Study from the Perspective of Labor Supply and Demand. *Journal of Shandong Radio and Television University*, 2017(02): 73–76.

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