

Digital economy has become a new engine for regional development

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Abstract—In the context of the global epidemic and slowing economic growth, the digital economy, a new economic form based on the Internet and corresponding emerging technologies, has shown a vigorous development and has become a new engine for regional development. On the basis of combing the connotation and essence of digital economy, this article discusses the relationship between digital economy and regional development and the internal mechanism of digital economy to promote regional development.

Keywords—digital economy; regional development; digitalization; technological innovation

I. INTRODUCTION

The concept of digital economy can be traced back to the 1990s. The American scholar Don Tapscott formally proposed the concept of digital economy in his book "Digital Economy". With the rapid development of Internet technology, the digital economy has been endowed with rich connotations.

The "White Paper on China's Digital Economy Development"^[1] holds that the digital economy is an emerging economic form with digital knowledge and information as the key production factors, digital technology as the core driving force, and modern information network as an important carrier. Through the deep integration of digital technology and the real economy, the digital economy continuously improves the level of digitization, networking, and intelligence, and accelerates the reconstruction of economic development and governance models. It can be seen from this that the digital economy is a relatively broad concept. Any economic form that directly or indirectly uses data to guide resources and promote the development of productivity can be included in its category. At the technical level, the digital economy includes emerging technologies such as 5G, big data, artificial intelligence, the Internet of Things, cloud computing, and blockchain^[2].

The essence of the digital economy is informatization^[3]. Informatization is a social economic process in which the industrial economy turns to the information economy caused by the revolution of production tools such as computers and the Internet. Specifically, informatization includes the industrialization of information technology, the informatization of traditional industries, the informatization of infrastructure, and the informatization of lifestyles^[4]. The core of digital economy is to change the original social production mode and business model by digitizing and informatization of all business elements, improve the operation efficiency of enterprise business

activities, and make digital productivity form a harmonious relationship with traditional production relations as far as possible, so as to improve the comprehensive value of economic activities to human society as a whole.

II. THE RELATIONSHIP BETWEEN DIGITAL ECONOMY AND REGIONAL DEVELOPMENT

Regional development refers to a series of economic and social activities centered on resource development, industrial organization, and structural optimization within a certain time and space^[5]. Regional development can be divided into three stages: primary stage, growth stage, and transformation stage. Regional development is embodied in economic, political, social, cultural and other aspects, and economic, political and social development is undoubtedly the main aspect. In the same way, digital economy, digital government, and digital society are the three main lines, three engines, and three major achievements of the digital age. The three promote and complement each other to form a flywheel of regional development and jointly promote regional development.

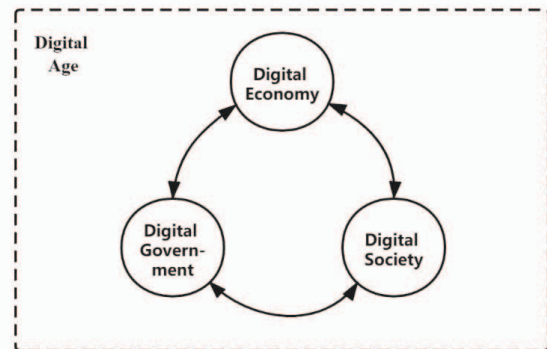


Figure 1. The three main lines of the digital age

The vigorous development of the digital economy has brought about a huge leap in productivity, has become the cornerstone of promoting regional digital development, and has provided material and technical conditions for digital government and digital society^[6]. Digital government has improved the production relations of regional development and provided institutional guarantees for the development of digital economy and digital society; the construction of digital government will surely release more policies and reform dividends, and provide strong impetus for regional development in terms of systems and policies. The digital economy and digital government serve the digital society. The construction of the digital

society directly reflects the level of regional development. The development of the digital society will also significantly drive the development of the digital economy and force the construction of the digital government.

III. THE MECHANISM OF DIGITAL ECONOMY PROMOTING REGIONAL DEVELOPMENT

The development of the digital economy itself can promote regional development. The fast-growing digital economy promotes the continuous optimization of traditional economic models, accelerates the reshaping of global business models, and drives the intensive integration, collaborative development, efficient utilization, and network sharing of capital, labor, technology and other production factors^[7-8]. The penetration of the digital economy into traditional industries can further promote economic development. In the digital economy, the production costs of enterprises have strong high fixed costs and low marginal costs. The traditional production costs of enterprises include high fixed costs and relatively high marginal costs. Marginal costs gradually decrease at the beginning, but after reaching a certain scale, diseconomies of scale begin to appear, and marginal costs begin to rise. But for the digital economy, its marginal cost gradually decreases to zero as the scale expands.

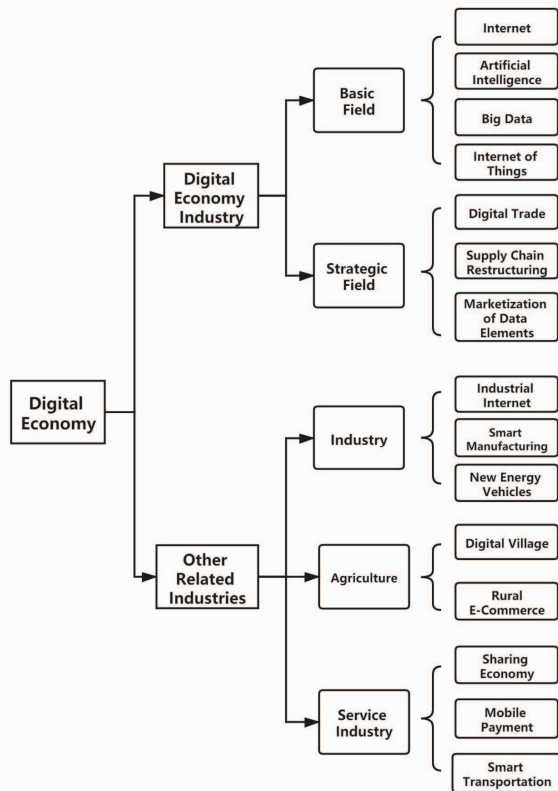


Figure 2. The basic framework for digital economy to promote regional development

On the basis of the continuous innovation of smart technology and smart devices, the industrial Internet is developing rapidly with the Internet of Things, cloud computing and big data as technical means. This can not only significantly improve the efficiency of resource utilization, but also promote the high integration of all

links in the manufacturing industry chain, form a new data realization model, and promote the transformation and upgrading of the industrial structure. At the same time, the essence of the development of the digital economy is to increase the flow of information and knowledge elements in the entire economic system. In this way, it promotes the refinement of the regional spatial division of labor and the improvement of the efficiency of inter-regional transactions, optimizes the structure of the division of labor between regions, and realizes the transformation and upgrading of the inter-regional economic structure. In addition, the development of the digital economy can significantly increase the efficiency and depth of transactions between enterprises and customers, continuously improve the supply and demand structure of the market, and promote the transformation of the economic structure.

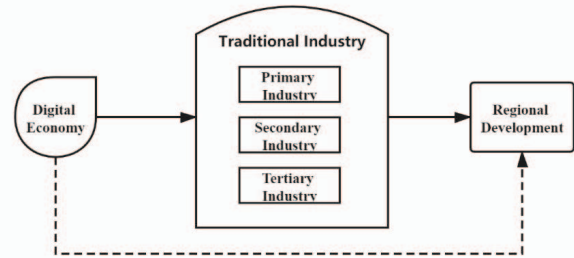


Figure 3. Digital economy, traditional industries and regional development

The development of the digital economy can also promote the integration of digital basic industries and other industries^[9]. Basic industry of the digital economy itself is a key component of the national economy. The development of the basic industry of the digital economy has driven the improvement of the industrial structure. Boundaries between the three traditional industries have gradually disappeared, and the development of industries has shown a trend of cross-convergence^[10], from the traditional labor-intensive, capital-intensive, and technology-intensive to digital-intensive transformation, which promotes the transformation and upgrading of traditional industries and significantly improves production efficiency. This will eventually lead to the development of the region.

IV. CONCLUSIONS AND RECOMMENDATIONS

In the new round of global industrial and technological revolution, the integration of the digital economy, represented by the Internet, artificial intelligence, blockchain, cloud computing, and big data, with many social and economic fields has become an irresistible trend of the times. This article analyzes the relationship between the digital economy and regional development and the internal mechanism that promotes regional development. And this article points out that the development of digital economy itself can promote regional development and that the digital economy can also promote regional development by driving the integration of digital basic industries and other industries.

In order to play the role of the engine of the digital economy, it can be implemented from two aspects. One is to vigorously develop industries related to the digital

economy. The government must increase support for the digital economy and give full play to its due guidance and support functions; enterprises must increase R&D and investment in the digital economy, and increase the output of innovation results. The second is to actively promote the digital transformation of traditional industries. Digital technology can be used to upgrade traditional industries, and a number of high-level digital transformation demonstration projects can be built in the region to deepen the digital application of manufacturing, operation management, and market services.

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