

Exploring the Development Path of Enhancing Economic Resilience through Digital Economy

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ABSTRACT

China is currently in a critical moment of economic growth shifting, structural adjustment pains, and the digestion period of previous stimulus policies. How to achieve "steady progress" in urban economy is the key to urban development in the transitional period. The development of the digital economy can break geographical limitations, narrow the urban-rural gap, and improve the overall resilience of the economy. This article explores the positive impact of the digital economy on economic resilience and proposes corresponding development paths, such as strengthening talent introduction and training, attaching importance to digital infrastructure construction, etc., providing strong support for coping with complex economic environments.

KEYWORDS

digital economy; development; toughness

Enhancing urban economic resilience is not only an inherent requirement for achieving high-quality urban development, but in recent years, digital technologies such as big data, the Internet of Things, and artificial intelligence have flourished and become increasingly integrated into various fields of the economy and society. The digital economy has become a key force in restructuring resource allocation and driving economic growth. To enhance economic resilience, we should accelerate the construction of digital infrastructure, encourage enterprises and research institutions to increase their research and development investment in key core technologies of the digital economy, deepen new educational concepts, integrate digital technology applications throughout the entire process of the education system, and build a high-level team of engineering and technical talents in the digital field.

1 The positive impact of the digital economy on economic resilience

In the context of the digital economy era, it has provided a good environment and conditions for innovation and stimulated the innovation vitality of enterprises. Internet, big data and other technologies have made information spread more rapidly and widely, promoted the exchange and sharing of knowledge and technology, and reduced the cost and risk of innovation. At the same time, the application of digital technologies such as virtual laboratories and digital design platforms has accelerated the research and development and promotion of new products and technologies, promoted industrial upgrading and optimization of economic structure. Enterprises can realize automation and intelligence of production processes, optimize production processes, reduce production costs, and improve production efficiency. The digital economy has broken the limitations of time and space, and the development of digital services such as e-commerce platforms and online finance has improved the efficiency of resource circulation, reduced transaction costs, promoted the concentration of production factors to advantageous enterprises and regions, and improved the utilization efficiency of resources. Big data can also help businesses and governments more accurately understand market demand and resource conditions, making more rational decisions and optimizing resource allocation. The digital economy has given birth to many new job opportunities, providing new ways to alleviate employment pressure and enabling more people to participate in entrepreneurship. Economic activities are more flexible and diverse, and businesses and consumers can adapt to market changes faster.

2 Exploring the Path of Enhancing Economic Resilience through Digital Economy Development

(1) Strengthen the construction of digital infrastructure

In the current era, relevant departments should speed up the wide coverage of 5G networks in cities, rural areas and remote areas, improve the speed and stability of the network, provide high-speed data transmission support for industrial Internet, intelligent transportation, remote medicine and other applications, promote the digital transformation and innovative development of various industries, promote the construction and popularization of gigabit optical broadband networks, improve the performance and capacity of fixed broadband networks, meet the high bandwidth requirements

of high-definition video calls, cloud games, virtual reality and other businesses, accelerate the large-scale deployment and application of IPv6, solve the problem of shortage of IP address resources, enhance the security and mobility of the network, explore the communication technology and application of low altitude aircraft such as UAV s, build low altitude intelligent networks, and realize the intelligence of the low altitude field management and services, Expand the application scenarios of digital economy. In building computing infrastructure, it is necessary to plan and construct large and super large data centers based on the resource advantages and development needs of different regions, improve data storage and processing capabilities, provide strong computing power support for cloud computing, big data analysis, artificial intelligence, etc., establish a unified computing power scheduling platform, integrate dispersed computing power resources, achieve efficient allocation and sharing of computing power, and fully utilize the energy advantages of the western region to meet the computing power needs of the eastern region. By building data center clusters, cloud bases, and other methods, the economic development of the western region can be driven. Relevant departments should actively build AI computing centers, super computing centers, etc., build AI public service platforms, create industrial Internet platforms with industry characteristics, connect various production equipment and information systems within enterprises and upstream and downstream enterprises in the industrial chain, achieve data interconnection and sharing, and also accelerate the research and development and construction of satellite Internet, achieve broadband Internet access worldwide, make up for the lack of ground network coverage, promote the construction of intelligent transportation, install sensors, monitoring equipment and other Internet of Things equipment in transportation facilities such as roads, railways, airports, and achieve real-time monitoring and intelligent scheduling of traffic flow [2]. The government should introduce policies to encourage digital upgrading and subsidies for enterprises, promote the purchase of smart office equipment from the perspective of tax reduction, promote the construction of smart factories, optimize administrative approval processes, reduce operating costs for enterprises, strengthen intellectual property protection, create a fair competition market environment, and further promote the vigorous development of the digital economy industry.

(2) Cultivate and introduce digital talents

In the process of enhancing economic resilience in the digital economy, attention should be paid to talent introduction and cultivation. Universities should add, adjust, and upgrade relevant majors in the digital field, such as big data, artificial intelligence, block chain, quantum computing, etc., based on the trend of digital economy development and social needs, forming a multi-level and multi type digital talent training system. At the same time, emphasis should be placed on interdisciplinary professional settings to cultivate composite talents who possess both digital technology and knowledge in other fields; Vocational colleges set up intelligent manufacturing, industrial Internet, digital security and other digital economy related majors, deepen the integration of industry and education, school enterprise cooperation, promote the talent training mode of combining work and learning, and deliver a large number of high-quality skilled talents for industrial digital transformation. The government and enterprises should jointly invest resources to carry out digital skills training for in-service personnel. Design personalized training courses tailored to the needs of different industries and positions, build a lifelong learning platform that integrates online and offline learning, provide rich and diverse digital educational resources, and encourage people to continue learning and updating their knowledge. A close cooperation mechanism should be established between universities and enterprises to jointly carry out scientific research projects, technological research and development, and talent cultivation. Universities can adjust their teaching content and research directions according to the actual needs of enterprises, while enterprises provide internship bases, practical projects, and financial support to universities, promote the transformation of scientific research achievements, and encourage research institutions and enterprises to form innovation alliances to jointly tackle key technological challenges in the field of digital economy, accelerate the transformation and application of scientific and technological achievements. In terms of talent introduction, preferential policies such as visa convenience, research start-up funds, and housing security can be provided for overseas high-level digital talents to attract them to return to China for innovation and entrepreneurship or participate in domestic digital economy construction. At the same time, an international talent exchange platform can be actively built to break regional restrictions, promote talent flow and sharing between regions, and achieve complementary advantages and jointly improve the overall level of regional digital talents through establishing talent cooperation alliances and carrying out talent joint training projects.

(3) Industrial digital transformation

Enterprises should introduce advanced industrial robots, automatic conveying equipment and intelligent storage systems to realize the automation and intellectualization of the production process. By installing sensors on the production equipment, the equipment operation data can be transmitted to the industrial Internet platform in real time. These big data can be used for real-time monitoring, fault warning and maintenance optimization of the equipment operation status. Computer aided design and computer aided engineering software can be used to carry out the digital modeling and performance simulation of products. By establishing an accurate digital model of the aircraft, the flight conditions, aerodynamic performance, etc. can be simulated in a virtual environment to predict the product performance

in advance, reduce the number of physical prototype production and testing, shorten the product development cycle, and build an online design collaboration platform, Integrate design resources from different departments within the enterprise and external supply chain partners. Enterprises should also utilize technologies such as global positioning systems, geographic information systems, and remote sensing to achieve precise monitoring and management of farmland. In animal husbandry, intelligent breeding equipment such as smart collars, automatic feeding and drinking systems, environmental monitoring sensors, etc. should be used to build an e-commerce platform for agricultural products and expand sales channels. Farmers and agricultural cooperatives can directly open stores on the platform to display and sell characteristic agricultural products. Block chain technology should be used to establish a traceability system for agricultural products. Consumers can scan the product QR code to obtain information on the entire process of agricultural products from planting, processing, transportation to sales. Enterprises should promote mobile payment methods, allowing users to conduct financial activities such as transfers, payments, and wealth management purchases anytime and anywhere through their mobile phones. Financial institutions should use big data and artificial intelligence technology to develop intelligent investment advisory systems, analyze customers' risk tolerance, investment goals, asset status, and other factors, and provide personalized investment plans for customers.

(4) Data Security Protection and Supervision

In the process of data storage and transmission, enterprises should use symmetric encryption algorithms to quickly encrypt large amounts of data, while for critical information such as key exchange scenarios, asymmetric encryption algorithms such as RSA algorithm should be used, and homomorphic encryption technology should be researched and applied to enable specific calculations to be performed even in encrypted state. Enterprises should adopt a multi factor identity authentication mechanism, such as combining passwords, biometric features, and other methods to verify user identities. Users should be assigned corresponding data access permissions based on their roles in the organization, and remote data centers should be established to back up data in real-time to data centers in different geographical locations. Small and medium-sized enterprises and start-up companies can utilize backup services provided by cloud service providers, industry associations, and standardization organizations to develop data security standards. Enterprises can refer to these standards to establish and improve their own data security management system, including standards for data classification and grading, access control, encryption, etc., and establish a data security compliance assessment mechanism to evaluate and certify their data security management. For example, companies can apply for ISO 27001 certification to demonstrate their compliance with international standards in information security management. Through compliance assessment and certification, they can identify their own shortcomings in data security management and make timely improvements. At the same time, it can also enhance the understanding of partners and customers towards the company

3 Conclusion

In summary, the rapid development of the digital economy is driving profound changes in the way cities produce, live, and govern. Its unique advantages and potential provide new impetus and paths for enhancing economic resilience. Relevant departments should establish and improve a market-oriented mechanism for technological innovation, comprehensively strengthen the construction of innovation infrastructure, accelerate the coordinated development of digital industries, tap into internal resources of the digital industry, improve the standard formulation and functional design of industrial and supply chain data centers, create an efficient and shared data network system, promote the integration of industry data and reality, and thus promote high-quality economic development.

About the Author

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