



Strategic Situation Analysis of Regional Science and Technology Innovation Center Construction

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Abstract. The construction of regional science and technology innovation center is of great strategic significance to promote the high-quality development of regional economy, enhance the overall national science and technology innovation ability, strengthen the dominant position of international science and technology competition and cooperation, and help the sustainable development of society. Guided by the national innovation strategy, this paper analyzes the new situation facing the construction of regional science and technology innovation centers in China, and summarizes its great significance. It provides an important reference for promoting the development of scientific and technological innovation and industrial agglomeration through the construction of regional scientific and technological innovation centers in the new period.

Keywords: Situation Analysis, Science and Technology Innovation, Challenge.

1 Introduction

Under the background of digital, networked and intelligent development and the accelerated flow of global innovation resources, as a spatial phenomenon of global innovation system and pattern remodeling, science and technology innovation center is the key node of global science and technology innovation network, science and technology activity center and innovation economic highland. Planning and building a global science and technology innovation center has become an important measure for countries to cope with industrial competition and scientific and technological revolution [1]. In recent years, China has also put forward the strategic goal of building international science and technology innovation centers in Beijing, Shanghai and Guangdong-Hong Kong -Macao Greater Bay Area. The national regional science and technology innovation center is an important carrier for the whole country on the basis of the three international science and technology innovation centers, which is helpful to form a multi-level science and technology innovation center system facing the whole country, form a complementary development and chain innovation pattern with the international science and technology innovation centers, improve the national innovation ability as a whole, promote the innovation and development in inland areas, and then realize regional coordination, and has an important supporting role in building a

new development pattern of double circulation. Promoting the construction of regional science and technology innovation centers is an important measure to serve the national innovation-driven development strategy and improve the strategic deployment of the national innovation system. Accelerating the construction of regional scientific and technological innovation centers plays a key role in promoting the position of China's important economic zones in the strategic layout of national innovation, improving the overall competitiveness and influence of urban scientific and technological innovation, and building a more innovative and dynamic city ^[2].

2 New Situation and New Characteristics of National Scientific and Technological Innovation and Development

2.1 The Intensified Global Competition in Science and Technology

With the advancement of the globalization of science and technology, the competition among countries in key core technologies is becoming more and more fierce. From chip technology to artificial intelligence algorithms, from biomedical research and development to high-end equipment manufacturing, countries are devoting all their resources to try to seize the commanding heights of science and technology. For example, the R&D competition between China and the United States in semiconductor chip technology involves huge capital investment, competition for top talents and the game of international market share, which makes the strategic significance of scientific and technological innovation promoted to an unprecedented height at the national level. The rise of emerging science and technology powers, such as South Korea's remarkable achievements in 5G communication technology and display panel technology, challenges the dominant position of traditional science and technology powers. This global multipolar pattern of scientific and technological competition has prompted countries to constantly adjust their scientific and technological innovation strategies and increase their exploration of cutting-edge technologies and subversive technologies ^[3].

2.2 The Acceleration of Technology Integration

The trend of cross-integration between different technical fields is increasingly obvious. The integration of information technology and manufacturing technology gave birth to intelligent manufacturing. The production process was optimized through big data analysis, Internet of Things connection and artificial intelligence algorithm to improve production efficiency and product quality. For example, automobile manufacturing enterprises use industrial internet platform to realize equipment interconnection, real-time data collection and analysis in automobile production process, so as to carry out intelligent production scheduling, quality prediction and fault diagnosis, which has fundamentally changed the traditional manufacturing industry. The integration of biotechnology and material technology has brought new breakthroughs in biomedical engineering, such as the application of new biodegradable materials in

tissue engineering scaffolds and drug sustained-release carriers, which has promoted the development of personalized medicine and regenerative medicine. This trend of accelerating technology integration requires the subject of scientific and technological innovation to have interdisciplinary knowledge and research ability, and also urges innovative cities to build a more diversified and harmonious innovation ecosystem.

2.3 The Transformation of Innovation Paradigm

From the traditional linear innovation mode to the network innovation mode. In the past, scientific and technological innovation often followed the linear path of basic research, applied research, product development and market promotion. Nowadays, the interaction and cooperation between universities, scientific research institutions, enterprises, governments, users and other multi-subjects in the innovation network has become the mainstream. For example, in the open source software community, developers from all over the world participate in software code writing, testing and improvement, which accelerates the speed and quality improvement of software innovation and changes the business model and competition pattern of the software industry. Data-driven innovation is increasingly important. With the advent of the era of big data, massive data has become an important source of innovation. Through the mining and analysis of consumer data, enterprises can accurately grasp the market demand and develop products and services that better meet the individual needs of users. For example, e-commerce platforms recommend products based on data such as users' browsing history and purchasing behavior, which improves users' purchase conversion rate and platform operation efficiency, which also promotes innovative cities to strengthen data infrastructure construction and data governance capabilities.

3 Key Measure to Build a Leading National Innovative City

3.1 Strengthen the Concentration and Integration of Innovative Resources

Increase the introduction and training of high-end talents. Formulate attractive talent policies, such as providing high start-up funds for scientific research, housing subsidies, preferential treatment for children's education, etc., to attract top scientists, innovative entrepreneurs and highly skilled talents from all over the world. At the same time, strengthen the construction of local universities and vocational education institutions, cooperate with enterprises to carry out customized talent training projects, build a multi-level talent training system, and provide sufficient intellectual support for scientific and technological innovation. Gather high-end scientific research facilities and innovation platforms. Actively strive for the establishment of major national scientific and technological infrastructure, such as the construction of scientific apparatus and State Key Laboratories, to provide advanced conditions for basic scientific research and cutting-edge technology research and development. Integrate the innovative resources of universities, scientific research institutions and enterprises in the region, build platforms such as industrial technology innovation alliance and collabo-

rative innovation center, promote the deep integration of Industry-University-Research's use, and improve the utilization efficiency of innovative resources [4].

3.2 Cultivate Innovative Industrial Clusters

Focus on strategic emerging industries and formulate industrial development plans and support policies. Give preferential policies such as land, tax and financial subsidies to the new generation of information technology, new energy, new materials, biomedicine and other industries, and cultivate a number of innovative enterprises with international competitiveness. For example, providing subsidies for car purchase and charging pile construction for new energy automobile enterprises will promote the rapid development of the new energy automobile industry and form a complete industrial chain cluster from battery R&D and manufacturing, vehicle production to charging facility operation. Promote the digital transformation of traditional industries. Encourage traditional manufacturing enterprises to apply new technologies such as industrial internet, big data and artificial intelligence to carry out intelligent transformation, and improve production efficiency and added value of products. Establish a digital transformation service platform for traditional industries, provide technical consultation, solution development, talent training and other services, and help traditional industries upgrade to innovative industries.

3.3 Optimize and Innovate the Ecological Environment

Improve the intellectual property protection system. Strengthen the publicity and enforcement of intellectual property laws and regulations, establish a rapid intellectual property rights protection mechanism, increase the cost of infringement, protect the legitimate rights and interests of innovative subjects, and stimulate innovation enthusiasm. For example, an intellectual property arbitration institution should be set up to deal with intellectual property disputes quickly and create a good legal environment for innovative enterprises. Constructing technology and finance's service system. Encourage financial institutions to carry out innovative business in technology and finance, such as setting up science and technology sub-branches, developing intellectual property pledge loans, issuing science and technology enterprise bonds, etc., and broaden the financing channels for science and technology enterprises. Establish government guidance funds, guide social capital to invest in the field of scientific and technological innovation, provide diversified financial support for innovative enterprises, and solve the problems of financing difficulties and expensive financing for innovative enterprises.

4 Play the Strategic Role of Being a Pioneer in National Science, Technology and Industrial Innovation

4.1 Break Through the Bottleneck of Key Core Technologies

Leading national innovative cities, with their strong innovation resources and scientific research strength, undertake key tasks in major national science and technology projects, focus on "stuck-neck" technical problems such as chips, operating systems and core components of high-end equipment manufacturing, and organize interdisciplinary and interdisciplinary scientific research teams to carry out joint research. For example, in the frontier technical fields such as artificial intelligence, blockchain and quantum communication, enterprises and scientific research institutions in innovative cities actively carry out pilot applications, and develop innovative applications such as intelligent medical diagnosis system based on artificial intelligence, supply chain financial platform based on blockchain, and secure communication network based on quantum communication, accumulating experience for the large-scale popularization and application of these emerging technologies and leading the development direction of emerging technology industries in the country.

4.2 Promote Regional Collaborative Innovation and Development

Establish scientific and technological innovation cooperation alliances with neighboring cities and regions, and promote the innovation ability of other cities in the region through industrial transfer, technology diffusion and talent exchange. For example, Shanghai in the Yangtze River Delta region, as a leading national innovative city, has transferred some labor-intensive industrial links to neighboring cities, while exporting advanced production technology and management experience, which has promoted the industrial upgrading and innovation development of neighboring cities such as Suzhou and Wuxi, and formed a good pattern of regional collaborative innovation. Establish a regional innovation resource sharing platform, share scientific research facilities, scientific and technological documents, experts and other resources, reduce the cost of innovation in the region and improve the efficiency of innovation. For example, Guangzhou, Shenzhen and other cities in the Pearl River Delta region jointly build a network platform for sharing scientific and technological resources, through which enterprises and scientific research institutions in the region can make an appointment to use large-scale scientific research instruments and equipment in other cities to share scientific and technological data resources, thus promoting the free flow and optimal allocation of innovative elements in the region^[5].

4.3 Enhance the International Influence of National Science and Technology

Encourage enterprises and scientific research institutions in innovative cities to actively participate in international scientific and technological cooperation projects, and carry out joint research and development and technical exchanges with the world's top scientific research institutions and enterprises. For example, Huawei in

Shenzhen has set up a number of R&D centers around the world, and cooperated with scientific research institutions in Europe, North America and other places to carry out research in the fields of 5G communication technology and artificial intelligence algorithms, pushing China's scientific and technological innovation achievements to the international stage and enhancing the country's voice and influence in the global scientific and technological field. Hold high-level international scientific and technological exhibitions and academic conferences to attract the attention of global scientific and technological talents and enterprises. Under the new situation of scientific and technological innovation and development, by focusing on building a leading national innovative city, comprehensively integrating innovative resources, cultivating innovative industries, and optimizing the innovation environment, China will effectively promote high-level scientific and technological self-reliance, and continue to play a leading role in the global wave of scientific and technological and industrial innovation, laying a solid foundation for the sustainable development of the national economy and society and the enhancement of international competitiveness.

5 Conclusion

Under the new situation of scientific and technological innovation and development, it is of great significance to take the construction of a leading national innovative city as the core for realizing high-level scientific and technological self-reliance and being a pioneer in the field of national scientific and technological and industrial innovation. In the new era, it is imperative to promote the development of scientific and technological innovation and industrial agglomeration through the construction of regional scientific and technological innovation centers.

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