Research on the Countermeasures of Transformation and Upgrading of Xi'an High-tech Zone based on the Perspective of Innovation Ecosystem

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Abstract: The formation of regional technological innovation system is the most essential feature of the development of high-tech parks. Based on the analysis of the basic characteristics of the technological innovation system in Xi'an High-tech Zone, this paper points out that its core problem is the low industrialization ability. The fundamental reason is the intrinsic characteristics of the intrinsic characteristics of the innovation factor; and according to the growth pole theory and the stage development theory, Xi'an High-tech Zone has two key paths to optimize the technological innovation system in the stage of "creating a world-class park": to activate technological innovation elements through new investment and financing models, and to enhance industrial competitiveness through the development of advantageous industrial clusters; finally, to summarize the optimization of technological innovation systems. The key to catching hands.

1. Introduction

In February 2017, the State Council Office issued a number of "Opinions on Promoting Reform and Innovation and Development of Development Zones". The Opinions firmly establish new development concepts of innovation, coordination, green, openness and sharing, strengthen overall planning for various development zones, accelerate the transformation and upgrading of development zones, promote the innovation of institutional mechanisms in development zones, and improve the management system and policy system of development zones. To further enhance the functional advantages of the development zone. As part of China's development zone system, the high-tech zone is characterized by high concentration, high growth and high innovation. It is an important carrier for China's regional economic development, implementation of innovation-driven strategy and industrial transformation and upgrading. At present, in the context of transformation and upgrading, we must deal with the opportunities and challenges faced by high-tech zones, and then use this as an opportunity to explore its transformation and upgrading path to achieve scientific and sustainable development of high-tech zones.

2. Status and basic characteristics of Xi'an High-tech Zone Technology Innovation System

Since the establishment of Xi'an High-tech Zone in 1991, especially since the launch of the second entrepreneurial strategy in 2003, the technological innovation system has been continuously improved. Generally speaking, a technological innovation system based on enterprises as the mainstay, market-oriented, and combining production, education and research has been basically established. The following three aspects are embodied: First, from the perspective of the constituent elements, the basic elements and structure of technological innovations such as the incubation system, investment and financing system, intermediary service system, industrial supporting system, environmental system and cultural system of Xi'an High-tech Zone have been formed. . Second, from the perspective of capability: Xi'an High-tech Zone's independent innovation capability, incubation capacity, investment and financing capacity, and industrial radiation capacity are all at the forefront of 53 national high-tech zones. Third, from the perspective of performance, the technological innovation system of Xi'an High-tech Zone has achieved certain results in realizing the commercialization, industrialization, internationalization and efficiency of high-tech achievements in the region. However, the inherent defects and shortcomings of technological

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innovation in Xi'an High-tech Zone cannot be ignored. Xi'an High-tech Zone is a national high-tech zone in which China's inland areas rely on local science and technology resources to drive the development of high-tech industries with independent intellectual property rights through innovation and entrepreneurship. The model is based on the close integration of local characteristics in the inland areas of western China, the exploration of local science and technology resources, the promotion of innovation through entrepreneurship, the promotion of innovation, the combination of industrial development and environmental construction, and the development model of industrial development to drive the construction of new technology cities: Inland independent innovation leading high-tech zone. The model of Xi'an High-tech Zone determines the basic characteristics of its technological innovation system: technology entrepreneurial active and inland type.

3. Problems in the technological innovation system of Xi'an High-tech Zone

Rich scientific and technological resources provide a rich source of technological innovation for Xi'an High-tech Zone, but this innovative and entrepreneurial force that grows from the traditional system also has inherent defects: on the one hand, these enterprises are in terms of capital, technology, human resources, etc. Both are inextricably linked with the mother, and the rigid administrative system of universities and research institutes severely restricts the active transformation and diffusion mechanism of scientific and technological innovations, as well as the growth of enterprises; on the other hand, these entrepreneurs From the traditional system, its ideas, concepts, temperament, and behavior all have their own flaws, and it is difficult for entrepreneurs to completely realize the transition to entrepreneurs and entrepreneurs.

The theory of innovation system believes that the full flow and interaction of innovation elements can generate the constant motivation and source of technological innovation, and promote the continuous improvement and upgrading of the technological innovation system, which will lead to the continuous explosion of vitality and vitality in the high-tech zone. As an inland high-tech zone, there are inherent shortcomings in this respect. At present, the marketization and internationalization level of Xi'an is still relatively low, which restricts the full flow and allocation of innovation elements. Compared with the world-class parks, the marketization of Xi'an High-tech Zone is not high in two aspects: First, the market freedom is low. The cultivation of the market system is a systematic project. At present, the market structure of the high-tech zone is basically perfect, but the construction of its operating environment and supporting measures needs to be developed in depth. Second, the market is open. The characteristics of the inland type restrict the improvement of market openness in innate conditions. The relatively low market openness restricts the growth of enterprises from two aspects: first, enterprises cannot allocate resources globally, affecting the cultivation and development of their industrial competitiveness; secondly, enterprises cannot fully utilize the global market, and their market survival and development space is affected. Limitations.

First-class high-tech zones should have the ability to optimize the configuration of innovative elements. Through the integration and optimization of innovative resources, the innovation elements are activated, the innovation elements fully collide and aggregate, and generate high levels of performance. The high level of performance further enhances the platform's resource integration and configuration capabilities. At present, the West High-tech Zone has not yet fully entered the track of a virtuous circle of innovative elements. There are obvious irrationalities in the structure of innovative elements: rich in scientific and technological resources, but high-end scientific and technological resources are scarce; R&D talents are abundant, but senior management talents are scarce; basic implementation and construction level is relatively high, but social networks and social capital for cooperation and exchange are not developed enough; Traditional capital is abundant, but the new capital model is scarce; the number of enterprises is growing rapidly, but the division of labor system is not deep enough; the research and development of enterprises is active, but the construction of technical conditions platform is relatively lagging behind.

4. High-tech zone transformation and upgrading strategy

First, the transition from investment expansion to innovation drive. In the process of development, the high-tech zone should focus on innovation-driven development and explore the transformation path with the aim of industrial upgrading. On the one hand, we should gradually abandon the development model relying on traditional large-scale investment and land transfer, shift the focus to support for innovation activities, increase the concentration of innovation elements in high-tech zones, and support the establishment of engineering laboratories and technology centers in high-tech enterprises in the region. Encourage scientific research institutions, universities and high-tech enterprises in the region to carry out cooperation in production, education and research, improve the relevant entrepreneurship subsidy policies for small and medium-sized high-tech enterprises, improve the introduction and assessment mechanism of innovative scientific and technological talents, further encourage high-level talents to start businesses, and break with the thinking of continuous innovation. On the other hand, high-tech zones should shift their focus from focusing on scale and speed to focusing on quality and efficiency, establishing an efficient, streamlined and unified management mechanism to meet the needs of market-oriented reforms, and streamlining the management of high-tech zones. Level, reduce relevant approvals and simplify procedures, improve development quality, and enhance innovation efficiency by encouraging the construction of public technology platforms and enacting laws and regulations for the protection of intellectual property rights.

Second, the transition from homogenization to differentiation. The development experience of high-tech zones at home and abroad shows that the degree of specialization of high-tech zones is an important indicator to measure their competitiveness. To break the phenomenon of industrial structure convergence in high-tech zones, it is necessary to combine the regional endowment advantages of high-tech zones with the characteristics of local economic development. The country's macroeconomic development situation will be differentiated and developed to form a distinctive competitive advantage and avoid the convergence of industrial structure. While implementing differentiated positioning, strive to explore the competition elimination mechanism of the national high-tech zone, dilute the regional GDP growth assessment mechanism of the high-tech zone, and incorporate innovation capability and efficiency into relevant assessment indicators for different types of high-tech zones. Differentiate treatment.

Third, enhance the industrial cluster effect in the high-tech zone. The cluster effect advantage of the industry is mainly the result of long-term optimization of relevant resources under market allocation, but the timely regulation and control of the government also has a certain promotion effect. On the one hand, the high-tech zone should focus on supporting high-tech industries with great development potential, attach importance to investment in the industrial chain, and carry out public goods that are conducive to the development of industrial clusters on the basis of introducing high-tech enterprises with strong correlation effects and strong actions. Investing, strengthening the construction of related supporting facilities, and encouraging upstream and downstream enterprises in the high-tech industrial chain to enter the high-tech zone; on the other hand, while cultivating high-tech industrial clusters, we must also attach importance to the construction of relevant intermediary service systems in the park, and further standardize Consulting agencies, introducing market research institutions, intellectual property centers, accounting firms, law firms, asset appraisal institutions and related technical advisory bodies to promote the construction of high-tech enterprise technology incubator platforms, and build financial institutions such as venture capital and equity investment and high-tech The platform for technology enterprises to link up to create an education and training service system to provide guarantee for the development of high-tech industrial clusters.

Strengthen the construction of industrial chain and industrial supporting capacity, and upgrade the original industrial system. The development experience of world-class science and technology parks shows that by establishing a complete upstream and downstream supporting system, it can effectively reduce production costs, improve response speed and innovation ability, and thus gain the overall competitive advantage of the industry. Xi'an High-tech Zone should further plan the

construction of specialized parks, organize and integrate existing resources, and rely on leading enterprises in the industry to focus on promoting six major industrial parks such as communications, integrated circuits, power electronics, automobiles, biomedicine and software. Construction, improve the professionalization and division of labor of the park. Through the proactive investment promotion of the industrial chain, the enterprises lacking in the industrial chain of the professional park will be locked in, and they will be attracted to settle in Xi'an High-tech Zone to further improve the existing industrial chain. Cultivate emerging formats and explore new forms of industrial division of labor. In today's world, the division of labor in the value chain of high-tech industries is constantly being refined, and the separated links are constantly gathering to form new industrial systems. At the same time, between high-tech and high-tech, high-tech and traditional technology, the integration of high-tech manufacturing and service industry has formed a series of emerging industries and emerging industries. Xi'an High-tech Zone should vigorously cultivate and develop the following three new formats: the development of emerging service industries, such as the Internet industry and 3G industry, which are fostered by the integration of Internet technology and communication technologies; and the development of industries separated from the high-tech industry chain, such as R&D and outsourcing. , service outsourcing, talent and labor outsourcing, design, testing, consulting, technology trading, etc.; promote the integration and penetration of high-tech and traditional industries, and develop service industries such as e-commerce, online banking, distance education and telemedicine.

5. Conclusion

As part of China's development zone system, the high-tech zone is characterized by high concentration, high growth and high innovation. It is an important carrier for China's regional economic development, implementation of innovation-driven strategy and industrial transformation and upgrading. At present, in the context of transformation and upgrading, we must deal with the opportunities and challenges faced by high-tech zones, and then use this as an opportunity to explore its transformation and upgrading path to achieve scientific and sustainable development of high-tech zones.

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