Transactions on Computational and Scientific Methods | Vol. 1, No. 2, 2021
ISSN: 2998-8780
https://pspress.org/index.php/tcsm
Pinnacle Science Press

Strategic Development of High-Tech Industries: A SWOT Analysis and Proposed Countermeasures

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Abstract: The advancement of the high-tech industry is a critical approach for transforming traditional industries, optimizing industrial structures, enhancing product value, bolstering competitiveness, and refining the division of labor. Currently, Jiaozuo City's high-tech industry has seen swift growth. However, it still grapples with challenges such as a short industrial chain, weak technological innovation capabilities among enterprises, and insufficient momentum for sustainable development. This paper conducts a SWOT analysis of Jiaozuo City's high-tech industry development, examining its strengths, weaknesses, opportunities, and threats, and proposes corresponding strategies.

Keywords: Jiaozuo City; High and new technology industry; SWOT analysis.

1. Introduction

High-tech industry refers to the collection of industries that are specialized in r&d, design, production and manufacturing of high-tech products based on the high-tech and cutting-edge technology of the industry. New and high technology industry is the leading industry of economic development and the strategic commanding height that all countries in the world compete for. The rapid development of new and high technology industry is related to the adjustment of China's industrial structure, the improvement of the country's comprehensive competitiveness and whether the country can realize the leapfrog development of economy [1]. Jiaozuo is relatively backward economic development in our province, to achieve economic catch-up, only rely on the traditional industry development is not enough, must depend on the development of high-tech industries, fundamentally promote upgrading of the industrial structure, increase the added value of products and the promotion of the competitiveness of the enterprises, etc., to change the disadvantaged situation of the enterprises in the industrial chain. In recent years, with the attention and help of the government, hainan's high-tech industry has developed rapidly, but there are still problems such as weak foundation, short industrial chain and insufficient innovation ability of relevant enterprises. Based on this, this paper takes jiaozuo high-tech industry as the research object, analyzes its development advantages, disadvantages, threats and opportunities, and discusses the countermeasures andSuggestions to promote the development of high-tech industry in hainan.

2. SWOT Analysis of High-Tech Industry Development in Jiaozuo City

2.1. Advantages

2.1.1. Natural Conditions

Jiaozuo city, located in the northwest of henan province, with taihang in the north, Yellow River in the south, xinxiang in the east and luoyang in the west, has been an important material distribution

area of henan province since ancient times. Biyang, mengzhou, wenxian, wugu, xiuwu and boai are under its jurisdiction. Five districts including jiefang, shanyang, zhongzhan, ma cun and high-tech development are set up in the city. The total area is 4071 square kilometers, and the urban area is 80 square kilometers, with a total population of 3.75 million. There are four railway lines of jiaozhi, jiaotai, jiaoxin and yuehou in jiaozuo city, as well as two larger freight marshalling stations of yueshan and qiuwang. The transportation is very convenient. Jiaozuo convenient highway, there are new Jiao Ji highway ,Zheng Jiao jin highway, Ji Luo highway, JiaoWen habitat and the highway wear, local highway and national trunk highways connected to each other, and have achieved "county county expressway", "cultural station through secondary", highway density is much higher than the province and the national average. In addition, the opening of jiaozuo intercity railway shorted the distance between jiaozuo and zhengzhou to half an hour, which made the transportation of jiaozuo more convenient[2].

Jiaozuo has a unique natural resources, it is very rich in mineral resources, mineral resources has more than 40, proven reserves of coal, limestone, refractory clay, pyrite and so on more than 20, with 2.26 billion tons of coal resources and reserves of 1.19 billion tons of limestone, refractory clay reserves of 39.571 million tons, pyrite mine reserves of 44.656 million tons. Second, jiaozuo water resources is very rich also, in many rivers, the basin area over 100 square kilometers of the river article 23, the south-north water diversion project from the central to wear, the jurisdiction with wing reservoir, white wall, sky river reservoir, such as large reservoir, reservoir by the year 2016, a total of nine hydropower station within their respective jurisdictions, 26 reservoirs. Because jiaozuo city is very rich in natural resources, it has laid a certain economic foundation for the development of high-tech industry in jiaozuo city.

2.1.2. Regional Policy Advantages

As one of the first resource-exhausted cities certified by the State Council, the exhaustion of coal resources in jiaozuo city has seriously hindered the development of urban economy. Under such circumstances, transformation is an inevitable choice. As one of the main ways to solve the problem of resource exhaustion, the government of jiaozuo has given great support to the development of high-tech industry. In 2011, jiaozuo city certified the first 28 municipal high- tech enterprises and gradually began to develop high-tech industry. In June 2017, jiaozuo municipal people's government promulgated the implementation opinions of jiaozuo municipal people's government office on accelerating the development of jiaozuo national high-tech industrial development zone. In August of the same year, the people's government of jiaozuo promulgated the notice of the people's government of jiaozuo on printing and distributing the action plan for accelerating the cultivation of high-tech enterprises (2017-2020)[3]. With the strong support of jiaozuo municipal people's government, the development of high-tech industry in jiaozuo shows a good momentum. By the end of 2018, jiaozuo had 5 state-level enterprise technology centers, 69 provincial-level enterprise technology centers, and more than 100 high-tech enterprises.

2.1.3. Advantages of Science and Education Resources

In 2004, jiaozuo was recognized as one of the first national demonstration cities for technological innovation projects. There are 5 universities, 17 academician workstations and several research institutes in jiaozuo. Among them, henan polytechnic university and jiaozuo teachers college have a history of more than 100 years. In August 2017, henan university of science and technology park officially opened, mainly depends on scientific research and talent advantage of henan university of science and technology and the integration of urban and rural demonstration area of policy and service advantages, adhere to the "government-led, colleges and universities support, enterprise main body, market operation," the basic train of thought, make the talent highland of jiaozuo, highlands, highland and heights of science and technology innovation. Relying on abundant science and education resources, jiaozuo city has continuously strengthened its cooperation with universities in industry, education and research. Among them, the maker space of henan university of technology has become a demonstration base for entrepreneurship in henan province. The advantages of science and education resources provide strong scientific research support for the development of high-tech industries in jiaozuo city.

2.2. Disadvantages

2.2.1. Insufficient R&D Funding

In recent years, the high-tech industry in jiaozuo has developed to a certain extent. By 2018, jiaozuo has 212 scientific research institutions and 16,335 scientific research personnel. Due to the characteristics of high investment and high return of high-tech industry, the investment of R&D fund is closely related to the development of high-tech industry. In 2018, the R&D expenditure of jiaozuo was 3.894 billion yuan, ranking the fifth in henan province. The intensityof R&D expenditure was 1.7%, far lower than that of henan province.

In terms of the intensity of R&D expenditure in jiaozuo in 2018, the high-tech industry in jiaozuo is still in the early stage, and the government should further increase the R&D expenditure to promote the rapid development of high-tech industry. At the same time, due to the characteristics of high risk and long payback period of high-tech industry, the investment of scientific research funds cannot be returned in a short time. Therefore, most small and medium-sized enterprises just starting are faced with financing difficulties, which greatly restricts the development of high-tech industry[4]. The lack of R&D funds makes some high- tech projects with good prospects unable to realize industrialization.

2.2.2. Lack of Enterprise Innovation Ability

Scientific and technological innovation is the key to the development of high-tech industry and the key driving force for regional sustainable development. In 2017, jiaozuo city issued the interim measures on the management of incentive funds for scientific and technological innovation, interim measures on the management of major scientific and technological projects, and other policies to promote high-tech enterprises to improve their scientific and technological innovation capabilities. However, compared with other regions, jiaozuo city is a typical coal resource-based city. Its thinking mode and management mode have been solidified, and enterprises lack innovation consciousness. In addition, jiaozuo's high-tech industry is still in its early stage, and most of the enterprises are small and medium-sized enterprises with obvious deficiencies in their independent innovation ability. Most of the products are technology introduction, mainly based on imitation. Therefore, the lack of innovative high-tech products has become the main problem restricting the development of high-tech industry in jiaozuo.

2.2.3. Imperfect Policy System

Government policy system is an important support for the development of high and new technology industry and an important factor to promote the rapid development of high and new technology industry. Since the 1970s, the use of policy means to promote the development of high-tech industry has become the mainstream. In order to promote the development of high-tech enterprises, jiaozuo city has issued a number of policies, but these policies are not perfect, the lack of a complete system. On the one hand, the talent introduction mechanism is not perfect, scientific and technological innovation needs to rely on talents to realize, so a perfect talent introduction mechanism is essential. High-tech industry is a knowledge-intensive industry, which needs a large number of scientific research talents to complete the research and development of technology and products. Only with talents can enterprises have a continuous power to promote the continuous development of the industry. On the other hand, it is the financing problem of enterprises. The research and development of high-tech products is usually accompanied by various uncertainties. Enterprises lack guarantee ability and external guarantee mechanism. Most enterprises are faced with a small scale of financing, capital can not meet the needs of scientific and technological innovation, which seriously affectsthe development of high-tech enterprises.

2.3. Opportunities

2.3.1. Opportunities Brought by National Policies

Jiaozuo city is in a period of overlapping national policies. The torch plan, the rising strategy of central China, the national high-tech industrial development zone and other national policies have all provided good policy support for the development of high-tech industry in jiaozuo city. In 1988,

the Chinese government approved the implementation of the torch program, which is a guiding plan for the development of China's high-tech industry. It is the deployment and arrangement for promoting the commercialization of research results of high-tech and new technologies, and promoting the formation and development of high-tech and new technology industries. In 2004, premier li's strategy of the rise of the central region was to promote the joint rise of six provinces and cities in the central economic zone of China, including henan province. It emphasized the need to rely on the existing foundation to upgrade the industrial level of the central region, promote industrialization and urbanization, and achieve a significant increase in the level of economic development. China's new and high technology industrial development zone is a new and high technology industrial development zone established in some cities with intensive knowledge and technology. In 1999, jiaozuo established the high- tech industrial development zone, and in 2014, it was renamed as the urban-rural integration demonstration zone. After 20 years of development, the demonstration zone entering the newera has been upgraded into the big family of 168 national high-tech industrial development zones.

2.3.2. Guidance of the National Entrepreneurship and Innovation Strategy

In his 2015 government work report, premier Li keqiang called for mass entrepreneurship and innovation. In September 2018, the State Council issued the opinions on promoting high-quality development of innovation and entrepreneurship to create an upgraded version of mass entrepreneurship and innovation. At present, the idea of mass entrepreneurship and innovation has gradually gained popular support. Local governments and departments have responded to it, and a variety of new industries, models and forms of business have emerged. "Innovation and entrepreneurship" is the eternal driving force for social progress. The purpose of "mass entrepreneurship and innovation" is to promote economic development. On the one hand, we can create better high-tech products through mass innovation, create a good market environment and improve the quality of economic development. On the other hand, through mass entrepreneurship to increase the market subject, increase the market power and vitality, promote rapid economic development[5]. In August 2017, jiaozuo has released the jiaozuo municipal people's government on encourage the entrepreneurs of all innovation to speed up the implementation opinion "of the development of science and technology service industry, put forward to accelerate the" public entrepreneurship, peoples innovation ", creating a favorable "double gen ecological environment", inspire the innovation ability and entrepreneurial energy of the whole society and build a new engine development of jiaozuo, strengthen the momentum of development.

2.3.3. Strong Market Demand

The report to the 19th National Congress of the Communist Party of China (CPC) pointed out that "we should deepen the reform of the science and technology system, establish a technology innovation system with enterprises as the main body and the market as the orientation, and promote the transformation of scientific and technological achievements". "Market-oriented" means that the scientific and technological innovation activities and scientific and technological innovation achievements of enterprises must always start from the perspective of market demand, understand the needs of consumers, and put the foothold and destination of enterprise development on whether it can meet the needs of consumers. The driving force to promote the development of new and high technology industry is the pull of market demand. For resource- exhausted cities, new and high technology industry is an industry in its initial and growth stage, and consumers' demand for new and high technology products is also constantly rising. This provides a development opportunity for resource-exhausted cities to develop high-tech industries. Enterprises should seize this opportunity, constantly develop new products according to the needs of consumers, seize market share and promote the continuous development of industries.

2.4. Threat

2.4.1. Intensified Market Competition

With the rapid development of science and technology, the pace of innovation of high-tech products is gradually accelerated, the life cycle is shortened, and the market competition is gradually intensified. High-tech enterprises will inevitably be under pressure from all aspects, including

consumers, competition of similar products and alternative products. At present, in order to promote economic development and improve core competitiveness, all countries in the world are vigorously developing emerging industries and high-tech industries. With the national emphasis on high-tech industries and increasing investment in science and technology, high-tech industries in various regions have achieved certain development. In recent years, various regions have introduced various preferential policies on the cultivation of high-tech enterprises, research and development of science and technology, introduction of high-tech talents and enterprise financing to attract entrepreneurs to join the high-tech industry, which has increased the competition among enterprises to a certain extent.

2.4.2. High Requirements for New Technologies

The particularity of high-tech products makes it has a higher requirement on science and technology, and thus must constantly technology innovation, and the constant innovation of science and technology is the cost for the new product provides strong technical support and the function, but with the continuous development of economic and social make consumers produced for more powerful, more reasonable price products. In recent years, the domestic high and new technology industry has developed well[6]. While creating economic benefits, the high and new technology industry has been making breakthroughs in the fierce market competition, which further promotes the innovation of science and technology and has higher and higher requirements for technological innovation.

2.4.3. Fast Product Update

The upgrading of high-tech products is a universal objective reality. The continuous updating of products is a symbol of the product structure with more vitality, and the result of the joint action of economic, social, scientific and technological factors. The rapid development of science and technology has provided reliable technical support for the high-tech industry, but science and technology update faster, and the life cycle of high-tech products to meet the needs of the market is also significantly shortened. Secondly, the intensified market competition puts forward higher requirements on the research and development ability of enterprises and the development of new products. High-tech enterprises need to accurately capture the trend of market demand and timely adjust according to the market demand. Consumers tend to buy new products that can meet their needs. The emergence of new products makes the technology of old products relatively backward, thus showing that new products occupy the market of old products. This is a huge challenge for high-tech enterprises.

3. Countermeasures for Development of High-Tech Industry in Jiaozuo

3.1. Ctrengthen Government Guidance

In order to promote the rapid economic development and accelerate the process of transformation of resource-exhausted cities, it has become an important government action of many countries and regions to give priority to the development of high-tech industries. To strengthen the role of jiaozuo government in the development of high-tech industry, the government can formulate corresponding policies to give full play to its guiding role and promote the rapid development of jiaozuo high-tech industry.

First of all, we should standardize the identification of high-tech enterprises and projects. On the one hand, resources are limited, so to use the limited resources in the most efficient place, it is necessary to standardize the certification standards of high-tech enterprises or projects, to ensure the quality of enterprises, improve the efficiency of the use of resources. On the other hand, while standardizing the certification standards, we should make full use of government resources, so that more small and medium-sized enterprises with development potential can have the opportunity to get government support and promote the rapid development of high- tech industry.

Second, we should strengthen the protection of intellectual property rights. High-tech enterprises need to obtain the advantages to enter the market through continuous technological innovation, and these advantages depend on whether the enterprise enjoys the intellectual property rights of its technological achievements, so parents should protect intellectual property rights. On the one hand,

enterprises should be guided to attach importance to intellectual property, establish an intellectual property management system, strengthen the management of intellectual property, and infiltrate the protection of intellectual property into the work of high-tech enterprises, including product development, promotion of new products and internal and external technical exchanges. On the other hand, the enterprise should improve the management ability of intellectual property, pay attention to the cultivation of intellectual property talents, and protect the scientific and technological innovation achievements of the enterprise.

3.2. Improve the Innovation Ability of Enterprises

High-tech enterprises are the main body of high-tech industry development and scientific and technological innovation. Therefore, the innovation ability of enterprises is the key factor for the stable and rapid development of high-tech industry.

To improve the innovation ability of enterprises, the first step is to increase the investment in scientific research. Scientific research fund is the foundation for high-tech enterprises to carry out scientific and technological innovation. Only by increasing the investment of scientific research fund can enterprises research new technologies and new products. Scientific research talents are the carrier of intelligence and knowledge of the high-tech industry. The high-tech industry is a knowledge-intensive industry. Only with a large number of high-tech talents can enterprises keep innovating and developing.

Secondly, we should cultivate the consciousness of innovation and strengthen the innovation of science and technology. On the one hand, it is necessary to cultivate the innovation consciousness of enterprises. The government should create an atmosphere in which the whole society supports and encourages innovation, actively carry out innovation publicity activities, promote mass entrepreneurship and innovation, and transmit relevant ideas to enterprises, so as to create a good atmosphere for high-tech enterprises to improve their innovation ability. On the other hand, it is necessary to strengthen the scientific and technological innovation of enterprises, strengthen the cultivation of new and high technology enterprises, support the new and high technology enterprises of start-up type and growth type, and form the echelon of enterprise development.

3.3. Improve the Policy System

To promote the rapid development of high-tech industry, it is necessary to establish a sound policy system to effectively solve the problems closely related to the development of high-tech industry, such as tax incentive system, market access mechanism and credit guarantee system, so as to ensure the sustainable development of high-tech industry.

First of all, we should reform the tax system and give full play to the incentive role of the tax system. Tax incentives include direct tax incentives and indirect tax incentives. Direct tax incentives include tax rate reduction and tax reduction, so as to give direct incentives to enterprises. Indirect tax incentives include profit and loss carryover, accelerated depreciation, and tax deferral. Most developed countries adopt indirect preference, but most of our country adopts direct preference. Therefore, the tax system should strengthen the indirect preferential way, encourage the development of high-tech enterprises, create a fair development environment, and implement a unified tax policy[7].

Second, we should reform the market access mechanism and lower the threshold of market access. In market access, the government is the maker of the rules. In order to meet the entrepreneurial aspirations of researchers and graduates, the government should further improve the market access rules system for high-tech enterprises. High market access threshold, to a certain extent, will restrict the establishment of small and medium-sized enterprises. As most high-tech enterprises in jiaozuo are in the initial stage and growth stage, it is necessary to reduce the threshold of market access to adapt to the development of initial enterprises. Scientific and reasonable market access mechanism will encourage graduates and researchers with advanced science and technology and innovative spirit to establish their own enterprises, which is conducive to the development and expansion of high-tech industry in jiaozuo.

Finally, we should improve the credit guarantee system, encourage and guide credit guarantee institutions to provide more services for high-tech enterprises. On the one hand, the existing credit

guarantee institutions in jiaozuo should be integrated to expand the scale of credit guarantee. On the other hand, the credit guarantee mechanism of small and medium-sized enterprises should be established. Under the existing system, policy-based guarantee should be implemented to encourage the commercial guarantee of social funds. In addition, a reasonable and effective supervision mechanism should be established to ensure the smooth implementation of various policies and gradually establish a credit guarantee mechanism suitable for the development of high-tech industry in jiaozuo.

3.4. Strengthen Talent Introduction

Talents are the key factor of technological innovation of enterprises. The development of high- tech industry should pay attention to the introduction of talents, actively cultivate innovative talents, establish a sound talent mechanism, increase the training and introduction of high-tech talents, and promote the continuous development of high-tech industry in jiaozuo.

First of all, we should give full play to the role of existing talents, and give certain preferential policies to the talents who have been introduced, so as to solve their worries at home, such as house purchase, children's schooling and social security. It is necessary to accelerate the construction of a green channel for talent introduction, adopt a flexible policy for talent introduction, and attract a large number of high-tech talents to join the high-tech industry. In addition, it is necessary to strengthen the training of talents, combine the training of talents with the needs of the industry, and cultivate new and high-tech talents with a purpose, so as to promote the rapid development of new and high-tech industry in jiaozuo. Secondly, it is necessary to establish and perfect the talent introduction mechanism, reform the enterprise employment system and attract high-tech talents to provide solid and powerful human resources guarantee for the sustainable development of high-tech industry in jiaozuo. In addition, we should actively carry out beneficial exploration, attract talents with policies, retain talents with careers, broaden the channels of talent selection, rationally allocate human resources, and establish a sound talent mechanism. According to the particularity of the transformation of resource-exhausted cities, a talent mechanism suitable for the development of high-tech industry in jiaozuo city should be established to cultivate existing talents and introduce talents in short supply for the sustainable development of high-tech industry in jiaozuo city.

3.5. Optimize the Industrial Environment

The external environment of the industry is very important to the development of the industry. First of all, we should strengthen the cooperation between enterprises, universities and research institutes, promote the cooperation among scientific research institutes, universities and enterprises, and promote the cooperation among enterprises, universities and research institutes to achieve a win-win situation through continuous innovation, so as to push the cooperation between enterprises, universities and research institutes in jiaozuo city to develop in a deeper direction. According to the development status of high-tech industry in jiaozuo city, we should give full play to the role of the market while giving full play to the guiding role of the government. Promote the enhancement of scientific and technological innovation ability of institutions of higher learning and research institutes of jiaozuo city, promote the close cooperation between key disciplines of institutions of higher learning and high-tech industry of jiaozuo city, so as to improve the ability of high-tech industry of jiaozuo city to undertake scientific research and innovation achievements.

Secondly, the industrialization and clustering of high-tech enterprises should be promoted. Only through industrialization and clustering can enterprises create valuable and marketable new products. The government should optimize the carrier environment, policy environment, innovation and entrepreneurship environment, supporting facilities environment and talent service environment for the development of enterprises in industrial parks. In addition, it is necessary to create a good environment for the development of high-tech industry, enhance the degree of trust between enterprises and strengthen their cooperative relations. Strengthen the credit cooperation between enterprises and financial institutions, make the enterprise can get in to enter the market, and the development of the subsequent economic advantages and financial support, and then through the correlation between industry and industry, the development of a batch of enterprises have good

relations of cooperation, accelerate the process of jiaozuo the clustering of high-tech industries, promote jiaozuo high-tech industry competitiveness.

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