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Foreign Experience in Using Innovative Technoparks to Increase the Competitiveness of Industrial Products

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Abstract

This research review is devoted to the analysis of foreign experience in the use of innovative technoparks in order to increase the competitiveness of industrial products. Technology parks are key elements of innovation infrastructure that contribute to the creation of a favorable environment for interaction between business, science and the state. The study covers the experience of various countries, including the USA, Germany, China and other innovatively developed regions. The work examines the mechanisms for the formation and functioning of technology parks, their role in stimulating research and development, as well as the introduction of innovations in industry. Particular attention is paid to the interaction of enterprises with research centers, universities and government agencies within technology parks. Successful cases of innovative projects launched within technology parks and their impact on the competitiveness of industrial products are analyzed. The results of the study provide useful practical conclusions and recommendations for countries seeking to effectively use innovative technology parks to strengthen their industrial sector and increase competitiveness in the global market.

Keywords: *Foreign Experience; Innovative Technoparks; USA; Germany; China Experience*

Introduction

Contemporary global economic development places high demands on the industrial sectors of countries seeking to maintain and strengthen their competitiveness. In this context, innovative technology parks play a key role, providing infrastructure and conditions for the successful implementation of innovative ideas in industrial production.

The purpose of this study is to analyze foreign experience in using innovative technology parks in order to increase the competitiveness of industrial products. The processes of world globalization and rapid technological development require countries to constantly search for effective tools to stimulate innovation, thereby ensuring sustainable economic growth.

As part of the study, we will consider various models and approaches to the formation and functioning of technology parks in leading countries of the world, including the USA, Germany, China

and others. The emphasis will be on the mechanisms of interaction between the business community, research institutions and government agencies within innovation ecosystems.

As a result of the analysis of foreign experience, we will be able to identify successful practices that contribute to the intensification of research and development, as well as the successful implementation of innovations in industrial production. The findings and recommendations can be a valuable tool for countries seeking to strengthen their industrial sectors in an increasingly competitive global environment [15].

Methods and Research Results

When studying this topic, methods of working with information, a cluster approach, abstraction, classification, review of scientific literature and forecasting were used.

When considering foreign experience in using innovative technology parks to increase the competitiveness of industrial products, several common problems were identified:

1. Lack of Integration. In some cases, difficulties arise in integration between participants in technology parks - enterprises, scientific institutes and government agencies. Effective coordination between these parties is key to creating an innovation ecosystem [1, 2, 3, 4, 5, 6].

2. Financial difficulties. Despite the availability of financial support, some technology parks face a lack of funding to support promising initiatives and start-ups. This can slow down innovation.

3. Lack of qualified personnel. Some regions have difficulty attracting and retaining highly qualified specialists. This may limit the ability of technology parks to develop and implement innovative projects.

4. Patent and Legal Issues. Lack of clarity on legal aspects such as intellectual property protection and patent rights can create barriers to successful innovation.

5. Lack of Cooperation with Big Companies. In some cases, difficulties arise in cooperation between small and medium-sized enterprises active in the technology park and large corporations. This may slow down the process of technology transfer and innovation partnerships.

6. Uneven Distribution of Resources. In some cases, technology park resources may be distributed unevenly, which creates problems of access to innovative development opportunities for all participants.

7. Lack of Sustainability. Some technology parks face sustainability challenges in the long term due to changes in the economic and political environment.

When studying these problems, we came to the conclusion that it can help to solve these problems by forming strategies to effectively overcome difficulties and ensure the successful functioning of technology parks in the context of increasing the competitiveness of industrial products.

Results and Discussion

Let's consider foreign experience in using innovative technology parks to increase the competitiveness of industrial products in several countries:

1. USA Silicon Valley. Silicon Valley in California, USA, is one of the most famous innovation clusters and technology parks in the world. Also, integration with Universities is ensured. Collaboration with major universities such as Stanford plays a key role in building innovation capacity [8].

Features of this technology park are:

Flexible Structures. Silicon Valley is renowned for its flexible and flat organizational structures, which promote rapid decision making and collaboration.

Financial support. The availability of venture capital and financial support for startups allows you to quickly scale up promising projects [9].

People can safely say that Silicon Valley has become the epicenter of innovation in the field of information technology and high technology. Effective interaction between startups, large corporations and investors contributes to the creation of a unique innovation ecosystem.

2. Germany Industrial Technoparks. Germany is actively developing industrial technology parks focused on cooperation between industry and research centers. The Technopark focuses on Manufacturing. Significant attention is paid to innovation in production and integration of digital technologies [6]. Features of this technology park. Integration with Large Companies and Training and Development of Personnel. Technology parks often act as platforms for cooperation between large industrial companies and small businesses. Focus on education and development of qualified personnel ready for digital transformation [7]. Germany is also strengthening its role as a leader in Industry 4.0 by integrating digital innovation into traditional industries.

3. China. Technology parks in the cities of Guangzhou and Shenzhen. The cities of Guangzhou and Shenzhen in China are examples of successful technology parks that are actively developing high-tech industries [5].

They have Investment Zones. Creation of special investment zones and technology parks that attract both Chinese and foreign companies [4].

Features are: State Support and Flexibility in Regulation. The active role of the state in financing and supporting innovation through technology parks. Also, a flexible regulatory system that facilitates the rapid implementation of new technologies [7].

There is no doubt that China is striving for technological autonomy and creating innovation clusters, for example, in the field of artificial intelligence and electric vehicles [13].

If we consider in detail the results that have already been achieved in foreign countries, we can classify them as follows:

Successful Formation of Innovative Ecosystems. Foreign technology parks demonstrate that successful implementation of innovation requires the creation of full-fledged innovation ecosystems that unite companies, educational institutions and research institutes [14].

Effective Interaction Between Sectors. Models in which the business, scientific and government sectors work closely together allow us to more effectively identify market needs and create innovative products [11].

Financial Support as a Key Catalyst. Public and private financial support play a key role in stimulating innovation and the development of start-ups, which contributes to increased competitiveness [3].

Education and Human Resources Development. The creation of educational programs and skill development centers within technology parks contributes to the formation of highly qualified specialists ready to work in the field of innovation.

Flexible Management Models. The introduction of flexible management methods, such as Agile, allows you to quickly adapt to changes and more effectively manage innovation processes [1].

International Cooperation for Global Competitiveness. Active international cooperation and partnerships with foreign innovation centers facilitate the exchange of knowledge and technology, which increases global competitiveness.

Effective Technology Transfer and Knowledge Transfer. Mechanisms for technology transfer and knowledge transfer between companies, including between large companies and start-ups, contribute to the accelerated introduction of innovations in industry.

Creation of Sustainable Innovation Clusters. The formation of innovation clusters around technology parks promotes interaction between various players and creates favorable conditions for joint development.

Integration of Research Centers. Close interaction with scientific and research centers provides access to advanced technologies and stimulates innovative research.

Creation of Effective Mechanisms for Evaluation of Results. The development of systems for assessing the efficiency and effectiveness of technology parks makes it possible to adjust development strategies and ensure the sustainability of the innovation environment.

Conclusion

Based on the above, the following conclusions can be drawn:

Foreign experience shows that successful technology parks play a key role in the formation of innovation ecosystems. These models can be adapted and applied in different countries, taking into account the characteristics of their national economies and industrial structure. Flexible structures, integration with universities, financial support and the active role of the state are the key components of successful technology parks in different countries.

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