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CONCEPTUAL FOUNDATIONS FOR THE FORMATION AND FUNCTIONING OF INDUSTRIAL PARKS

КОНЦЕПТУАЛЬНІ ОСНОВИ ФОРМУВАННЯ ТА ФУНКЦІОНУВАННЯ ІНДУСТРІАЛЬНИХ ПАРКІВ

In today's domestic economy, highly effective integration forms of the synthesis of production, science, and education are practically not represented. The article proves that in the conditions of neo-industrialization, overcoming the problems of Ukraine's entry into world markets, creating innovative potential, and improving the overall economic situation in the country is associated not only with the modernization and technical re-equipment of industrial enterprises but also with the development of the integration forms they form, including industrial parks. This fact made it possible, using theoretical developments in the management of innovative processes, technology park structures, and a systematic approach, to develop a concept for the formation and functioning of industrial parks. The practical implementation of the proposed approach will make it possible to solve the country's industrial policy problems aimed at increasing the level of innovative activity and competitiveness of industrial parks.

Key words: innovative development, technology park structures, industrial park, high-tech production, innovative activity, technical re-equipment, scientific and technical development of the economy, innovative programs.

У вітчизняній економіці на сьогодні практично не представлені вискоєфективні інтеграційні форми синтезу виробництва, науки і освіти. У статті доведено, що в умовах неоіндустріалізації подолання проблем виходу України на світові ринки, створення інноваційного потенціалу і поліпшення загальної економічної ситуації в країні пов'язане не лише з модернізацією і технічним переозброєнням промислових підприємств, але і з розвитком утворюваних ними інтеграційних форм, включаючи індустріальні парки. Індустріальні парки, як і інші елементи технопаркових структур, стали одним з етапів розвитку форм виробничої організації, спрямованих на вдосконалення структурного й інституціонального забезпечення промислової кооперації, аутсорсингу, виробничої локалізації, диверсифікації в системі створення сприятливих умов для розвитку інноваційно-активних підприємств.

Вивчення ролі й значення індустріальних парків в системі інноваційних структур дозволило виділити основні ознаки їх діяльності. Доведено, що забезпечення соціально-економічної значущості та ефективності створення основ для формування індустріальних парків в державному масштабі як інструменту створення наукомісткого сектора економіки України, її реструктуризації й диверсифікації визначається взаємодією інтересів суб'єктів інноваційно - інвестиційної діяльності.

Використовуючи теоретичні розробки в області управління інноваційними процесами, технопаркові структурами, а також системний підхід дало можливість розробити

концепцію формування і функціонування індустріальних парків. Важливе значення в системі розробленої концепції формування й функціонування індустріальних парків відводиться певній послідовності дій, що представляє собою алгоритм реалізації інноваційного проєкту. Це дозволить підвищити ефективність функціонування індустріального парку й забезпечити за рахунок синергетичного ефекту приріст валового внутрішнього продукту завдяки інноваційній складовій.

Практична реалізація запропонованого підходу надасть можливість забезпечити рішення завдань промислової політики країни, спрямованих на підвищення рівня інноваційної активності й конкурентоспроможності індустріальних парків.

Ключові слова: інноваційний розвиток, технопаркові структури, індустріальний парк, високотехнологічне виробництво, інноваційна активність, технічне переозброєння, науково-технічний розвиток економіки, інноваційні програми.

JEL Classification: H54, O1, O3, O25

Problem statement. The level of competitiveness of any state in the context of global integration and digitalization is directly determined by innovative activity in the real sectors of the economy. One of the essential indicators of the development of the world economy is the share of successful innovative projects and enterprises that emerged in the country during the year. Ukraine is inferior to the leading countries of the world in terms of innovative activity: the share of enterprises implementing technological innovations in the total volume of enterprises in the real sector of the economy in 2020 was only 3.1 %. At the same time, this figure was 59.7 % in Belgium, 58.9 % in Germany, 48 % in Sweden, and 46.5 % in France.

It is alarming that the intensity of innovation processes in our country during 2008-2020 remains unchanged: no more than 4–5 % of business entities participate in developing and implementing innovative processes in the real economy sector and GDP growth. Every year this indicator tends to decrease [16].

According to the World Intellectual Property Organization Report, only Switzerland and Sweden have remained in the top three innovation rankings for more than a decade. Over the past three years, the top five countries in the global innovation index include Switzerland, Sweden, the United States, the United Kingdom, and the Republic of Korea, entered this group for the first time in 2021. The top 25 most innovative economies in the world mainly include countries in Europe. China is still the only middle-income economy in the top 30.

Practice shows that the high activity and effectiveness of the subjects of the innovation process in these countries of the world was facilitated by the increased role of institutional support for innovative development, including through technology park structures, the active use of the innovative potential of enterprises, including based on interstate interaction, and the improvement of measures to support innovative offers and programs.

In this regard, concerning the economy of Ukraine, it is timely and necessary to develop the conceptual foundations for the formation and functioning of industrial parks in the system of institutional support for innovative development.

Analysis of the recent developments and publications. The problems of innovative development of the state economy, the activation of innovative processes at the level of business entities and sectors, the creation and functioning of technology park structures are studied by a large number of leading domestic and foreign scientists, including A. Alimov [2], A. Amosha [1, 3], Yu. Bocharova [4], V. Galasyuk [5], V. Geyts [6], O. Egorova [7], I. Egorov [8], O. Boiko [8], S. Marchishinets [10], D. Meadows [11], N. Nelson [12], L. Oleksenko [13], O. Oliinyk [14], O. Popovych [15], V. Semynozhenko [6], L. Fedulova [17, 18], B. Weber [19] and others.

At the same time, in theoretical terms, the role and functions of technopark structures in the development of a competitive economy are not fully disclosed, there is no methodological approach to determining their impact on socio-economic development, a methodical approach to identifying the conditions for the specialization of technopark structures in the most competitive and promising high-tech industries, the material and technical, organizational, economic, financial, personnel and

institutional conditions necessary for the development of high-tech industries based on technopark structures have not been determined.

The insufficient level of theoretical and practical elaboration of the issues of the functioning of technopark structures determined the importance of choosing the topic of this scientific study.

Formulating the goals of the article. The purpose of the article is to develop, based on a systematic approach, the conceptual foundations for the formation and functioning of industrial parks to increase the intensity of innovation processes.

Presentation of the basic research material. One of the state economic policy priorities is the accelerated development of the real sector, which requires the creation of various institutional integration formations, including industrial parks. Industrial parks, like other elements of technopark structures, have become one of the stages in the development of forms of the industrial organization aimed at improving the structural and institutional support of industrial cooperation, outsourcing, industrial localization, diversification in the system of creating favorable conditions for the development of innovation-active enterprises.

The terminological analysis of the concept of "industrial park" showed the lack of a unified approach and blurring. Based on the theoretical studies of domestic and foreign scientists, international regulatory documents, the essence of industrial parks can be summarized and defined as:

- a specialized industrial site designed to achieve the economic and social goals of the initiator (state, private structure) of its creation;

- research and territorial production complex with a rather complex functional structure, the main task of which is to create the most favorable environment for the development of small high-tech client firms;

- a particular form of territorial cooperation between producers of innovative and industrial orientation, which helps to reduce production and distribution costs, increase total factor productivity and make fuller use of the resource and human potential of the region;

- a developed land plot, subdivided into allotments following a comprehensive plan and provided with roads, transport interchanges, and utility infrastructure for use by a group of manufacturing enterprises;

- a complex of real estate objects (administrative, production, storage, and other premises that ensure the activity of the industrial park) managed by a single park operator with an area of at least 100,000 m² and infrastructure that allow compact placement and provide conditions for the efficient operation of small and medium-sized industries.

The legal aspects of industrial parks are regulated by the Law of Ukraine «On Industrial Parks» dated 07.09.2021 No. 4416-1, which determined new conditions for the creation, operation, and state support of industrial parks [9]. According to this Law, an industrial (manufacturing) park is understood as a territory, determined by the initiator of the creation of an industrial park following urban planning documentation, equipped with appropriate infrastructure, within which the participants of the industrial park can carry out economic activities in the processing industry, industrial processing and/or (except for waste disposal), as well as scientific and technical activities, activities in the field of information and electronic communications on the terms determined by this Law and the agreement on economic activities within the industrial park. The terminological analysis of the approaches of scientists, the study of the role and significance of industrial parks in the system of innovative structures made it possible to attribute to the main features of their activities:

- many constituent elements (investors, manufacturing enterprises, research centers, banks);

- conceptual focus on achieving a common goal for all participants in the industrial park, namely: creating conditions for the deployment of competitive industrial production and related services;

- building a park on the principle of organizational interaction, competition, and cooperation of all structural elements;

- use of a predominantly horizontal communication management system within the industrial park;

- the existence of the status of a legal entity;

- the predominance of state, mixed and private ownership;

- localized, predominantly suburban location;
- mandatory engineering and technical support;
- the average level of organizational interaction with research institutes and universities.

Trends in the development of the modern economy have led to the evolution of the forms of organization and support of the innovation sphere with the priority of creating industrial parks that contribute to the effective reproduction of innovation potential and the creation of a scientific and technical base for solving socio-economic problems. It should be noted that industrial parks aim to accelerate the scientific and technological development of the state's economy by applying foreign experience through the acquisition of licenses for the right to produce innovative products or use innovative technologies developed by leading business entities.

Ensuring the socio-economic significance and effectiveness of creating the foundations for the formation of industrial parks on a national scale as a tool for creating a science-intensive sector of the economy of Ukraine, its restructuring and diversification are determined by the interaction of interests of subjects of innovation and investment activity (Fig. 1).

A significant contribution to the creation and development of industrial parks was made by the Law of Ukraine "On Industrial Parks," which defined new conditions for the creation, operation, and state support of industrial parks in Ukraine. Thus, foreign investors in Ukraine can do business on the territory of industrial parks and participate in their creation. A significant point in terms of the long-term innovative development of our country is that the industrial park was created at least 30 years.

Despite the importance and relevance of creating in Ukraine industrial parks, the solution of this problem is significantly constrained by some problems:

1. The absence of a state program to promote the development of high technologies, the creation of technology park structures, etc.

2. The limited budgetary funds do not allow financing programs to create industrial parks at the expense of public funds, and investors, both domestic and foreign, due to the unstable economic and political situation, are not interested in investing in these projects.

3. As part of the state incentives for industrial parks in Ukraine, the law provides for compensation of the interest rate on loans (such compensation can be provided for loans received to arrange or do business within industrial parks); financing without obligation to return the funds received (such financing is provided on the condition that the funds received must be used to equip industrial parks and ensure the construction of infrastructure (for example, roads, communication lines, means of heat, gas, water and electricity supply, engineering communications)); compensation of expenses for connection and joining to engineering and transport networks. At the same time, the procedure for providing these compensations and financing has not yet been developed.

The theoretical and practical significance of the creation and effective functioning of industrial parks as the main factor in stimulating innovation and investment activity in Ukraine requires the development of an appropriate concept (Fig. 2).

The main goal of the formation and functioning of industrial parks is to ensure the growth of gross domestic product through the production of qualitatively new, competitive products, as well as to ensure, on this basis, the renewal of the material and technical base of industrial enterprises, the creation of new jobs and an increase in the level of income of the budget system.

Within the industrial parks of Ukraine, it is allowed to carry out the following activities: in the processing industry; in the field of processing industrial and household waste (except for waste disposal); in the field of scientific and technical activity; in the field of information and telecommunications.

On the territory of industrial parks, it is prohibited:

- the production of excisable goods (there is an exception for this list - it is allowed to manufacture cars, bodies for them, trailers and semi-trailers, motorcycles, vehicles intended for the transport of 10 or more passengers, vehicles for the transport of cargo);
- issuance and holding of lotteries;
- activities in the gambling market;

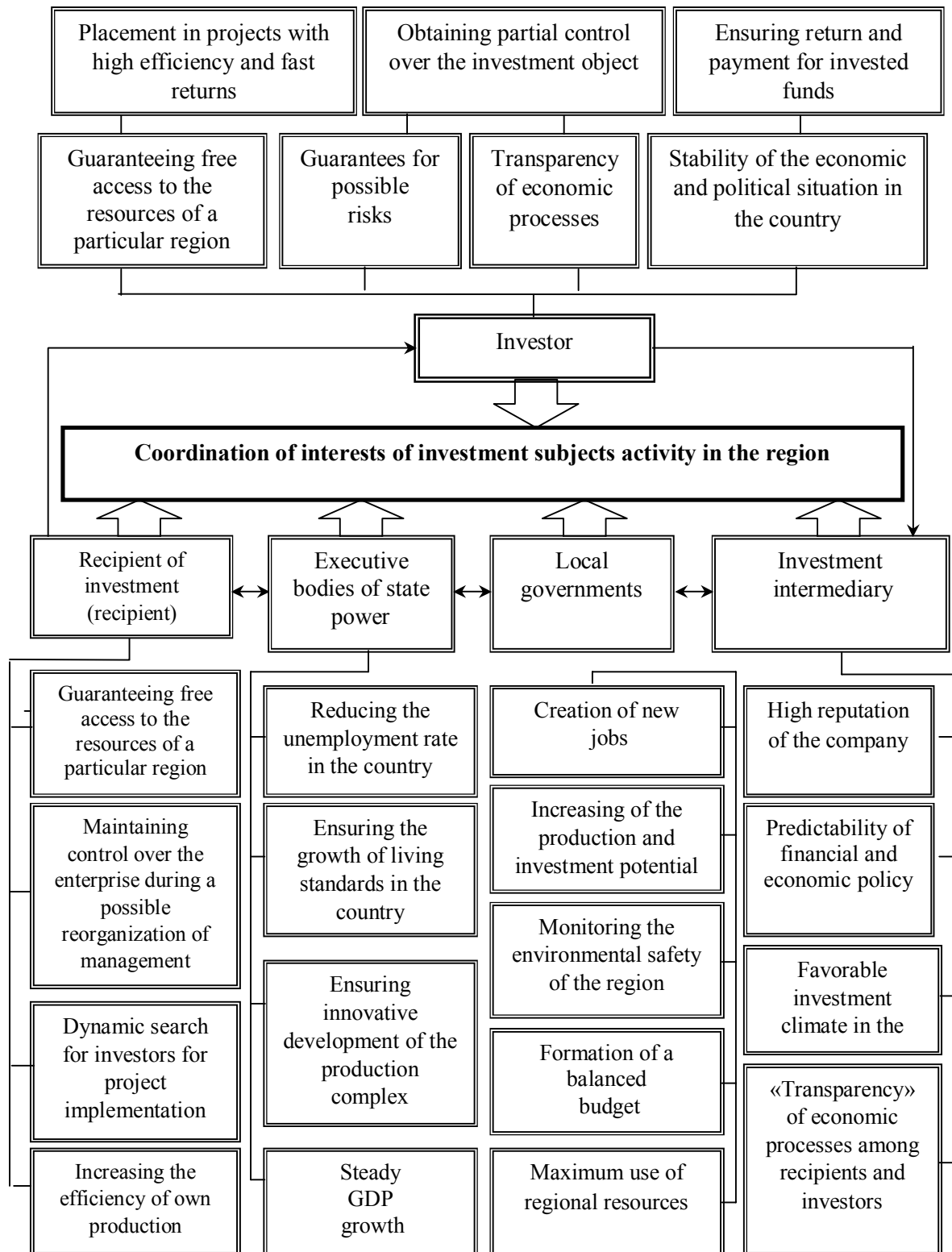


Fig. 1. Areas of interaction between the subjects of innovation and investment activities for the creation of industrial parks

Source: developed by the author

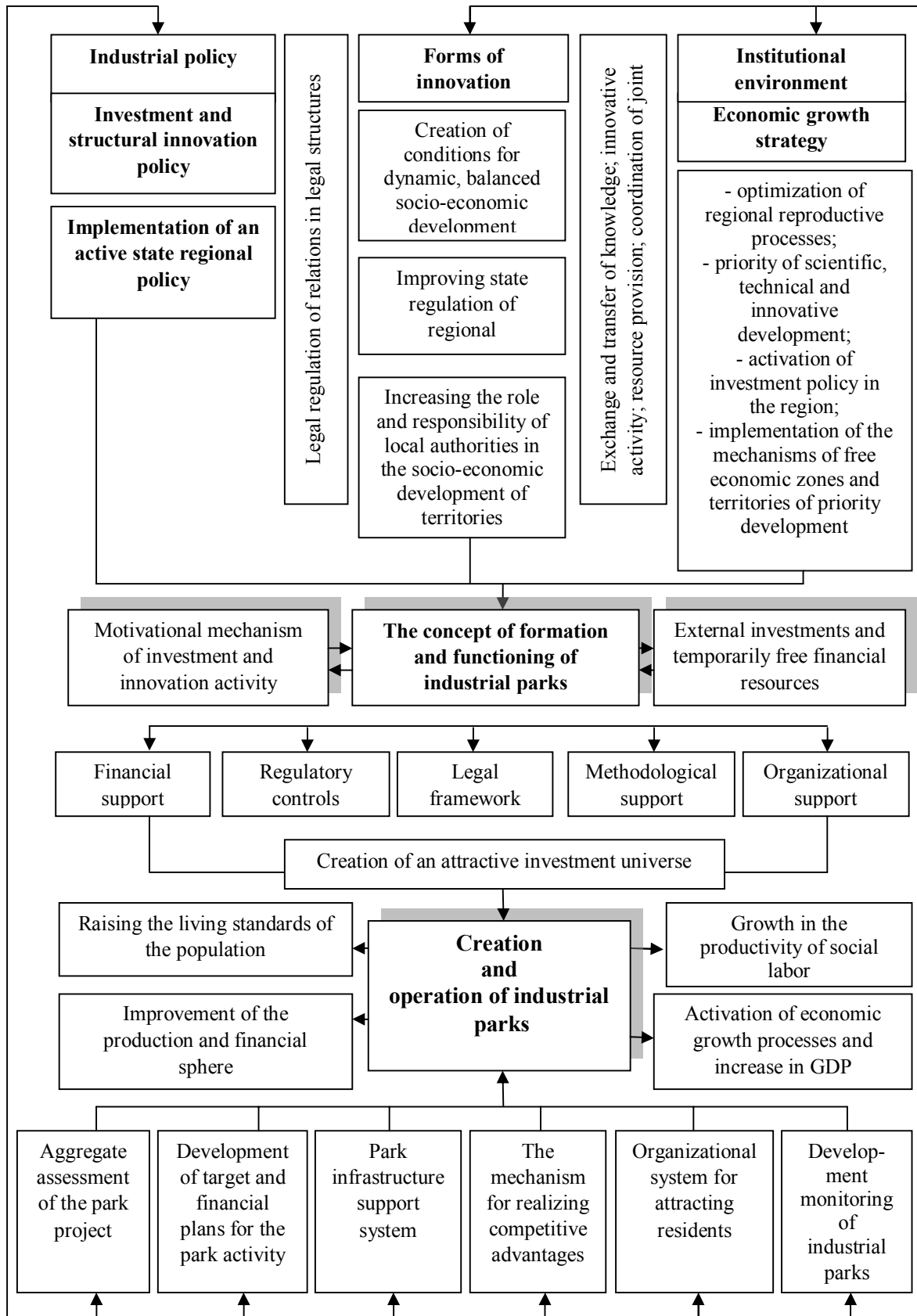


Fig. 2. The concept of formation and functioning of industrial parks
 Source: developed by the author

- mediation in employment abroad;
- industrial fishing of aquatic biological resources outside the jurisdiction of Ukraine;
- cultivation of plants classified by the state as those that can serve as material for the production of narcotic drugs;
- development, production, manufacture, storage, transportation, acquisition, sale (release), import into the territory of Ukraine, export from the territory of Ukraine, use, destruction of narcotic drugs, psychotropic substances, and precursors;
- disposal of household waste.

At the same time, the formation and functioning of industrial parks are directly dependent on the state's industrial policy, the priorities of investment and structural-innovation policy, the forms of generation of innovations, and the conditions created for dynamic and balanced socio-economic development, and the formed institutional environment.

Important in the system of the proposed concept is given to a particular sequence of actions, which is an algorithm for the implementation of an innovative industrial park project:

1. Primary aggregated assessment of the innovative project of the industrial park, which provides for a comprehensive analysis of the competitiveness of products, territory, substantiation of industry specialization, formation of the goal, and strategy for the development of the project. This stage is aimed at preparing for project planning.

2. Development of a targeted plan for the activity of an industrial park, within the framework of which the process of managing an industrial park is modeled, its compliance with standards in the field of innovation management is ensured, an organizational and legal model for the transfer of authority to dispose of a land plot is formed, and a list of functions to be transferred to a management company is determined. This stage is an industrial park planning system.

3. The system of infrastructural support of the industrial park, within the framework of which it is supposed to analyze the existing and planned infrastructure; preparation of technical and geotechnical documentation, development of infrastructure support for the territory of the industrial park.

4. Financial planning for the creation of industrial parks includes drawing up a financial plan and determining sources of financing for an industrial park, budget planning, assessing the volume of capital investments, and forming a program of interaction with local authorities and financial institutions. From the standpoint of a functional approach to management, this stage represents a system of financial planning for an industrial park.

5. A comprehensive mechanism for realizing competitive advantages, aimed at determining the goals, directions for realizing the competitive advantages of an industrial park, developing functions, methods, tools for implementing the park's activities, and forming a system of indicators of competitive advantages.

6. An organizational system for attracting investors, aimed at creating accommodation options for potential residents, creating conditions, measures, and proposals for attracting and retaining residents, selecting residents under the strategic performance indicators of the industrial park and the state industrial policy strategies. This stage is a system for developing long-term partnerships.

7. Monitoring of the development of the industrial park, within the framework of which the analysis of market indicators and financial capabilities of the park, the formation and implementation of an innovative strategy for its development, and the analysis of critical indicators by areas of activity is carried out.

Conclusions. The study made it possible to draw several main conclusions:

- one of the priority areas for the development of the domestic economy is the activation of the processes of creation and operation of industrial parks as a modern form of organizing industrial production on an innovative basis;

- the state policy of promoting the creation of industrial parks and ensuring the efficiency of their functioning, activated with the adoption of the Law of Ukraine "On Industrial Parks," is an essential factor in the structural and technical modernization of the economy, the introduction of an investment and innovative model of economic development of industry, the implementation of a

strategy for equalizing the levels of socio-economic development territories and sectors of the economy;

- essential in the system of the developed concept of the formation and functioning of industrial parks is given to a particular sequence of actions, which is an algorithm for implementing an innovative project. It will improve the efficiency of the industrial park and ensure, through a synergistic effect, an increase in the gross domestic product due to the innovation component.

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