



DIRECTIONS OF INCREASING THE INNOVATION CAPACITY OF INDUSTRIAL ENTERPRISES

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Article history:	Abstract:
Received: 20 th September 2023	In this article, the classification of factors influencing the innovation potential of industrial enterprises and components of innovation potential, advantages of innovation cluster organization and evaluation methods are presented. The sequence of evaluation of innovative potential in industrial enterprises, the system of measures to stimulate innovative activity is presented.
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INTRODUCTION

Today, innovative development of the economy is gaining priority in ensuring the stable economic growth of the world and national economy. In developed countries, 70-90 percent of the gross domestic product is created due to the development of innovation activities. By introducing strategically important scientific-technological and promising innovative projects, they are achieving high economic development on the basis of modernization of leading production industries, technical and technological updating, introduction of local innovative technologies. In the world, scientific research is being continued on the improvement of the management mechanisms of the infrastructure of innovation activity. In this regard, the ongoing research on the support of innovation activity infrastructure entities, effective management of targeted development of the innovative products market, and improvement of the mechanism of providing investment to start-up projects of its entities has an important place. It should be noted that the creation of an innovation cluster in the formation of the infrastructure of innovation activity in scientific research is considered as a priority topic.

The 2021-2025 strategy for the modernization, rapid and innovative development of the construction network of the Republic of Uzbekistan dated November 27, 2020 in order to further improve the construction network, form mechanisms for the consistent development of architecture and construction bodies and institutions, ensure the effectiveness of the state management system, and introduce advanced digital technologies in the field upon the approval of the decree of the President of the Republic of Uzbekistan No. PF-6119, the decision of September 21, 2018 "On approval of the innovative development strategy of the Republic

of Uzbekistan in 2019-2021", the decision of April 1, 2021 "On improving the state management system for the development of scientific and innovative activities" Decree No. PF-6198, in accordance with the Decree of the President No. PF-6244 of June 9, 2021 "On additional measures to increase the industrial potential of the regions", attracting 200 million dollars from the Reconstruction and Development Fund to finance projects in the construction materials industry in Samarkand region, Decisions PQ-4198 dated February 20, 2019 "On measures for the fundamental improvement and comprehensive development of the construction materials industry", PQ-4335 dated May 23, 2019 "On additional measures related to the rapid development of the construction materials industry" and other normative - legal documents serve to increase investment processes in the development of the construction industry.

ANALYSIS OF LITERATURE ON THE TOPIC

The creation of conditions that allow the development of innovation activity requires, first of all, the implementation of institutional changes in the field of science and education. Because the existing organizational forms of scientific and educational institutions do not allow them to fully realize their potential in organizing innovative activities and actively adapt to market conditions [4].

Various aspects of the organization of innovative processes in the international experience can be found in the works of S. Valdaitseva, V. Kabakova, A. Kazantseva, G. Krayukhina, A. Porshneva, K. Puzqnya, A. Rumyantseva and other scientists. In the works of the well-known Y. Schumpeter, G. Mensch, Dj. Forrester, mechanisms of macroeconomic models



providing the concept of the innovative composition of economic growth were developed [5].

There are many scientific works dedicated to the formation and evaluation of innovative potential as a scientific and technical potential, among which the works of V. Gromeki, G. Dobrov, Yu. Kopigin, A. Medvedev, and V. Solovev can be included [6].

A. Anchishkin, A. Babashkin, G. Barishev, V. Bezrukov, Yu. Voronin, D. Kazakevich, I. Korolev, G. Petrov, M. Pereverzeva, from the point of view of the characteristics of economic systems at the current stage of their activity, special issues, considered in the works of A. Seleznev, V. Tyurin, O. Tsaplin and others. Particular aspects related to cluster mechanisms forming the basis of the study of current problems in strategy development. Researched by Steiner, Van Horna et al. [7].

RESEARCH METHODOLOGY

The results of the scientific research of national and foreign scientists, who were engaged in the analysis of the problems of increasing innovation processes in the development of the industry, served as the theoretical and methodological basis of this study. In the preparation of the article, abstract and analytical observation, comparative and factor analysis, indicative, selective observation, comparison, economic-statistical and other methods were used.

ANALYSIS AND RESULTS

The concept of innovative potential is the number of organizations that carry out various developments and researches, their productivity, efficiency, intellectual property objects, the number of experts, scientists, personnel in the field of innovation, financing and material production base, scientific information, innovation and innovative activities in the country and abroad. information, scientific schools and their role in national and world science, is a resource of innovative activity.

Since the equal concentration of resources does not guarantee the achievement of the same economic results in different conditions, the consideration of innovative potential as a set of resources does not reflect the economic essence of this concept. Innovative potential, in addition to accumulated resources, includes unused, hidden opportunities that economic entities can use to achieve their goals.

In our opinion, opportunity is the funds, conditions and conditions necessary to make something happen. In other words, opportunity is the availability of funds necessary for something, favorable conditions for something, and circumstances that allow something to happen.

V.P. Barancheeva and V.N. In Gunina's scientific works, innovative potential is interpreted as a measure of the enterprise's readiness to implement an innovative project or innovative change program to achieve innovative goals [8].

In our opinion, innovative potential is the development of new developments, discoveries or inventions, creation of useful models, and the creation of useful models, regardless of the type of ownership, organizational and legal status, size of an enterprise or organization, or in general, in which branch, field of activity, ownership form, organizational and legal status, size. is the sum of all available intellectual, financial, personnel, informational, material-technical and other resources and opportunities for effective application.

It can be seen from the main components that make up the innovative potential of the enterprise presented in Table 1 below that if the innovative potential consists of personnel, financial-economic, production-technological, scientific-technical, organizational-management potential, factors of innovative activity, innovative activity is the main elements of the innovative system - describes the possibilities of effective use of knowledge, technologies, ICTs, as well as the readiness to introduce all innovations.

Table 1
Components of the innovative potential of the enterprise [9]

Components	Content
Staff capacity	The composition of workers, the level of qualifications of workers, the system of training, upgrading and retraining of employees
Financial and economic potential	Financial stability, liquidity, profitability, enterprise profitability; market position, usefulness of innovations, fixed capital, investments in ITTKI, sources of financing
Production-technological potential	State and technological level of production funds, modern innovative and information technologies of production, advanced equipment, materials, laboratory and office equipment



Scientific and technical potential	Conducting ITTKIs, degree of commercialization of ITTKIs results, experience in development of new scientific developments, intellectual property objects (registered and conducted up to the stage of implementation)
Organizational-management potential	Organizational structure, innovation infrastructure, effectiveness of innovation management, marketing strategies of innovation management, innovation financing organization, level of intellectual property legislation, intellectual property management
Factors of innovative activity	The form of ownership of the enterprise, its size, network affiliation, readiness and ability of the enterprise's employees to implement innovative activities

Based on the results of our research on innovative potential, we can note the following main approaches to determining innovative potential:

- as a set of resources that can be involved in the implementation of innovative activities;
- as an opportunity to implement innovative activities;
- as readiness to implement innovative activities;
- as an opportunity and readiness to implement innovative activities;
- as the ability to implement innovative activities.

In our opinion, the following approaches have the power of mutual influence, if there are a number of opportunities for innovative activity, the ability, in turn, is one of the important conditions that provide the opportunity and the necessary level of readiness for the implementation of this innovative potential.

The creation of an innovation cluster is carried out on the basis of the interaction and relations of industrial enterprises with scientific and higher education institutions, with the support of state structures, in the interests of the implementation of the innovative policy for the development of the region. At the first stage, such communication and relations are usually formed between economic entities in the same region (of course, we are not talking about virtual clusters here, because the activity of such clusters goes beyond the geographical boundaries and covers the stages of

development and implementation of innovative ideas, but in which the production process is not actually carried out). Taking into account the fact that the enterprises belonging to the cluster belong to different sectors and industries, it is possible to talk about the aspects of interaction between these economic entities not only related to the territory, but also related to the sector and industries. In the development of the policy of clusters in the development of the national economy, it is necessary to give great importance to the regional localization of innovation cluster projects and the uniqueness of innovation clusters in terms of economic sectors.

This specificity makes clusters instruments of innovative development strategy of regions and instruments of sector policy. From the point of view of the essence of the activities of economic entities in the innovation cluster and the dynamics of the processes of quantitative and qualitative changes in the composition of the cluster, changes in the territorial boundaries of the composition of the cluster participants and their belonging to a certain economic network, the innovation cluster creates certain advantages for the development of the region, industrial enterprises and groups of different cluster participants. can be described as a system (Table 2).

Table 2
The advantages of creating an innovative cluster in the formation of infrastructure serving the development of economic sectors [10]

Advantages	For the area	For industrial enterprises	For other participants of the cluster
1. Economic advantages	Growth of investment attractiveness of the territory, increase of taxpayers and tax base	Reduction of transaction costs, investment of risky innovative projects, co-financing of marketing research	Reduction of transaction costs, increase in access to financial resources, reduction of costs for ITTKI, increase in the volume of sales
2. Social benefits	An increase in the number of jobs, an increase in the efficiency of the vocational education system, and an	Increase in the number of qualified personnel, emergence of new knowledge,	The formation of a stable network of contacts that ensures the effective



	increase in the standard of living of the population.	implementation of social programs and projects	introduction of inventions into innovations
3. Structural advantages	Creation of conditions for structural restructuring of the economy, growth of innovative potential	The cluster creates the effect of scale of production, and the basis of this effect is the innovation core.	Use of the innovative potential of other participants and create conditions for innovative ideas

Thus, the presence of innovative clusters changes the content of the economic policy of the region, and the actions are not focused on supporting individual enterprises, but on developing a system of mutual relations between economic entities and state institutions. Regional policy should be aimed at creating a competitive advantage of the region based on the organization of innovative clusters as a mechanism that gives practical results in the implementation of these strategic goals.

Innovation cluster policy represents a master plan aimed at the innovative development of the region, which should reflect not only the configuration of initial industries formed around new and important technologies in the region, but also the perspective production and technology scheme developed taking into account existing resources, infrastructures and market conditions. .

It can be seen that the innovation cluster is a dynamic system that ensures its development based on the use of synergistic results. The cluster policy helps to determine the initial state of relations in the region for the production of innovative products. The cluster policy should determine the nature of technological progress at certain stages, creating conditions for the development of scientific research bases in the region

and increasing its innovative potential. One of the priority directions for the development of innovative clusters should be the formation of innovative businesses that can bring advanced technologies to the surface in the domestic and foreign markets; the basis of the organization of the innovation cluster is the development of the innovative activities of industrial enterprises. As a result of the creation and efficient operation of innovation infrastructures, industrial enterprises provide a technological basis for the implementation of innovation processes by cluster participants.

The assessment of innovative potential is carried out based on one of 2 possible assessment methods based on the main task: a detailed assessment of innovative potential or a diagnostic assessment method. The method of detailed evaluation in the assessment of innovation potential is mainly used at the initial stage of the innovation project, in order to determine the possibility and readiness of the enterprise to implement innovations. Methodological foundations of the method of detailed assessment of innovative potential are covered in depth in the scientific works of R. Fathutdinov, V. Ya. Gorfinkel, B. N. Chernysheva and A. A. Bovina. The scheme of the approach to the detailed assessment of innovative potential is as follows (Fig. 1):

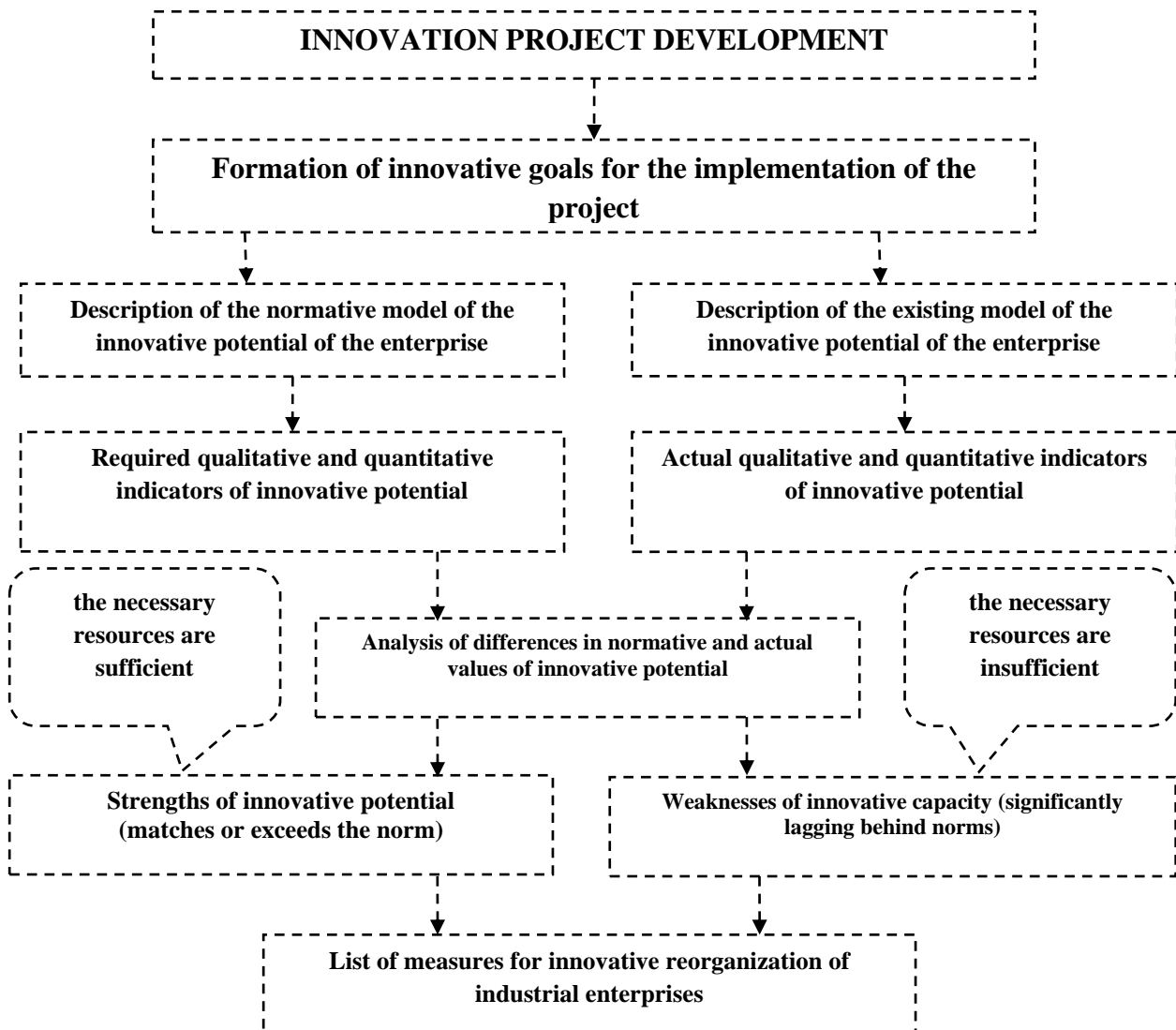


Fig. 1. Detailed assessment of innovation potential in industrial enterprises

A normative model of the state of the innovative potential of the enterprise is developed (qualitative and quantitative requirements are formed for all elements of the level of innovative potential); the real state of all elements of innovative potential is assessed; potential deviations from normative indicators are shown; the strengths and weaknesses of the potential are identified; various measures are developed to correct the detected deviations in order to strengthen the weak points. Thus, the assessment using a detailed approach of innovative potential allows to assess the state of the enterprise's own resource base for the implementation

of a new project. In our opinion, this approach also has some disadvantages: due to the fact that normative values are determined only for certain innovations, the possibility of implementing other innovative projects is limited; the absence of a clear procedure for establishing normative assessment criteria on which expert assessment is based; as a result of this analysis, an integral assessment of the enterprise's innovative potential is not determined as a result of a private assessment of the level of readiness of the enterprise in relation to a specific innovative project. Enterprises that exported innovative products in the largest amount were enterprises of the medium high-



tech sector. In 2022, the average share of high-tech products in the export volume of innovative industrial products was 51.1%, and the share of high-tech products was 6.9%.

In 2022, the share of high-tech and average high-tech industries based on total scientific achievements in the total volume of industrial production was 13.87 percent (Table 3).

Table 3
The relative weight of high-tech and medium-high-tech industries in the total volume of industrial production, (in %)¹

Industrial sectors	2015	2016	2017	2018	2019	2020	2021	2022
Industry, total	100	100	100	100	100	100	100	100
High-tech networks								
Computing equipment industry	0.187	0.121	0.156	0.151	0.124	0.079	0.099	0.032
Production of equipment for medicine, physiology and biology	0.009	0.002	0.001	0.001	0.001	-	-	0.002
Production of optical and optical-mechanical tools and equipment	0.013	0.012	0.016	0.019	0.015	0.006	0.005	0.001
Production of equipment for control and regulation of technological processes	0.035	0.194	0.025	0.060	0.018	0.027	0.038	0.026
Production of instruments for measuring mechanical quantities	0.006	-	-	-	-	-	-	0.002
Chemical and pharmaceutical industry	0.304	0.168	0.199	0.269	0.301	0.347	0.653	0.749
Microbiology industry	0.254	0.112	0.123	0.030	0.043	0.011	0.007	0.026
Average high-tech networks								
Chemical fiber and yarn industry	0.052	0.020	0.013	0.023	0.019	0.033	0.046	0.026
Production of trailers for automobile tractors	3,544	7,183	8,390	9,028	9,796	9,618	8,909	11,706
Agricultural machinery	0.624	0.177	0.140	0.119	0.105	0.096	0.206	0.163
Total high-tech and medium-high-tech industries	6.1	9.4	10.0	11.0	11.4	11.6	10.8	13.8

In 2022, the share of innovative products in the total volume of sold products was 6.5 percent, and the share of innovative product exports in the total volume of innovative products was 17.6 percent. In some sectors of the economy, the share of innovative products in the total volume of products sold is very low, this indicator was only 0.001 percent in the electronics sector in 2022. In recent years, the volume of production of innovative products of metallurgical, chemical and petrochemical industry, light and food industry enterprises has increased significantly. The share of the fuel industry in the total production of innovative products has decreased. There was a tendency to differentiate the production of new product types by sectors. Most of the innovative products (80.0%) are goods, works and services developed in the last 2 years.

Innovative products adopted for the first time made 18.5% in 2021, and by 2022 this indicator was 15.1%. Half of it was sold to foreign countries. The system of measures to encourage innovative activity should include the following: maintenance and development of the system of basic institutions and scientific communities (environment) necessary for the accumulation of knowledge; selection and support of equal directions in the field of science; creation and commercialization of technologies; development of innovative infrastructures; modernization of industry aimed at innovative development. In implementing this direction, it is necessary to solve the following problems:

¹Official statistical data, collections and periodicals of the State Statistics Committee of the Republic of Uzbekistan, collections and analytical references published by the Institute of Forecasting and Macroeconomic Research.



Reform of the economic mechanism stimulating innovative activity, which provides for the following:
 developing proposals for improving the tax system:
 clarification of the taxable base;
 improvement of the taxation mechanism;
 to change the amortization policy in order to provide organizations with the opportunity to increase amortization reserves as a source of investment;
 developing proposals for improving the credit system;
 development of science equipment leasing;
 activation of foreign economic activity, which provides for the creation of conditions for the production of local science products with foreign partners and the creation of organizations for their sale in the foreign market;
 creation of a system of collective support of innovations of scientific-technical and higher schools, scientific organizations and institutions for more complete implementation of scientific potential and solving scientific-technical, production and socio-economic problems;
 development of financial, economic and organizational mechanisms of financing innovative industrial complexes and centers, technological parks, innovative enterprises and individual innovative projects;
 stimulating the activities of enterprises that absorb national scientific and technical developments.
 Improvement of the mechanism of investment provision of innovative activities.

The priorities for solving this issue should be high-performance innovative projects that can quickly pay for themselves, taking part of the risk in cooperation with private investors. The following issues will be resolved:
 creation of a normative base for the stable operation of the financing system of scientific, technical and innovative projects;
 establishment of budget and non-budget innovation funds, foreign fund representatives to support the development of innovative activities;
 creating attractive conditions for local and foreign private investors (supporting and encouraging them) in

order to implement innovative projects that can pay for themselves quickly;
 introducing a system of financial risk insurance related to the implementation of innovative projects.

The formation of the integrated infrastructure of the innovation process is an important link in the support and stimulation of innovative activities.

The infrastructure of innovative activity is the material basis of the innovative development of the economy, a necessary condition for the transition to new technological systems, an important factor in strengthening the small science-related sector of the regional economy, and one of the leading factors of changes in the economy in general.

The work on the organization of developed innovative infrastructures envisages the organization of the following systems:

a) the system of information provision of innovative activities requires the following activities:

formation of databases and banks on innovative activities;

introduction of a regional information-analytical system of innovative activity that provides access to the database and banks in order to create a single information collection as a lever for activating the production activity of the enterprise, innovation centers;
 development of a unified information system of innovative processes and their gradual introduction;
 creating and filling databases and ensuring their integration into the interregional information system.

A mutual comparison of the evaluation methods used to determine the level of innovative potential of the enterprise is presented in Table 4. Based on the results of the conducted analysis, the advantages and disadvantages of the methods proposed in the scientific and economic literature were taken into account. A method of structural assessment of the innovative potential of industrial enterprises is proposed.

Table 4

Comparison of methods of evaluating the level of innovation potential of industrial enterprises

Comparison criteria	Method 1	Method 2	Method 3
Evaluation method	Expert evaluation method	Financial and economic analysis	A combination of indicator calculation and expert evaluation method
The degree of completeness of the assessment	All components of innovation potential are evaluated	Only financial aspects of innovation potential are analyzed	All components of innovation potential are evaluated
The degree of subjectivity	Average	low	low



Composition of Indicators/Evaluation Parameters	Estimating a large number of parameters	Insufficient number of pointers	The number of indicators is limited, but allows for a sufficiently complete assessment of the innovative potential
Content of information required for assessment	A large amount of data is analyzed, it takes a considerable amount of time to collect it and form a database.	The data that can be obtained from annual and quarterly reports of a small volume are analyzed,	An average amount of information is analyzed, it does not take much time to collect and systematize
Evaluation results	The strengths and weaknesses of the enterprise, the integrated indicator of innovative potential are determined	It is determined whether the enterprise is provided with sufficient financial resources for the implementation of a specific innovation	Problem elements of innovative potential, integral level are determined

The proposed method of structural assessment of the innovative potential of industrial enterprises is based on the economic nature of the innovative potential, taking into account the factors affecting it and its components. A set of indicators for the evaluation of directly controlled factors, which are grouped on the basis of the components of innovative potential and have an impact on them, has been developed. Also, based on the statistical data and information provided in the economic literature aimed at innovation, the author developed a set of criteria values of indicators for the structural assessment of the innovative potential of industrial enterprises.

The following requirements should be taken into account in order to develop methodological guidelines for the evaluation of the innovative potential of industrial enterprises using the method of structural evaluation:

- justifying and defining the goals and objectives of the developed methodological approaches;
- to determine the principles of methodological approaches, assigned and applied areas;
- assessment of innovative potential, determination of the presence and composition of participants in the process;
- determination of the stages in which the assessment of innovative potential is carried out;
- taking into account the occurrence of factors that have a negative impact on the level of innovative potential;
- determining the composition of the assessment indicators;
- determining evaluation criteria;
- determining the scope and direction of the decision-making process.

CONCLUSIONS AND SUGGESTIONS

In our opinion, in order to ensure the achievement of the main goal in the assessment of innovative potential, it is appropriate to mention the following:

- full and comprehensive evaluation of the economic factors of development and its constituent components, which allows to shed light on problematic situations in determining the innovative potential of industrial enterprises and to make recommendations for managing the level of innovative potential of industrial enterprises.

Ensuring the achievement of the stated goal is carried out through the following tasks:

- determining consumption in the evaluation of the innovative potential of industrial enterprises;
- when evaluating the innovative potential of the enterprise, choosing an evaluation method taking into account its economic nature, factors influencing it, and their components;
- providing the assessment process with necessary, reliable and accurate information;
- determining the level of innovative potential of the enterprise in accordance with the chosen method;
- analysis and implementation of the results obtained during the evaluation process;
- development of proposals and recommendations that serve to further improve the management of the level of innovative potential.

These methodological approaches were developed mainly for use in the industrial sector, in particular, it is appropriate to use them in the field of management of innovative potential in industrial enterprises engaged in processing. Also, to use this method in other areas, it is necessary to adapt it as much as possible. The main goals of the developed manuals are to rationalize and



manage the process of structural assessment of the innovative potential of industrial enterprises.

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