

**METHODOLOGICAL APPROACHES TO ANALYZING THE EFFECTIVENESS OF
INNOVATIVE ACTIVITY AT INDUSTRIAL PRODUCTION ENTERPRISES****Kurbanova Shakhnoza Yuldashbayevna**

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Abstract: This article analyzes the issues of assessing the effectiveness of innovative activity in industrial enterprises, their theoretical and practical aspects. Innovative activity is interpreted as a key factor in the processes of increasing the competitiveness of the enterprise, increasing production efficiency, and introducing new technologies. When assessing innovative activity in the industrial sphere, economic, technological, social, and environmental factors are considered in close interrelation. The article highlights the system of main indicators used in determining the effectiveness of innovative activity, their methodological foundations and analytical approaches. At the same time, on the example of the experience of foreign countries, ways to improve the innovation management system at industrial enterprises are also indicated. When assessing the effectiveness of innovative activity, the possibilities of using integral indicators, the multi-criteria analysis method, and the investment return coefficient were analyzed.

Keywords: Innovative activity, industrial enterprise, efficiency, assessment methods, methodology, innovative development, technological innovations, innovation strategy, competitiveness, economic efficiency, innovation management, scientific and technical potential, production modernization.

Annotatsiya: Ushbu maqolada sanoat korxonalarida innovatsion faoliyat samaradorligini baholash masalalari, ularning nazariy hamda amaliy jihatlarini tahlil qilinadi. Innovatsion faoliyat korxonaning raqobatbardoshligini oshirish, ishlab chiqarish samaradorligini kuchaytirish va yangi texnologiyalarni joriy etish jarayonlarida asosiy omil sifatida talqin etiladi. Sanoat sohasida innovatsion faoliyatni baholashda iqtisodiy, texnologik, ijtimoiy va ekologik omillar o'zaro uzviy bog'liqlikda ko'rib chiqiladi. Maqolada innovatsion faoliyat samaradorligini aniqlashda qo'llaniladigan asosiy ko'rsatkichlar tizimi, ularning metodologik asoslari va tahliliy yondashuvlari yoritilgan. Shu bilan birga, xorijiy mamlakatlar tajribasi misolida sanoat korxonalarida innovatsion boshqaruv tizimini takomillashtirish yo'llari ham ko'rsatib o'tiladi. Innovatsion faoliyat natijadorligini baholashda integral ko'rsatkichlar, ko'p mezonli tahlil usuli hamda investitsion qaytarim koeffitsientidan foydalanish imkoniyatlari tahlil etilgan.

Kalit so‘zlar: Innovatsion faoliyat, sanoat korxonasi, samaradorlik, baholash usullari, metodologiya, innovatsion rivojlanish, texnologik yangiliklar, innovatsion strategiya, raqobatbardoshlik, iqtisodiy samaradorlik, innovatsion menejment, ilmiy-texnik salohiyat, ishlab chiqarish modernizatsiyasi.

Аннотация: В данной статье анализируются вопросы оценки эффективности инновационной деятельности на промышленных предприятиях, их теоретические и практические аспекты. Инновационная деятельность трактуется как ключевой фактор в процессах повышения конкурентоспособности предприятия, повышения эффективности производства, внедрения новых технологий. При оценке инновационной деятельности в промышленной сфере экономические, технологические, социальные и экологические факторы рассматриваются во взаимосвязи. В статье рассмотрена система основных показателей, используемых при определении эффективности инновационной деятельности, их методологические основы и аналитические подходы. Вместе с тем на примере опыта зарубежных стран будут показаны и пути совершенствования инновационной системы управления на промышленных предприятиях. При оценке эффективности инновационной деятельности анализируются интегральные показатели, возможность использования многокритериального метода анализа и коэффициента возврата инвестиций.

Ключевые слова: Инновационная деятельность, промышленное предприятие, эффективность, методы оценки, методология, инновационное развитие, технологические инновации, инновационная стратегия, конкурентоспособность, экономическая эффективность, Инновационный менеджмент, научно-технический потенциал, модернизация производства.

Entrance

In the world community, the development and practical application of innovations, the acquisition of technological and scientific achievements occupy a special place in surpassing competitors in the world market and making a great contribution to the socio-economic development of society. They are the main element of economic and social development, ensuring sustainable development and modernization. This serves to increase efficiency at enterprises and is closely related to the improvement of equipment and technologies, cost reduction, energy saving, and rational use of resources. Also, state support for these sectors is very important in the economy. To accelerate the renewal process of industrial enterprises, it is important to regularly prioritize innovations in their work. For this, the effective implementation of the policy of supporting and stimulating innovation by the state should be considered one of the main tasks. As President Sh. Mirziyoyev noted, "Today Uzbekistan is embarking on the path of innovative development aimed at radically improving all spheres of state and public life"[1]. From this point of view, increasing the efficiency of construction materials industry enterprises with new ideas is an important task. To achieve this goal, it is necessary to modernize the state of production and master project management experience, form a set of new projects, and master economic mechanisms aimed at allocating resources in the economy.

It is also advisable to expand research on the scientific substantiation of forecast indicators for the production of building materials in the regions. Analysis of innovations has its own methods and approaches, based on their content in the economy.

The study and analysis of innovative processes allows for a deep understanding of scientific and technological progress and the identification of new directions of economic development. As a result of this process, effective strategies for the creation and implementation of new technologies are developed. Firstly, through the analysis of innovative processes, promising areas of scientific research are identified. This makes it possible to effectively distribute resources and attract investments. Secondly, it becomes possible to assess in advance the risks that may arise in innovative activity and determine appropriate measures against them. In-depth analysis of innovation processes also contributes to increasing the technological competitiveness of enterprises and industries. The possibility of assessing the economic efficiency of technological innovations and developing the most optimal methods of their implementation in practice will be created.

Literature review

According to the research of CIS scientists K.V. Mikhailov, "Innovative activity is the competitive force of the consumer and supplier enterprise"[2]. The analyst primarily assesses "the enterprise's propensity for innovation, availability of resources, and innovative competence." In this case, the enterprise is considered a system inclined towards innovation.

O.V. Navoeva interprets the innovative activity of an enterprise according to the following indicators: "the share of investments directed towards innovative development in the total volume of investments; the structure of innovations; the degree of compliance of innovations with the needs of society; the contribution of innovations to ensuring competitive advantages" [3].

In research aimed at a comprehensive assessment of the indicator of the effectiveness of the innovative activity of an enterprise, the following system of indicators characterizing its innovative development is used: the science intensity of the enterprise; the coefficient of renewal of the manufactured innovative product; Coefficient of efficiency of R&D costs; coefficient of modernization of production at the enterprise; coefficient of intensity of scientific developments at the enterprise" [4].

According to another local researcher, Z. Doniyorova, "In the methodology for assessing the innovative activity of an industrial enterprise, the innovative activity of an enterprise depends on the initial capabilities and structure of the enterprise's innovative potential" [5].

Research and development occupy a special place in increasing the effectiveness of innovative activity. This allows the enterprise to create additional sources of income. The innovative strategy of the enterprise also directly affects its effectiveness. For successful implementation of innovative activity, the enterprise must have long-term strategic planning. In this process, management should support innovative initiatives and create conditions for improving the knowledge and skills of employees.

In general, the effectiveness of innovative activity at industrial enterprises depends on many factors, and in this process it is necessary to act in harmony with technological development, scientific research, management strategy, financial stability, and market demand. Therefore, enterprises should accept innovations as an integral part of their activities and constantly develop them. The use of human resources also plays a large role in assessing the effectiveness of innovative activity. For the implementation of innovations, it is necessary to constantly improve the knowledge and skills of employees.

Research methodology

The methodology of this study is aimed at a systematic analysis of the process of assessing the effectiveness of innovative activity at industrial enterprises, in which the theoretical and practical foundations of scientific research are combined. In the course of the study, the economic content of innovative activity, its influence on production efficiency, and the level of resource utilization were studied using economic analysis, comparative analysis, and statistical methods. At the same time, a comprehensive approach was applied to determining the effectiveness of innovative activity, and such criteria as financial indicators, the level of technological innovation, labor productivity, and product quality were analyzed interconnectedly. The study used tools of economic-mathematical modeling and graphical analysis to determine the indicators of the effectiveness of innovative processes at industrial enterprises. The principles of a systematic approach and functional analysis were chosen as a methodological basis, which served to obtain specific results in assessing innovation activity. Also, based on the experience of foreign countries and their assessment models, methodological recommendations suitable for industrial enterprises of Uzbekistan have been developed. The research methodology is aimed at forming scientifically based approaches that can be applied in practice.

Analysis and results

Currently, the introduction of modern innovative technologies at enterprises and management structures in the production sphere plays an important role in ensuring the competitiveness of these organizations in the markets. This situation ensures an optimal balance between product quality, functionality, and price. As noted in the scientific literature, the innovative activity of enterprises is manifested in such areas as comprehensive research aimed at diversifying the range, improving quality indicators, introducing modern technological solutions into practice, and optimizing production processes. These types of activities are considered as the main elements of the enterprise's overall innovation strategy. Innovative activity should solve the following tasks:

- clarification of existing problems at the enterprise;
- implementation of innovative activities;
- Establishing an innovative process.

The main condition of an enterprise's innovative activity is that everything that exists has the property of rapid wear and tear. Therefore, it is necessary to systematically eliminate all outdated, backward problems that have become obstacles to progress, as well as take into account mistakes, failures, and shortcomings. For this, it is necessary to periodically certify products, technologies, and jobs at enterprises, analyze markets and distribution channels.

In other words, it is necessary to examine all aspects of the enterprise's activities using a specific X-ray diffraction pattern. This is not just diagnostics of the enterprise's production and economic activities, its products, markets, etc. Thanks to it, business owners should be the first to think about bringing their products and services to a morally obsolete state, without waiting for competitors to do so. This encourages enterprises to innovate. In addition, one of the important conditions for ensuring the effectiveness of innovative activity is a systematic approach aimed at increasing the competitiveness of the enterprise. It is necessary to develop the creativity and scientific thinking of employees in innovation processes, as well as to create a culture that supports innovation within the organization.

Practice shows that the realization that the manufactured product may become obsolete in the near future is the most powerful factor forcing a manager to focus on an innovative idea. In modern scientific literature, there are various approaches to assessing the innovative activity of

an enterprise. The main approaches to analyzing and evaluating the innovative activity of an enterprise, most often applied in practice, are the formal, cost-effective, and performance-based approaches.

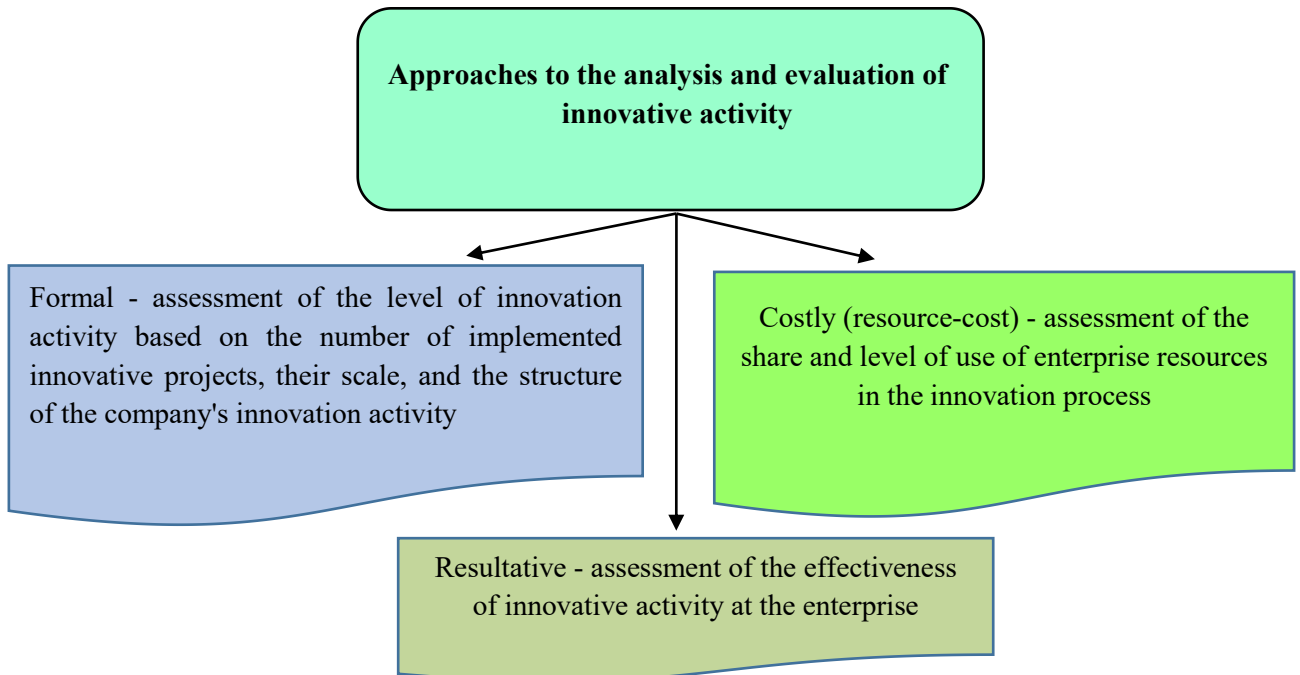


Figure 1. Approaches to assessing innovative activity at enterprises

Figure 1. Approaches to assessing innovative activity at enterprises¹.

Each approach is aimed at assessing the innovative activity of the enterprise from a certain point of view. In particular, the formal method analyzes the number of new projects, while the cost method studies the amount of funds allocated for research work. The result-oriented method is aimed at determining and assessing the economic efficiency of activities related to new ideas.

It should be borne in mind that innovative projects are an integral part of innovative activity and its main feature. Therefore, due to the theoretical complexity of innovative activity, a one-sided assessment of it does not lead to sufficiently reliable results. In practice, a comprehensive analysis and a comprehensive approach are required to draw the correct conclusion. The results of a general analysis of the methods for assessing the innovative activity of domestic and foreign researchers are presented in the table below. Depending on the topic of our research, it is advisable to consider these approaches in the context of their application in industrial enterprises. This raises an important issue of the number of innovative projects used and officially analyzed at the enterprise. However, the identification of direct innovative projects remains a key issue that is not given attention.

Considering the cost approach in relation to an industrial enterprise, it should be noted that there are contradictions in the methodology of cost assessment in the mechanism of this approach. This approach does not determine what costs the enterprise should calculate. The

¹ Author's development

same method is applied to the coefficients of employees engaged in research work and property coefficients intended for research work.

One of the main aspects of the resultant approach is the determination of the economic efficiency of technical, technological, social, and managerial innovations implemented at the enterprise. However, this approach does not take into account the direct economic effect from the sale of innovative products on the market. Basically, the analysis of the state of the enterprise's production processes, its management system, and the level of its innovative activity in the social environment allows for a one-sided assessment of the enterprise.

Conclusion

In conclusion, the modernization of industrial sectors, the widespread introduction of innovative technologies, and the processes of increasing production efficiency are among the priority areas of state policy. From this point of view, the issue of assessing the effectiveness of innovative activity at industrial enterprises acquires special scientific and practical significance. The research results show that the creation of a mechanism for the correct assessment of innovation activity serves to ensure the competitiveness of enterprises, strengthen their economic stability, and increase investment attractiveness.

Based on the results studied in the article, it was established that in many industrial enterprises, the results of innovation processes are assessed only through economic indicators, which does not reflect the full picture of activity. Therefore, the need for a comprehensive approach to the assessment system, including scientific, technical, social, and environmental indicators, along with economic results, has been substantiated. The effectiveness of innovative activity is directly related not only to the growth of production volume or the amount of profit, but also to increasing intellectual potential, the speed of introducing new technologies, and the innovative culture of the enterprise.

Based on the research, the following practical proposals and recommendations were developed. Firstly, it is necessary to develop a unified methodology for assessing innovation activity at industrial enterprises and approve it as a national standard. This ensures the comparability of the assessment results and allows for the analysis of the level of innovative development of various enterprises. Secondly, when determining innovation efficiency, it is necessary to take into account not only financial results, but also such intangible factors as human capital, scientific potential, and the level of renewal of production technologies. Thirdly, it is advisable to introduce a digitized system for monitoring innovative activity at enterprises. This system allows monitoring the progress of innovative projects in real time, assessing their economic and social effectiveness.

Fourthly, in order to increase the effectiveness of innovative activity, it is necessary to strengthen cooperation between research institutions, higher educational institutions, and industrial enterprises. This triad system (university-industrial-scientific institution) ensures the mutual exchange of knowledge and technologies and develops an innovative environment at enterprises.

In addition, when assessing the effectiveness of innovative activity, it is important to use advanced foreign experience, in particular, the experience of the countries of the European Union, Japan, and South Korea. Their practice shows that an effective assessment system should be aimed not only at economic benefits, but also at social results, sustainable development, and ecological balance.

In general, the improvement of methodological approaches to assessing the effectiveness of innovative activity at industrial enterprises, their implementation on a comprehensive and systematic basis occupies an important place in the strategy of innovative development of the

industry of Uzbekistan. The proposed approaches serve as an important scientific and practical basis for increasing the competitiveness of enterprises, fully utilizing innovative potential, and accelerating economic growth.

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