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Полоцкий государственный университет

# УСТОЙЧИВОЕ РАЗВИТИЕ ЭКОНОМИКИ: МЕЖДУНАРОДНЫЕ И НАЦИОНАЛЬНЫЕ АСПЕКТЫ

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Рассмотрены демографические и миграционные процессы в контексте устойчивого развития экономики; обозначены теоретические основы, практические аспекты управления человеческими ресурсами; выявлены и систематизированы драйверы инклюзивного экономического роста в Беларуси и за рубежом; раскрыты актуальные финансовые и экономические аспекты развития отраслей; приведены актуальные проблемы и тенденции развития логистики на современном этапе; отражены современные тенденции совершенствования финансово-кредитного механизма; освещены актуальные проблемы учета, анализа, аудита в контексте устойчивого развития национальных и зарубежных экономических систем; представлены новейшие научные исследования различных аспектов функционирования современных коммуникативных технологий.

Для научных работников, докторантов, аспирантов, действующих практиков и студентов учреждений высшего образования, изучающих экономические дисциплины.

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# DEVELOPMENT METHODS FOR ASSESSMENT OF INNOVATIVE POTENTIAL ORGANIZATIONS

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To implement efficient management of innovation activity is necessary diagnostics level of innovative capacity of the organization and the estimation of its dynamics for further development.

The purpose of assessing the innovative capacity is the ability to select and implement the innovation strategy of the organization, which allows strengthening its position on the market. Assessment of the level innovative capacity organization will:

1. Adequately assess the possibility and readiness of the organization to innovate.
2. To analyze and predict the development trends of the organization to identify its strengths and weaknesses.
3. To prepare recommendations on the formation of innovative strategy of the organization and mechanisms of its implementation.

Comparative analysis of the methods proposed in the economic literature indicates their diversity, both methodical basis of research systems, and on the innovation potential assessment method. Some scientists and specialists prefer tenths, mostly expert methods for assessment factors; others use to this purpose statistical and quantitative data.

Before moving to the assessment of the innovative capacity of the organization, it is necessary to determine the nature and significance of the category of innovative potential.

The innovative capacity of the organization - is the degree of its readiness to fulfill the task to ensure the achievement of the objectives of innovation, in other words the degree of readiness for the implementation of the innovation project or program innovative transformation and introducing innovations.

Having examined the existing methods, group together indicators expressing the innovative potential, in two modules: scientific and technological, which provides the progress and development of the organization and production and financial reflecting the financial resources and the effectiveness of innovation. The list of indicators ensures the necessary and sufficient information on the innovative capacity of the state of the organization (Table 1).

Further, for clarity and more precise understanding of the level of innovative potential of the organization is invited to construct a graph based on the considered indicators. The graph shows the level of innovation potential of each component also helps to identify problem areas in the development of the organization and allows the development of corrective action on specific indicators in order to increase the overall level of innovation capacity of the organization.

According to the developed method, we will define innovation potential of the organization on the example of JSC "Berezovsky cheese-making plant" and identify its strengths and weaknesses, and then be able to give a number of recommendations to improve its innovative capacity.

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Table 1. – Indicators assessment of the innovative capacity organization

| Componentindicator | Symbol |
|---|---|
| Scientific and technical module (NT): | |
| 1.1 Number of patents and other intangible assets (licenses, know-how, trademarks, technical designs and models), including applications filed for patents, pcs. | NT1 |
| 1.2 Number of products or technologies that protected by patents received in the last three years, pcs. | NT2 |
| 1.3 The number of employees with an academic degree (doctors, PhDs), pers. | NT3 |
| 1.4 Number of employees engaged in research and development. | NT4 |

EndoftheTable 1

| | |
|---|---|
| 1.5 The budget of the R&D organization, mln. | NT5 |
| 1.6 The volume of external funds raised for R & D, million rubles. | NT6 |
| 1.7 The volume of orders in the R&D received from other organizations (universities, research institutes), pcs. and a million rubles. | NT7 |
| 1.8 Funding for research and development at the expense of own funds used by the company for R&D as a percentage of revenue, excluding the budget | NT8 |
| Industrial and financial module (PF): | |
| 2.1 Numberofimplementedinnovations | PF1 |
| 2.2 The volume of shipped innovative products (works, services), million rubles. | PF2 |
| 2.3 The total amount of costs (capital and operational) innovation, million rubles. | PF3 |
| 2.4 Number of acquired patents, technologies and other intellectual property objects in the last 3 years, the pieces in mln. | PF4 |
| 2.5 The volume of exports of innovative products (works, services) | PF5 |
| 2.6 The amount of of expenses for equipment, tools and tooling operation life is under 5 years old as a percentage in the total amount of capital expenditures | PF6 |

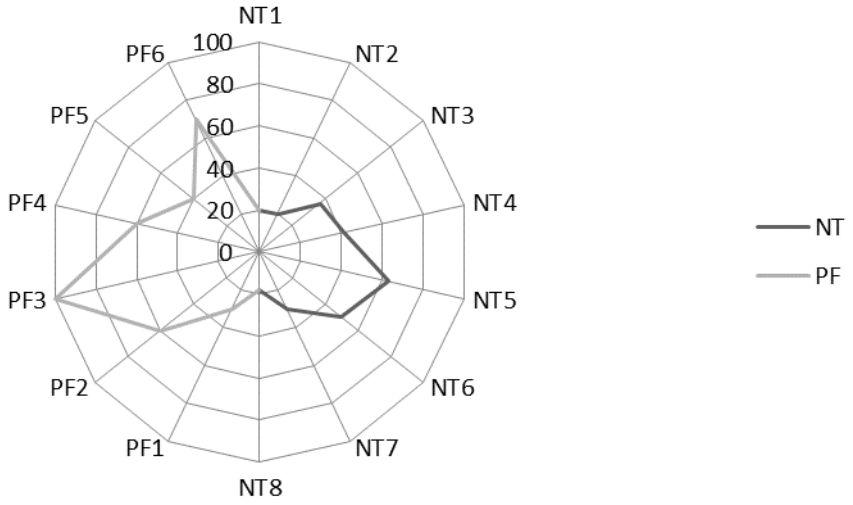


**Figure 1. – Analysis of innovative potentialJSC "Berezovsky cheese-making Plant" for the 2015 - 2017 year**

Source: own development

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As shown in Figure 1, which is dominated by production and financial indicators of the module, thus priorities in JSC "Berezovsky cheese-making Plant" is to improve business processes, aimed at saving resources, modification of the product line, the introduction of new and innovative techniques and technologies. Internal infrastructure innovation consists of a small number of researchers. The company begins to produce innovations, however, early to speak about an active innovation, since there is no involvement of a wide range of specialists and the contribution of a larger share of own funds in innovation.

Next, you must determine the integral estimate the innovation potential ofbecause it allows us to reduce the set of indicators to a single heterogeneous generalizing indicator that allows you to compare the innovative potentials of different organizations. In order to assess the innovation potential of the organization are encouraged to use the integral index, which is define by the formula (1):

$$IP = NT + PF, \tag{1}$$

where IP – the innovative potential of the organization.

$$NT = \sqrt{\sum_{i=1}^{8} NT_i^2}, \tag{2}$$

where NT – scientific and technological module.

$$PF = \sqrt{\sum_{i=1}^{6} PF_i^2}, \tag{3}$$

where PF – production and financial module.

According to the interpretation of estimation the innovation potential of the region's organizations are encouraged to develop a matrix that expresses the 4 quadrants solutions. Each quadrant is interpret by the value of scientific and technological, production and financial modules. We offer the following description of the quadrants in Figure 2.

| | |
|---|---|
| **Quadrant 4 "Researchers"**<br>Region organizations which have a Research and development (R&D) infrastructure, but have a weak industrial base | **Quadrant 3 "Winner"**<br>Region Organizations with the best values of innovation potential indicators |
| **Quadrant 1 is "Lost"**<br>Organization region with an extremely low production and financial and innovation potential | **Quadrant 2 "Manufacturers"**<br>Region Organization receptive to innovation, but they do not have the infrastructure of R&D |

**Figure 2. – Grouping and placement organizations in the quadrants of innovation potential the matrix organizations**

Source: own development.

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Organizations that located in the quadrant of the "Winner" has dedicated resources for innovation. The priority areas of innovation is the development of process innovations, the introduction of new or improved method of production, the establishment on this basis of new products, as well as the search for and development of new activities. The internal infrastructure of innovation activities represented by a large number of employees engaged in research and development. Implementation of innovative activity is one of the main priority activities.

By counting an integral assessment of innovation potential and defined its location in the considered matrix, we can say that the JSC "Berezovsky cheese-making plant" is in the quadrant "manufacturers". Therefore the organization positively accepts innovation and has the capabilities to implement them, but is not ready to develop and realization on a large scale of their own innovation and scientific development. This organization need to improve qualification of employees and attract a larger number of staff with advanced degrees for creating the research sector, it should also increase the production of innovative products and strive to find its niche on the international market, because of this the organization will have additional funds acquisition and development of new technologies.

Thus, the author has developed a system of organizational of innovation potential estimation, which has some features:

Calculation of proposed to take place within the human, financial, scientific, technical, industrial, technological, organizational and managerial capabilities. Such system approach to the evaluation of innovation potential allows estimating the impact of factors on the innovative capacity of the organization, not only from different sides, but also to identify the most important key reasons decisively influence the state of the system.

The proposed method covers a relatively small number of indicators, which facilitates the calculations, but at the same time, provides a complete coverage of the elements of the innovative potential organization.

The share of expert scores reduced to a minimum in the overall composition of the indicators and does not provide for the use of weighting factors of significance that eliminates the subjectivity of the result.

The result of this approach not only provides an integrated assessment of the innovative potential, but also allows you to identify the specific elements that require management actions to improve innovative potential.

We believe that the proposed method will improve the organization of innovative potential assessment procedure to identify opportunities to increase its level as well as to develop and to analyze alternative options for the further strategic development of the organization. The advantage of using this method is determine by the fact that it interprets the innovative potential not only as a sum of its component indicators, as well as an integrated complex, located in an objective relationship.