

METHODOLOGICAL APPROACH TO ASSESSING THE LEVEL OF INNOVATIVE BUSINESS DEVELOPMENT

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Denchik I. S. Methodological Approach to Assessing the Level of Innovative Business Development

The article surveys a methodological approach to assessing the level of innovative business development in the context of the digital transformation of the economy. Particular attention is paid to the formation of the innovative potential of enterprises, which is the basis for increasing their competitiveness and sustainability in the context of globalization and dynamic market changes. The author proposes a comprehensive algorithm for assessing innovation potential based on the use of the Innovation Scorecard system to determine the level of innovation, as well as to assess individual components of innovation development, such as information, scientific, technical, financial, and human resources potential. The article examines the key factors that determine the success of an enterprise's innovation activity, including organizational and management mechanisms, strategic planning, flexibility of adaptation to digital changes, and the use of the latest technologies in business processes. In addition, the article analyzes the impact of corporate culture on the innovative maturity of enterprises and also considers the importance of implementing standards of innovation management and effective management of social security in business. It is shown that the introduction of innovative approaches allows enterprises not only to increase productivity but also to function sustainably in a changing environment, achieving long-term success. The presented results of the study can be used to develop strategies for innovative development aimed at improving economic efficiency and reducing risks in the process of enterprises' adaptation to the digital economy. The conclusions are of practical importance for scientists, managers and policy makers who are interested in developing effective mechanisms to support innovation in the current conditions of digital transformation.

Keywords: innovation development, digital transformation, innovation potential, development strategy, competitiveness, managerial innovation, innovation maturity, digital economy.

Fig.: 2. **Tabl.:** 4. **Formulae:** 1. **Bibl.:** 9.

Denchik Iryna S. – Senior Lecturer of the Department of Management, Business and Professional Communications, V. N. Karazin Kharkiv National University (4 Svobody Square, Kharkiv, 61022, Ukraine)

E-mail: denchikirina@gmail.com

ORCID: <https://orcid.org/0000-0003-1594-1084>

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Денчик І. С. Методологічний підхід до оцінювання рівня інноваційного розвитку бізнесу

У статті досліджено методологічний підхід до оцінювання рівня інноваційного розвитку бізнесу в умовах цифрової трансформації економіки. Особливу увагу приділено питанням формування інноваційного потенціалу підприємств, який є основою для підвищення їхньої конкурентоспроможності та стійкості в умовах глобалізації та динамічних змін ринку. Запропоновано комплексний алгоритм оцінки інноваційного потенціалу, що базується на використанні системи InnovationScorecard для визначення рівня інноваційності, а також оцінки окремих компонентів інноваційного розвитку, таких як інформаційний, науково-технічний, фінансовий та кадровий потенціал. У статті розглянуто ключові фактори, що визначають успішність інноваційної активності підприємства, у тому числі організаційно-управлінські механізми, стратегічне планування, гнучкість адаптації до цифрових змін і застосування новітніх технологій у бізнес-процесах. Крім того, проаналізовано вплив корпоративної культури на інноваційну зрілість підприємств, а також розглянуто значення впровадження стандартів інноваційного менеджменту й ефективного управління соціальною безпекою в бізнесі. Показано, що впровадження інноваційних підходів дозволяє підприємствам не лише підвищити продуктивність, але й стійко функціонувати в умовах мінливого зовнішнього середовища, досягаючи довгострокового успіху. Наведені результати дослідження можуть бути використані для розробки стратегій інноваційного розвитку, спрямованих на поліпшення економічної ефективності та зниження ризиків у процесі адаптації підприємств до цифрової економіки. Одержані висновки мають практичне значення для науковців, управлінців і політиків, які зацікавлені у розвитку ефективних механізмів підтримки інноваційної діяльності в сучасних умовах цифрових перетворень.

Ключові слова: інноваційний розвиток, цифрова трансформація, інноваційний потенціал, стратегія розвитку, конкурентоспроможність, управлінські інновації, інноваційна зрілість, цифрова економіка.

Рис.: 2. **Табл.:** 4. **Формул:** 1. **Бібл.:** 9.

Денчик Ірина Сергіївна – старший викладач кафедри менеджменту, бізнесу та професійних комунікацій, Харківський національний університет імені В. Н. Каразіна (майдан Свободи, 4, Харків, 61022, Україна)

E-mail: denchikirina@gmail.com

ORCID: <https://orcid.org/0000-0003-1594-1084>

One of the main categories of economic science is the increase of economic efficiency, which is a key task of the socio-economic development of Ukraine. In modern business, the development of economic entities depends on a combination of various factors, among which the innovative activity of an enterprise, namely its level of innovative development, is of particular importance [1]. Timely implementation of innovations at an enterprise often determines its success, and an innovative approach to the implementation of an enterprise's strategy can be considered as a factor contributing to the efficiency of the results of production and economic activity. In this context, one of the most promising classifications of innovations is that of the Doblin consulting company, which includes ten types of innovations:

- 1) business model – a method of making a profit;
- 2) networks and alliances – cooperation with other companies for mutual benefit;
- 3) stimulating the production process – ways to support and encourage employees;
- 4) key processes – methods of creating and increasing the value of offers;
- 5) product presentation – ways to present the main products;
- 6) product mix – integration of different products;
- 7) services – pre-sales and after-sales customer service;
- 8) distribution channels – methods of bringing goods to the market;
- 9) brand – positioning of goods;
- 10) consumer experience – how customers feel when purchasing and using products.

In our opinion, for the modern development of Ukraine's economy, the following conditions are necessary to ensure the economic efficiency of enterprises in various industries and areas of activity of the country: availability of innovative (digital) potential, a sufficient level of innovative development, and high readiness to develop and implement a leader's strategy.

The purpose of the study is to improve the methodological approach to assessing the level of innovative development of an enterprise.

To achieve this goal, the following tasks were set:

- ✦ to develop an algorithm for assessing the level of innovative development of an enterprise;
- ✦ to clarify the concept of innovation potential and determine its structure, taking into account the digital transformation of the economy;
- ✦ to determine the indicators for assessing the innovation potential and the level of innovative development of the enterprise;

- ✦ to test the proposed methodological approach on the example of enterprises.

To solve the tasks set, the author used the methods of comparative and logical analysis, as well as the method of coefficients, which allowed substantiating the proposals within the framework of the methodological approach to assessing the level of innovative development of an enterprise. The hypothesis of the study is the assumption that it is necessary to apply a methodological approach based on the phased implementation of evaluation procedures and the use of appropriate evaluation methods at each stage [7].

The topic of innovative business development and assessment of innovative potential is relevant for the modern economy, which is rapidly developing under the influence of digital technologies. In the scientific literature, there is considerable interest in assessing and managing the innovative potential of enterprises. In particular, Yepifanova, I. Yu., Hladka D. O. consider innovation potential as a critical factor of economic growth, which consists of a set of resources and organizational mechanisms that promote the innovative development of enterprises in the context of market changes [1].

Foreign researchers are also exploring various methods of increasing the innovation potential of enterprises. For example, Bierwiazzonek, Gawron, Pyka, and Suchacka emphasize the need to create “innovation places” that stimulate creativity and contribute to the formation of competitive markets. Their research shows that a favorable environment for innovation has a positive impact on the economic development of enterprises [4].

Other scholars, such as Glado and co-authors, study the issue of innovation development through the prism of civil law aspects and argue that improving the process of contracting for engineering services can be an important factor in ensuring economic growth in Ukraine [5]. Idris and Durmusoglu focus on innovation management standards that help enterprises structure their innovation management processes, thereby ensuring stability in a rapidly changing market environment [6].

In addition, studies by Kryshtanovych, Petrovskyi, and others emphasize that innovation potential management should include elements of social security, which allows integration of innovative practices into the broader social context and increasing their effectiveness at the business level [7]. Other works focus on corporate culture (Lorincová, Miklošik, and Hitka), which plays a significant role in ensuring the long-term development of enterprises, especially small and medium-sized businesses, thereby contributing to economic development at the local level [8].

Given the reviewed works, it can be stated that there is insufficient coverage of the topic of a comprehensive assessment of business innovation activity given digital transformation. The purpose of this paper is to develop a methodological approach that will allow a detailed assessment of the innovative development of enterprises in the context of the digital economy, taking into account management aspects and opportunities for optimizing business processes.

The innovative development of an enterprise should be considered only in the context of its field of

activity, which is suitable for innovation and demonstrates the positive effects of the implementation of innovative processes. Today, only 10% of Ukrainian enterprises can be considered innovatively active. Assessment of the level of innovative development of an enterprise involves several stages in a certain sequence, including assessment of the prospects for innovative development of the industry, assessment of the innovative potential of enterprises in the industry, assessment of the level of innovative activity, and determination of the type of innovation strategy of the enterprise (Fig. 1).

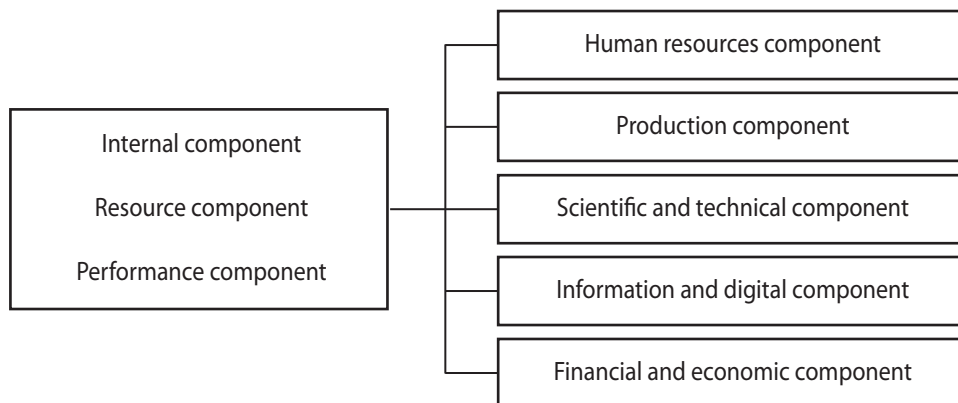


Fig. 1. Structure of the enterprise's innovation potential

Source: [3].

For each stage, appropriate assessment methods are used, such as the method of expert assessments (Delphi method) to assess the prospects for innovative development of the industry, the Innovation Scorecard method to assess the innovation potential and methods of assessing financial stability and ratios to assess the level of innovation activity [3].

The assessment of the potential for innovative development of enterprises in the industry is determined from two perspectives:

- ✦ readiness for strategic changes related to innovations (readiness to perform tasks aimed at achieving goals);
- ✦ availability of resources (all types of resources that can be used for innovation processes).

The structure of the potential for innovative development of an enterprise has three interrelated components (Fig. 1).

Thus, innovation potential can be viewed as a comprehensive assessment that reflects the level of enterprise resources in the areas of personnel, production, scientific and technical equipment, information and digital technologies, and finance, the effective use of which has a direct impact on its competitiveness in the process of innovation development. The increase in activity in the field of innovation and, accordingly,

the growth of the level of innovative development of enterprises is influenced by the factors presented in Fig. 2 [1].

This classification system allows us to identify the main components that have the greatest impact on the level of innovation development. In our opinion, these components include the first two categories (information and scientific, technical and educational), which are embodied in technological innovations [1].

Currently, industrial production and the service sector are the leaders in innovation activity in Ukraine. The share of Ukrainian organizations engaged in technological innovations is 10.6 % and 7.3 %, respectively, of the total number of organizations. In terms of the share of innovative goods and services in the total volume of goods shipped (work performed, services rendered), the service sector is in the lead, outstripping industrial production by almost two times – 15.5 % compared to 7.7 % (Table 1).

However, in Ukraine, the share of organizations implementing technological innovations in industry and services (0.2%) is much lower than in the European Union. Also, the share of new-to-market industrial products in the total volume of industrial output is only 0.05% (Table 2).

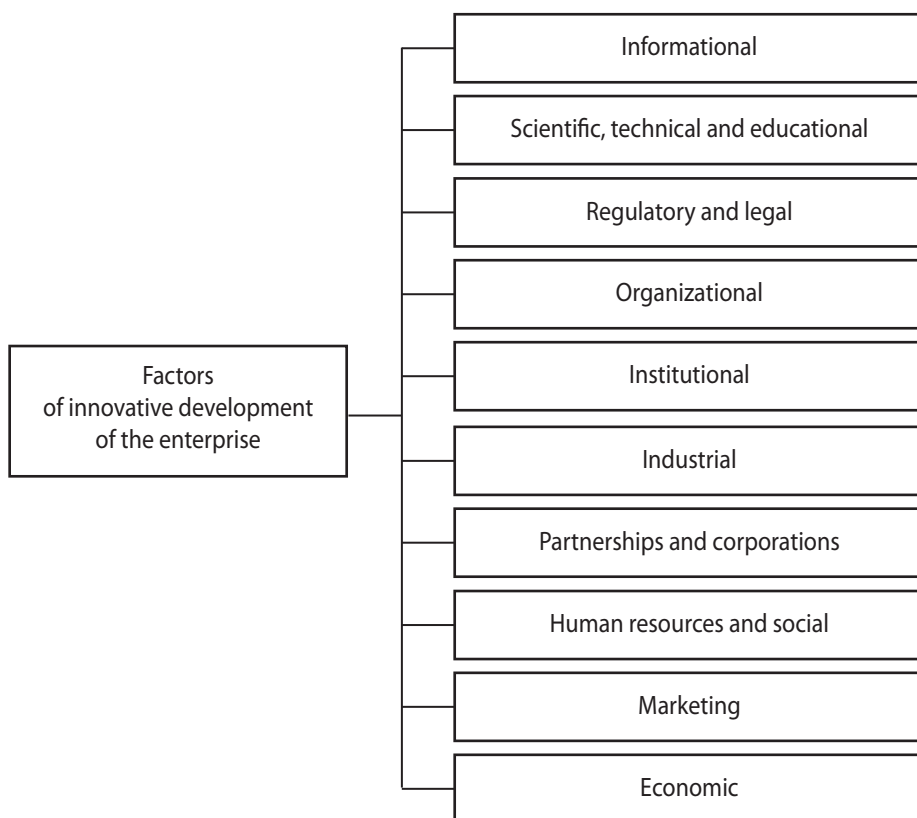


Fig. 2. Factors influencing the level of innovative development of an enterprise

Source: [1].

Table 1

Indicators of innovation activity in 2023

Indicators of innovation activity	Industrial production	Service sector	Agriculture	Construction
Share of organizations engaged in technological innovation in the total number of organizations, %	9,6	6,3	3,1	1,1
Volume and intensity of spending on technological innovations, %	1,7	10,6	1,0	0,2
Volume and share of innovative goods works, and services in the total volume of works and services performed, %	6,7	14,5	1,8	0,1

Source: compiled by the author.

Table 2

Comparison of countries' innovation activity by indicators

Country	Indicator	
	Share of organizations engaged in technological innovation in the total number of organizations (industry and services), %	Share of new-to-market industrial products in total industrial output, %
Ukraine	0,2	0,05
Germany	58,9	7,1
Sweden	48,0	18,7
Italy	40,4	27,2

Source: compiled by the author.

To assess the innovation activity of enterprises, various methods are used, including the calculation of relevant indicators.

It is proposed to use the following indicators as metrics of the innovation activity of an enterprise: quality of its innovation strategy and goals; degree of use of innovation potential; level of investment attraction; methods and criteria used in the implementation of innovative changes; compliance of the company's response to the nature of the competitive strategic situation; speed of development and implementation of innovation strategy; appropriateness of the realized

level of innovation activity. To determine the level of innovative development of an organization, it is proposed to calculate the "innovation index" using the R&D coefficient (k_1), the innovation activity coefficient (k_2), and the innovation profitability coefficient (k_3) according to the formula (1):

$$Ip = a_1k_1 + a_2k_2 + a_3k_3, \quad (1)$$

To assess the level of innovativeness of their enterprises abroad, the method of "Innovation Scorecard" is most often used, which consists of quantifying a set of factors that affect the innovative development of the enterprise [2]. Table 3 shows an example of calculating the Innovation Scorecard indicators.

Table 3

Innovation Scorecard system

Innovative indicators	Factor weight	Significance	Final weight	Innovation of the enterprise
Innovation process	0,85	0,35	0,248	0,673
Innovation strategy	0,50	0,30	0,090	
Resource provision	0,35	0,20	0,035	
Innovation structure	0,70	0,35	0,160	
Innovation culture	0,95	0,30	0,180	

Source: [2].

The Innovation Scorecard assessment is aimed at identifying the innovative potential of companies, which makes it possible to compare the level of "innovation" of different enterprises. The result of the Innovation Scorecard assessment is a rating score from zero to one, which reflects the innovative potential of the enterprise. This method allows one to make a qualitative assessment of the state of the company's innovation capabilities at a certain moment.

The innovative capabilities of an enterprise are closely related to its ability to ensure the production process, which is revealed through the analysis of financial stability. According to this method, there are two types of innovative potential of an enterprise: "leader" and 'follower'. It is worth noting that the disadvantage of this method of assessing innovation potential is that it ignores other components (human, scientific, technical, information, and digital). Such an assessment may not take into account situations where an enterprise is financially ready for innovation, but, for example, its staff does not have the necessary skills or is not sufficiently motivated [9].

An assessment of the company's innovation activity based on the financial statements can be made using the method of ratios and comparing the obtained values with the normative indicators. To do this, the following ratios are calculated: the level of intellectual

property, the number of personnel engaged in research and development (R&D), assets allocated to R&D, the introduction of new technologies, new products, and innovative growth.

These calculated indicators allow for assessing the current state of the enterprise and the results achieved in the field of innovation, which determines the strategy of innovation development used: the "leader" strategy (introduction of completely new products and services) or the "follower" strategy (adaptation of technologies for improvement).

The results of the assessment of the indicators of innovation activity of the enterprise are presented in Table 4.

The effectiveness of the innovation process and digital transformation of the economy should be viewed through the prism of governance, as a result of the quality of management decisions made and implemented. Assessing management effectiveness in the sectoral context involves evaluating the economic performance of both management decisions and projects (including innovation and IT projects). The innovative economy in the context of digitalization is based on information and opportunities provided by the Internet and information systems for business. In such conditions, it becomes important to improve approaches to assessing the economic performance of IT projects.

Assessing the level of innovation of an enterprise

Name of the indicator	Normative value	Calculated value	Note
Intellectual property coverage ratio	Not less than 0.1/0.15 - leader's strategy; no more than 0.05/0.09 - follower's strategy	0,30	Leader's strategy
Ratio of personnel engaged in R&D	Not less than 0.2/0.25 - leader's strategy; no more than 0.15/0.19 - follower's strategy	0,31	Leader's strategy
Ratio of property designated for R&D	Not less than 0.25/0.30 - leader's strategy; no more than 0.2/0.24 - follower's strategy	0,20	Follower's strategy
New equipment adoption rate	Not less than 0.35/0.4 - leader's strategy; no more than 0.3/0.34 - follower's strategy	0,38	Leader's strategy
New product introduction rate	Not less than 0.45/0.5 - leader's strategy; no more than 0.4/0.44 - follower's strategy	0,13	Follower's strategy
Coefficient of innovative growth	Not less than 0.55/0.6 - leader's strategy; no more than 0.5/0.54 - follower's strategy	1,00	Leader's strategy

Source: compiled by the author.

To evaluate the economic efficiency of an IT project, it is also advisable to use the Total Cost of Ownership method to estimate total costs. The most promising approaches to assessing the economic efficiency of innovation projects are the multi-criteria, option (with the method of real options) and fuzzy-set approaches.

CONCLUSIONS

The level of innovative development of an enterprise, which arises as a result of its innovative activity, can be considered as an indicator of the readiness of the economic system for digital transformation. Considered as a global innovation and a radical innovation, digital transformation opens up opportunities for digital upgrading of all business aspects that provide interfaces with customers. Further, the digital revolution uses digital technologies to achieve results through the implementation of innovative strategies and the creation of innovative products. The significance of innovative activities of enterprises is determined by the need for them to increase the competitiveness of companies. The conditions of the innovative economy make enterprises that are not focused on innovative development unable to survive, as they do not meet modern market requirements and cannot compete. Timely implementation of innovations at an enterprise often becomes a key success factor, and an innovative approach to the implementation of the enterprise strategy is a driver of increasing the efficiency of production and economic activities and a guarantee of survival in the face of modern systemic changes, challenges and threats. ■

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