# CHAPTER 4. ANALYTICAL SUPPORT FOR INNOVATIVE DEVELOPMENT OF BUSINESS ENTITIES

## METHODOLOGICAL APPROACHES TO THE ASSESSMENT OF INNOVATIVE BUSINESS DEVELOPMENT

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The continuation of military actions on the territory of Ukraine, further destruction of production facilities, infrastructure and residential buildings, as well as uncertainty about the duration of such a situation will hinder further development of the country's economy and lead to the delay of its active recovery.

At the same time, according to a Mastercard survey, more than 60% of Ukrainian entrepreneurs, despite the fever, continue their activity. More than 90% of those who were forced to stop the work in the country are ready to resume it. Their role in strengthening Ukraine's economy during the war is difficult to overestimate [1].

The survival of any enterprise, in the present conditions, is largely determined by its innovative activity.

Thus, according to the survey conducted by the Center for Innovations Development, the office for business and export development, the national project, 38,9% of the total number of entrepreneurs surveyed plan to develop and compete through technological innovations, and 20,9% using business innovations [1].

Today, innovation is the most effective means of technological recovery and development of enterprises, ensuring strong market positions based on significant competitive advantages. The success of the recovery of the economy, taking into account innovations, directly depends on the innovative activity of the business.

Significant are the results of studies of modern problems related to the innovative development of subjects of entrepreneurial activity by scientists such as V.V. Avilova, I.V. Afonin, A.D. Bobryshev, V.V. Burlakov, Yu.A. Doroshenko, O.V. Zheltenkov, O.P. Ivanova, A.E. Karlyk, G.L. Kostina, E.M. Ozhiganov, I.V. Rozdilska, L.T. Snitko, I.V. Somina, M.S. Starikova, V.M. Tumin, O.M. Chizhova, O.D. Shchetynin and others.

Unfortunately, most research is quite limited in nature. In the theoretical aspect, the problem of the development of innovative activity at the level of business entities has not been worked out sufficiently.

The problem today is the choice of methods for evaluating innovative development. As you know, the essence of the system for evaluating the effectiveness of innovative activity is to create the prerequisites and conditions for effective management of business development. Here, too, the presence of an informational and analytical base and appropriate methodological recommendations for making innovatively oriented management decisions play an important role.

The basis of such an information and analytical base should be a system of analytical indicators capable of providing an objective assessment of the real state of the innovative activity of the business entity under study.

At the same time, both industry-specific features of innovation processes, as well as the type of activity and stages of the enterprise's life cycle, should be taken into account. Information about the availability and efficiency of the use of resources of the economic entity involved in innovative activities is important.

To date, in our opinion, not enough attention has been paid to the problem of evaluating the innovative development of business entities. These questions were considered in the works of I.M. Dubinoi, O.V. Ermakova, E.E. Yermakova, Yu.I. Seliverstova, I.A. Slabinska, I.L. Tukkel, Yu.V. Yakovets et al.

Summarizing the information presented in the studied literary sources, the following should be noted.

As a result of the study of the theoretical foundations of innovative activity of the organization, it was established that the main categories of innovative activity are "innovation" and "innovation". These two concepts are similar, but not identical.

Yes, any innovation can be classified as an innovation, but not every innovation is an innovation. An innovation has a specific feature of change: the presence of a basic object, the change of which leads to the appearance of another, qualitatively new [2]. It becomes an innovation only after successful implementation and obtaining innovative value. A feature of innovation is the provision of additional value and benefit to society. [3].

In modern economic literature, both domestic and foreign, the interpretation of the concept of "innovation" is the subject of scientific discussions. Currently, there are two approaches to defining the concept of "innovation": process, according to which innovation is considered as a process, and object, where innovation denotes some object in the form of a final result [4].

Speaking about the interpretation of the concept of "innovative activity", it should be noted that the essence of this concept as an independent one is not disclosed by economists at all. If this definition is given, then it is related to the concept of "innovation" - either "innovation is a consequence of innovative activity" [5], or "innovative activity is an interconnected set of types of work on the creation and dissemination of innovations" [5].

At the same time, defining the essence of innovative activity is an important point. After all, the creation of innovations is the result of innovative activity as a process.

Summarizing what has been said, we suggest interpreting innovative activity as a process of developing new methods and technologies, followed by their use, which ensure a new level of satisfaction of public needs.

Then the innovation itself should be considered as the result of innovative activity in the form of a new product or service.

A deeper look at the essence of the specified categories will allow their classification, according to certain classification features.

H. Mensha is rightly recognized as the founder of the classification of innovations. According to his classification, all innovations can be grouped into three groups:

a) basic,

b) those that improve,

c) pseudo innovation.

At the same time, he singled out one criterion for such a grouping - the degree of radical innovation [6].

Other researchers, although more extended classifications are proposed, distinguishing, on average, from 5 to 7 classification features, but they are based on H. Mensch's typology. At the same time, due to the fact that researchers do not consider the types of innovative activity separately, the classification features of innovations are often combined, and sometimes duplicate the criteria of innovative activity.

We support the opinion of those scientists who propose to build a classification based on the division of the concepts "innovation" and "innovation activity" [6].

The study of the essence of innovative activity showed that its subjects can be both large enterprises and small and medium-sized businesses. In addition, this activity can be regulated both at the level of the territory and at the level of the industry. The sources of innovation financing are also different.

Thus, the criteria for assigning to one or another group of types of innovative activity should be those that characterize the very process of creation and commercialization of innovations. Namely - the field of activity of the enterprise; stages of its life cycle; sources and entities of financing.

Whereas for the classification of innovations, we consider more appropriate the criteria characterizing them precisely as the result of innovative activity. Such as - type of product; the purpose for which this product or service is created; duration of use; risk level.

The analysis of the terms "innovation", "innovative activity", consideration of classifications of innovations and types of innovative activity showed that one of the problems of this direction of research is the justification and selection of methods for evaluating innovative activity.

It should be noted that in modern conditions of economic development in the field of business there is a problem of insufficiently developed comprehensive approaches to evaluating the effectiveness of innovations. At the same time, it enables the business entity to take leading market positions both in the domestic market and at the international level.

In order to achieve its goal, the evaluation of the innovative activity of the enterprise should cover the exploitation of the introduced innovations as much as possible.

We believe that such an assessment should be allocated to a separate research direction. This will ensure not only the timely identification of problems in the implementation of innovative activities of the enterprise, but also will allow to eliminate them qualitatively.

We believe that the goals of evaluating the enterprise's innovative activity are mutually determined by the goals of the business entity's environment. The goals of counterparties, competitors, investors and authorities.

Taking into account this relationship during the assessment, it is possible to identify all factors that determine the effectiveness of innovative activity - both internal and external.

The conducted research showed that today, as in the case of the conceptual apparatus, there is no single approach to the assessment of innovative activity.

For example, R.A. Fathutdinov, singles out economic, ecological, scientific and technical and social effects. Highlighting as the main one - obtaining an economic

effect in which the enterprise increases the level of development of innovative activity, he attributes only a potential form to other types of effects [7].

Such researchers as S.D. Illenkova, L.M. Gohberg, S.Yu. Yagudin formulated the following effects: economic, scientific and technical, financial, resource, ecological and social. At the same time, all of them are attributed an equal effect [8].

G.Z. Susha [9] suggests using two economic approaches in carrying out the assessment. The first approach is presented in the form of such economic indicators as growth rates of manufactured products; economy of resources; profitability of the enterprise.

According to the second approach, the evaluation of the enterprise's innovative activity is characterized by an increase in the value of the enterprise.

Summarizing the above approaches, the following can be noted: firstly, the effects under consideration are not measured in the same quantities; and secondly, any combination of them needs to be quantified.

Assessment, being a tool for development and adoption of scientifically based management decisions, contributes both to the development of the enterprise itself and allows to identify possible prospects for its innovative development.

As the research showed, in theory and practice, the economic evaluation of innovative activity is most often used, which is a development of the methodology used in evaluating the effectiveness of investment projects.

As you know, the main goal of evaluating the effectiveness of an investment project is to identify the degree of compliance of the project with the goals and interests of its participants. It is used either when choosing project options.

This technique involves the use of both absolute and relative indicators, using both classical and alternative selection criteria.

Speaking about classical methods of evaluation, it should be noted that during their application, indicators can be determined that do not take into account the time value of money. This is the so-called accounting or statistical method. And indicators that take into account the value of money over time are an economic (discounting) method.

Let's consider them in more detail in relation to the assessment of the effectiveness of investment activities.

ROI, PP, ARR indicators are calculated as a result of the accounting (static) method. These are the most used indicators. They were applied even before the concept of cash flow discounting [10]. Their main drawback is the lack of research on the time value of money.

We consider it possible, from the indicated indicators, to calculate the profitability of innovative activity to use the indicator of return on investment investments (ROI), which is calculated as the ratio of net profit for a temporary period to the amount of initial investments in innovative activity (1):

$$ROI = \frac{P}{IC} \ , \qquad\qquad (1)$$

where: P is the net profit in the period, IC is the initial investment.

This indicator characterizes the ratio of the effect obtained from the innovation to the costs of its implementation. Its advantage is to obtain an estimate of the sum of all effects, not just short-term profit, and to adequately evaluate projects with different scales.

However, it can only be used for calculations of short-term projects. This is due to the fact that the indicators of this group do not take into account the time value of money. Thus, it is impossible to examine the likely differences if the project is implemented at different time intervals. Thus, long-term forecasting is subjective due to the impossibility of inflation forecasting. This fact is a shortcoming of the considered research method [11].

As a result of the study, a simple investment payback period (PP) can be determined - the period from the moment of implementation and release of an innovative product on the market to the moment of payback of costs. In other words, it shows the period during which the revenues from the innovative product being introduced will pay off the funds invested in it. This indicator is calculated according to formula (2):

$$PP = \frac{IC}{CF} \ , \qquad\qquad (2)$$

where: IC – initial investment, CF – cash flow.

Based on the calculation of this indicator, the possibility of introducing one or another innovation into production is determined. So, if the payback period turns out to be shorter than what was declared by the investors, then the innovation will be put into production, otherwise - not. In other words, in the process of choosing innovations, preference will be given to innovations with a shorter payback period [12].

The advantage of this indicator is the possibility to make an approximate assessment of investment risk with simple calculations.

At the same time, this indicator is optimal only for companies with a small cash flow, the choice of a normative payback period is subjective without taking into account the discount.

The next indicator of the method under consideration takes into account the efficiency of the invested funds, relating profit to costs - simple rate of return (ARR). A simple rate of return is a relative indicator of the effectiveness of innovative activity and shows a value equal to the ratio of the amount of cash flows to the initial amount of invested funds (3):

$$ARR = \frac{CF}{K_0},\qquad\qquad (3)$$

where: CF is the average annual cash flow from the sale of an innovative product, Ko is the initial investment.

As you can see, the considered indicators can be successfully used in the evaluation of innovative activity. Their indisputable advantage is the simplicity of calculating indicators.

With the help of the accounting method, it is possible to quickly forecast the profitability of innovative activities, taking into account the full duration of the project's life cycle. At the same time, its disadvantage is the lack of accounting for inflation, the risks associated with it, and the impossibility of distributing cash flows over time [13].

In addition, the indicators of this method do not take into account the possibility of managing innovative activities. All calculations are based on the initial assumption

that after the start of this activity, the environment in which the enterprise operates will remain unchanged.

Thus, the most expedient application of the accounting method will be in the evaluation of the innovative activity of business entities when implementing only effective and short-term innovative developments.

Based on the above, we consider it most expedient to use the economic (discount) method of evaluating the innovative activity of the enterprise in the assessment of innovative activity. It provides for the calculation of key indicators based on changes in the time value of money. The main advantages of this method are accounting for the inflation factor, the possibility of changing the interest rate, rate of return, etc. [14].

One of the indicators of this method is net discounted income (NPV), which allows you to submit the total amount of cash flows from an innovative product, taking into account time intervals. This indicator is calculated according to formula (4):

$$NPV = -CF_0 + \frac{CF_1}{1+RD} + \frac{CF_2}{(1+RD)^2} + \cdots + \frac{CF_n}{(1+RD)^n} , \qquad (4)$$

where: CF is the cash flow brought to a certain time interval; RD – discount rate; n is the number of time periods.

This indicator characterizes the ratio of income and expenses for the implementation of innovative activities, taking into account the time period

With a positive value of the net discounted income, the trend of the effect obtained from the introduction of the innovation is positive, and the level of its profitability is higher than the market discount rate. In addition, when adopting an innovation for implementation, the forecasting of the economic potential of the enterprise is taken into account. Otherwise, the introduced innovation is unprofitable.

In the case when the use of an innovative product did not bring additional profit, but paid off the costs associated with its development and use, the value of the net discounted income is zero.

The advantages of this indicator are the ability to estimate cost parameters during the implementation of innovative activities, taking into account the project's lifetime and the time factor. The disadvantage is the lack of an opportunity to evaluate non-

financial risks with its help. It does not allow taking into account project alternatives and requires long-term forecasting.

Based on the net discounted income indicator, the profitability index (PI) is determined. It is calculated as the ratio of net discounted income and initial investment (5):

$$PI = \frac{NPV}{IC} \quad ,$$

(5)

where: IC is the initial investment.

An innovation can be adopted into production if the profitability index has a value greater than one. And here it is considered that the amount of cash flows exceeds the initial ones. If the value of the indicator is equal to one, the innovative activity of the enterprise has a break-even trend. If this value is less than one, the innovative product is completely rejected.

It is safe to say that the profitability index shows the effectiveness of financial injections. It is convenient when choosing alternative options for innovative developments. During its calculation, an interest rate is used that takes risks into account. As a shortcoming of the indicator, it is possible to note the lack of assessment, with its help, of intangible risks and its sensitivity to the scale of innovations being implemented - it does not always provide a clear assessment of invested financial resources.

Alternative methods of evaluating the effectiveness of innovative activities include the calculation of the internal rate of return on investments (IRR) - the discount rate at which today's investments and the value of future cash flows during the implementation of innovative activities are equalized. With its help, you can determine the value of the future cash flow in relation to the initial invested funds.

This indicator is calculated as the interest rate at which the NPV will be zero and shows the maximum level of innovation costs. In other words, the internal rate of return on investments in innovative activity shows the value of the discount rate when the investor will be able to return the initially invested funds.

This indicator is calculated according to formula (6):

$$0 = CF_0 + \frac{CF_1}{1+x} + CF_2(1+x)^{-2} + \cdots + CF_n(1+x)^{-n}, \qquad (6)$$

where: IRR = x.

The necessary level of profit from the innovative activity of the enterprise depends on profitability risks and financial market trends.

If IRR<r, that is. the level of profit from innovative activity is lower than the rate of return on invested capital required by investors of innovative developments, the innovative product is rejected [15].

Comparing the indicators of net discounted income and rate of return, it should be noted that the first of them determines the absolute amount of profit, while the second - allows you to calculate the profit per unit of invested funds.

The use of this indicator makes it possible not only to calculate the stock of financial strength of the enterprise, but also to compare the introduced innovations.

The disadvantages of this indicator include, first of all, the fact that the calculation is carried out by the selection method, which leads to an inaccurate assessment compared to other indicators. In addition, non-financial innovation risks are not taken into account, and the income received involves the reinvestment of income at the IRR discount rate. In practice, if the discount rate exceeds the internal rate of return on investments, the results of calculations may be distorted. At the same time, this indicator characterizes the effectiveness of innovative activity.

The discounted payback period (DPP) also deserves attention. It can be used to calculate the payback period of an innovative product taking into account the discounted rate. Most economists recommend taking into account the temporal aspect when calculating it.

Formula (7) is used to determine the time period during which discounted income is compared with discounted costs by economists:

$$\sum_{t=1}^{n} CF_t \frac{1}{(1+r)^t} \geq IC \ , \qquad (7)$$

where: n is the number of periods; CFt – cash flow in period t; r – barrier rate (discounting factor); IC is the amount of initial investment in the zero period.

The indisputable advantage of this indicator is the accounting of liquidity and riskiness of the enterprise's innovative activity [16]. In addition, it facilitates calculations.

At the same time, it excludes the possibility of risk assessment. And this is more likely a disadvantage than an advantage.

Summarizing what has been said, we note that practitioners still give the greatest preference to classical methods, first of all, indicators of net reported income (NPV), profitability index (PI), internal rate of return (IRR), payback period taking into account the discount (DPP), return on investment (ROI), non-discounted payback period (PP), profitability index (ARR), which allows to evaluate the implementation of innovation from an economic point of view.

At the same time, a more reliable assessment of financial and cost parameters is provided by the economic approach.

In our opinion, the approach to the assessment of innovative business development proposed by V.E. Barkovskaya is interesting. [5]

Along with traditional statistical and discount methods, the scientist suggests using auditing methods to evaluate the effectiveness of innovative activities. Such as questionnaires, goal tree method, SWOT-analysis, SNW-analysis, PEST-analysis, expert evaluation method, scenario method, content analysis.

Based on the goals and content of the methods proposed by the scientist, we consider their consideration, in terms of their application to the evaluation of innovative activity, appropriate.

As you know, SWOT is a method of analysis in strategic planning, which consists in dividing factors and phenomena into four categories: strengths, weaknesses, opportunities, and threats.

The logic of the SWOT-analysis is to prepare the basis for the development of strategic actions for the development of strengths to realize the given opportunities, as well as for overcoming weaknesses and reducing the risks of threats.

With regard to innovative activity, the application of this method will allow to evaluate both the capabilities of the enterprise for the development and implementation

of innovation, as well as the conditions affecting the implementation of this type of activity. SWOT-analysis is a flexible tool, so it is suitable for evaluation in various areas.

The application of SWOT-analysis will be the most effective at the stage of substantiation of previous projects of technological documentation in innovative projects of high technologies for express diagnosis of the main problems of such projects.

Thus, this type of analysis should be considered as an intermediate link between the formulation of the enterprise's goal and the definition of development tasks by various innovative means.

The advantage of this method is an alternative selection of elements of analysis, taking into account the existing directions of innovative activity.

Disadvantages may include: belonging to descriptive methods; qualitative nature of the method and its subjectivity.

The PEST-analysis, like the SWOT-analysis, allows you to obtain an objective assessment of the situation and all the necessary information for making effective management decisions. However, the first of them deals only with the study of the influence of external factors, while the SWOT-analysis takes into account both external and internal aspects of the innovative activity of the enterprise.

PEST-analysis allows you to get an assessment of the interaction of a business entity with objective factors of the outside world. It helps identify threats before they turn into real problems, and areas of innovative activity that are risky, under the influence of external factors, for enterprises.

Thus, the PEST-analysis is appropriate in the process of making a decision about the feasibility of carrying out innovative activities by a business entity.

The advantages of this method are: reducing the potential risks of innovative activity and the possibility of researching its new directions. Failure to observe the regularity of conducting this type of research can be noted as shortcomings.

The SNW-analysis method (an acronym from the English Strength, Neutral, Weakness) is an analysis of the organization's strengths, neutrals, and weaknesses.

Usually, SNW-analysis is used for a deeper study of the internal environment of a business entity after carrying out a SWOT-analysis.

Its advantage is the fixation of the average market condition for each factor of the internal environment, which makes it possible to improve the company's strengths. Its lack of informativeness and lack of dynamism can be noted as a drawback [12].

The method of scenarios is a system thanks to which scenarios are developed, which allow to ensure the development of effective solutions in various situations, while reducing probable losses to a minimum.

Thus, this method provides for the consideration and accounting of several options for the development of alternative events as innovative activities of the enterprise as a whole, including the innovation being introduced, as well as the development of the market and the enterprise itself. This method forms optimistic, pessimistic and real scenarios, taking into account external and internal changes [17].

The disadvantage of the method is insufficient attention paid to the interdependence of the factors causing these changes. Taking into account the interaction of various aspects of the development of the situation can be considered as an advantage of the method.

Summarizing what has been said, we note that the experience of Ukrainian researchers in evaluating innovative business development comes down to the fact that it presupposes, firstly, the existence of a substantiated and scientifically verified system of indicators, and secondly, the availability of a statistical base.

In this regard, we consider it expedient to consider the possibilities of application in the assessment of innovative development of expert assessment methods, which was mentioned above.

As it became clear during the research, the method of expert evaluations during the assessment of innovative development is practically not used. At the same time, this approach makes it possible to integrate characteristics that reflect the most important aspects of innovative development. These are: and socio-economic conditions of innovative activity; and scientific and technical potential of the enterprise; and the quality of innovation policy carried out by management.

Given that innovative development can be characterized by elements of different composition and content, each of which has a certain independence and autonomy, its comprehensive characterization can be obtained only by their integrated unity. After all, the dysfunction of at least one of these characteristics makes the assessment of the whole population questionable.

As you know, expert evaluation methods are research methods involving experts and processing their opinions, later expressed in quantitative or qualitative form. Thanks to them, the collection, generalization and analysis of experts' opinions acquires the form most convenient for making an informed decision [18].

In our opinion, the application of expert evaluation methods in the evaluation of innovative development will allow solving two important tasks. First of all, it is the identification of factors that affect the effectiveness of innovative activity. And, in addition, determination of the weighting coefficients of the established criteria.

Thanks to the application of expert methods, the business management has the opportunity to forecast and predict changes in factors that are difficult to predict, which lead to innovative business development.

In practice, two methods of expert evaluations are distinguished: individual evaluations based on the use of the opinion of individual experts, independent of each other; and collective - based on the use of the collective opinion of experts.

Summarizing the studied information on this issue, we note the following. The factors to be evaluated are measured in one of three ways: ranking, paired comparison, and direct assessment.

The first of the methods - ranking - involves, based on the properties of the factor, their formation in ascending or descending order.

Ranking can be done in three ways. The first is a simple ranking method. In the course of its application, each expert is asked to arrange the features according to the determined preferences. According to the results of the study, the matrix (8) is formed:

| | 1 | 2 | ... | j | ... | m |
|---|---|---|---|---|---|---|
| 1 | $a_{11}$ | $a_{12}$ | ... | $a_{1j}$ | ... | $a_{1m}$ |
| 2 | $a_{21}$ | $a_{22}$ | ... | $a_{2j}$ | ... | $a_{2m}$ |
| ... | ... | ... | ... | ... | ... | ... |
| i | $a_{i1}$ | $a_{i2}$ | ... | $a_{ij}$ | ... | $a_{im}$ |
| ... | ... | ... | ... | ... | ... | ... |
| n | $1_{ni}$ | $a_{n2}$ | ... | $a_{nj}$ | ... | $a_{nm}$ |

(8)

where $a_{ij}$ is the expert's assessment of the feature. n is the number of factors, m is the number of experts.

Then $S_i$ is calculated - the average value of the importance of the feature. Thus, the most significant factor is selected from their entire set.

The second method is ranking using weighting factors ($a_{ij}$). In the course of its application, all factors are weighted in such a way that they add up to a fixed number (for example, 1). The most important, according to experts, is given a fixed value, and the less important - corresponding fractions of this value.

And the third method is a sequential comparison: the expert arranges all factors in order of decreasing importance; gives the first of them a value equal to 1; to the rest - gives weighting factors in fractions from 1 and compares the value of the first factor with the sum of all the following ones.

Unlike ranking, the method of paired comparison does not group all factors in descending or ascending order, but establishes preference or equality when comparing possible pairs.

A pairwise comparison is carried out when there is a large number of factors being studied, or in the case when there is a very small difference between them.

As in the first case, a composite matrix (9) is formed, the size of which is determined by the number of factors being studied.

| | 1 | 2 | ... | j | ... | n |
|---|---|---|---|---|---|---|
| 1 | $a_{11}$ | $a_{12}$ | ... | $a_{1j}$ | ... | $a_{1n}$ |
| 2 | $a_{21}$ | $a_{22}$ | ... | $a_{2j}$ | ... | $a_{2n}$ |
| ... | ... | ... | ... | ... | ... | ... |
| i | $a_{i1}$ | $a_{i2}$ | ... | $a_{ij}$ | ... | $a_{in}$ |
| ... | ... | ... | ... | ... | ... | ... |
| n | $1_{ni}$ | $a_{n2}$ | ... | $a_{nj}$ | ... | $a_{nn}$ |

(9)

Filling the matrix with elements $a_{ij}$ is carried out based on the previously determined filling scheme. As an option:

– 2, if factor i is better than object j (i > j);

– 1, if equality of factors is established (i = j);

– 0 if factor j is better than factor i (i < j).

If necessary, the method of direct assessment is used to determine the degree of significance of factors. At the same time, the range of changes in the factor's characteristics is divided into separate intervals, each of which is assigned a certain score, for example, from 0 to 10. That is why this method is called scoring. Various methods of mathematical statistics are used to analyze the received expert evaluations, which are combined depending on the task set during the research. Most often, among the possible methods of processing expert evaluations, the Elo rating system, the method of analyzing hierarchies, Conorce's paradox, Borda's rule, and others are used. Moreover, the result can consist of several algorithms that complement each other [18].

The indisputable advantage of these methods is their low cost and the possibility of quantitative assessment of qualitative factors. At the same time, their shortcomings include the need for highly qualified specialists, which is sometimes extremely difficult. And a certain subjectivism during the formation of conclusions based on the results of the analysis. The tree of goals is a structured model of goal setting based on a hierarchical principle. In other words, a goal tree is a method of goal setting and its division into tasks, the implementation of which leads to its achievement. A graphic diagram resembling a tree is obtained, at the head of which is a global goal. This model allows you to conveniently imagine all the goals of a person or organization. Unlike conventional planning, each stage on the tree leads to the next level and is associated with a specific intention.

The goal tree allows you to see the whole picture as a whole, and based on all identified options, make effective decisions about how strategic goals will be achieved. It allows: to identify bottlenecks; understand what to work on in the near future; decompose processes. Thus, this method is quite interesting in choosing possible optimal ways of development of both innovative activity and the enterprise as a whole.

It makes it possible to increase the efficiency of management by improving planning and control at the enterprise. However, this method is quite time-consuming and difficult to accurately determine the goals [19].

Content analysis is the analysis of arrays of homogeneous documents [20] In domestic practice, content analysis is defined as a quantitative analysis of texts

followed by the identification of numerical patterns contained in the text. This is a rather strict scientific method, which involves recording certain elements contained in documents, followed by quantitative processing of the obtained data. With the help of content analysis, the following are established: social orientations and establishing the creator of the text; values and norms replicated in documents, the effectiveness of their perception in different audiences.

The methodology of content analysis is quite fully described in the special scientific literature. However, it makes sense to dwell on some of its advantages and disadvantages. By processing large text arrays, it makes it possible to identify trends by comparing items belonging to different time periods. It accurately registers indicators; its results are objective and accurate. Content analysis creates a picture of the vision created in society with the help of mass media. Most often, content analysis is used to study the sociological and psychological aspects of mass communication.

At the same time, this is a rather time-consuming type of research, which causes certain difficulties when determining the type of analysis [21].

The last of the declared Barkovska V.E. methods are questionnaires. Questionnaires are the most common method of collecting information in science. With its help, the opinions of different respondents are studied and analyzed. Regarding the assessment of innovative activity, it may be about collecting and processing the opinions of potential consumers of certain innovative products or services in order to develop an appropriate management decision. Respondents fill out a questionnaire that contains questions of interest to the interviewer. To obtain qualitative and objective results, the questionnaire should be conducted by highly qualified specialists in this field [22].

The advantages of the method are a wide range of information and the possibility of its application in combination with other methods. The main drawback, as with the previous method considered by us, is its laboriousness. In addition, certain difficulties may arise when interpreting both questions and answers. As we can see, all proposed by Barkovskaya V.E. audit methods are quite simple, have a low cost and a fairly wide scope of application. At the same time, these methods are still rarely used in the

assessment of innovative business development. We believe that the above static and discounted approaches provide an objective assessment of the effectiveness of innovative activity. Whereas audit methods analyze more the influence of factors, while giving a subjective assessment. As can be seen from the above, most of the considered methods are more expedient to use in long-term forecasting. They are easy to calculate. At the same time, taking into account unstable economic relations, they cannot provide a sufficiently objective assessment.

Summarizing the results of the analysis of the studied scientific works on innovative business development, we note the following. Innovation is the result of scientific activity, the basis of which is an innovative product or service. It is the main source of profit and, as a result, a factor in increasing the competitiveness of the enterprise.

Innovative activity - the introduction of innovations into the main activity of a business entity in order to increase its efficiency. The study of domestic and foreign approaches to the assessment of innovative development showed that their main difference lies in the possibility of obtaining a decision on investment and financing with the determination of the payback period of the innovative project, with minimal risks for the enterprise.

On the other hand, the existing evaluation methods assume, mainly, the evaluation of financial injections. Which may not always be acceptable, especially for small businesses.

Taking into account the above, it is advisable to evaluate the innovative development in the form of calculating the most significant indicators that objectively reflect the innovative activity of the enterprise, which allow to substantiate the correctness of the chosen direction of the enterprise's development from the standpoint of its current state and the existing management system.

**References:**

1. S. Shulga What happens to business in wartime - Mastercard study [Electronic resource] Access mode: https://u.to/ezB0HA

2. Yu. O. Olvinska, O. V. Samotoyenkova, K. V. Vitkovska Current state and trends in the development of innovative activity in Ukraine. – Access mode: https://u.to/YjB0HA

3. Blank I. O. Investment management. - Kyiv: Nika Center: Elga, 2005. 448 p.

4. Veretenikova O.B. Sheina E.G. The essence and classification of innovations and innovative activity / [Electronic resource] - Access mode: http://surl.li/dvqqy

5. Barkovska V.E. Methodological aspects of evaluation of innovative activity of enterprises. Bulletin of the State Technical University. Series: Economy. 2020. No. 3. P. 27-34.

6. Butov A. M. Methodological basis of assessment of the investment attractiveness of the enterprise. Sustainable development of the economy: all-Ukrainian. science-production magazine. 2012. No. 6 (16). pp. 77–81.

7. Fatkhutdinov, R.A. Competitiveness: economy, strategy, management / R.A. Fatkhutdinov. - M.: INFRA-M, 2006. 403 p.

8. Mykhailova L.I., Gutorov O.I., Turchina S.G., Sharko I.O. M 69 Innovative management: education. Manual. View. 2nd, add. - Kyiv: Center for Educational Literature, 2015. - 234 p.

9. Susha, G.Z. Economic efficiency of the enterprise: theory and practice. Planning and Economic Department. 2013. No. 4. P. 54

10. Pidorycheva I.Yu. Innovative ecosystem in modern economic studies. Economy of industry. 2020. No. 2 (90). P. 54–92.

11. Chorna M. V. Formation of an effective investment policy of the enterprise: monograph. - Kharkiv: FOP Sheinin, 2010. - 210 p.

12. Holov R.S. Innovative and synergistic development of industrial organizations: theory and methodology - M.: Dashkov and K°, 2012. 419 p.

13. Chorna M. V. Assessment of the effectiveness of innovative activity of enterprises: monograph. - Kharkiv: KhDUHT, 2012. 210 p.

14. Sekerin V.D. Problems of innovation positioning. Issues of regional economics. 2013. Vol. 16, No. 3. P. 90-94

15. Shiryaev A.O. Criteria for general evaluation of the effectiveness of investment projects . Economic and mathematical modeling of socio-economic systems. 2007. No. 12.  pp. 95-100

17. Zagorodniy A. G. Strategic analysis of the competitiveness of innovative products. Bulletin of the Lviv Polytechnic National University. - Series "Management and entrepreneurship in Ukraine: stages of formation and problems of development". 2019. No. 647. P. 56-64

18. Susha, G.Z. Economic efficiency of the enterprise: theory and practice Planning and Economic Department. 2013. No. 4. P. 54

19. Sandu, I.S. State regulation of innovative activity at the regional level: problems and solutions. Bulletin of the Institute of Friendship of Peoples of the Caucasus "Economy and Management of People's Economy". 2010. Vol. 13.  No. 1. P. 28-31.

20. Pashiyan I.A. Content analysis as a research method: advantages and disadvantages [Electronic resource] - Access mode: http://surl.li/dvqve

21. Aleynikova O.V., Prytula N.M. Innovative and investment management. Tutorial. ─ Kyiv: University of Educational Management, 2016. 614 p.

22. Kovalchuk S.V. Innovative paradigm of formation of economic strategy of enterprises: monograph – Khmelnytskyi: KhNU, 2019. 199 p.