CHAPTER
MANAGEMENT OF INNOVATIVE ACTIVITIES OF ENTERPRISES TAKING INTO ACCOUNT THE WAR PERIOD

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Summary

The materials of the study consider the main theoretical provisions and practical proposals on the essence and process of managing innovative activities in the conditions of modern military realities. The achieved goal of the work is to generalize theoretical concepts, determine the role and place of innovative activities in the development of the enterprise, as well as provide practical proposals for improving the process of managing the effectiveness of innovative activities at the enterprise, proposals are formed taking into account the use of startups projects . The main issues considered and presented in the study are as follows. The substantive essence of the concept of innovative activity is analyzed, a sequence of stages and main functions of its management is formed, the features and list of types of effects that are the result of innovative activity are revealed. The military challenges that affect the innovative activity of enterprises and the strategic traps that accompany it during wartime are specified. Based on multidimensional cluster analysis, three clusters of regions of Ukraine are formed and recommendations are given for the activation of innovative activity. The proposed theoretical provisions are taken into account in the practical recommendations of a real machine-building enterprise, proposals for improving the management of its innovative activity are formed on the basis of the main identified criteria for the quality of innovative activity. Improved proposals for organizing the work of startup specialists as a modern direction for improving the management of innovative activity of enterprises during wartime are presented.

Introduction

In modern business conditions, characterized by martial law, the presence of management traps, management needs adequate mechanisms for responding to dynamic changes in the external environment, consumer needs , which are constantly transforming. Most managers and owners of enterprises change value orientations from survival in the market to the development of enterprises, which involves a clear definition of goals, setting priorities,

determining the directions of life. However, the imperfection of existing methods and processes of enterprise management, the lack of a targeted direction for solving current and strategic tasks, taking into account the influence of wartime factors, significantly limits the existing prerequisites for development. The predominant direction that can ensure the development of enterprises during military operations is innovation, the use of breakthrough innovation projects , startups innovative projects .

Enterprises that do not realize the importance of implementing innovations usually lose their competitive niche, since innovations can provide them with sufficient competitive advantages, create conditions for strengthening market positions and sustainable development even during military operations and post-war reconstruction. For the success of innovative development, it is necessary to use management methods adequate to the situations.

The problems of innovation management in modern theory and practice are given a lot of attention. In particular, the conceptual foundations of innovation under modern conditions are studied quite thoroughly by well-known domestic and foreign scientists, such as [1–28].

However, despite the significant attention of scientists to innovative development, there is still ambiguity regarding the interpretation of the concept of innovation. This, in turn, creates problems in the study of innovation management and the unanimous interpretation of research results.

In this context, the purpose of the work is to generalize theoretical concepts, determine the role and place of innovation in the development of an enterprise, as well as provide practical suggestions for improving the process of managing the effectiveness of innovation activity at an enterprise, taking into account the use of startups. projects ..

The object of the work is the process of managing the effectiveness of innovation activities at enterprises.

The subject of the study is the theoretical aspects and methodological principles of managing the efficiency of innovative activities of enterprises.

To achieve the set goal of the scientific work, the following tasks were solved:

– to analyze the economic essence of innovative activity as the main term of the study;

– to determine the features of managing innovative activities in wartime;

– to investigate the existing methodological support in managing the innovative activities of the enterprise.

– provide proposals for improving the process of managing the efficiency of the enterprise's innovative activities;

– to note the advantages and features of a startup projects , organization of the work of their developers.

The following methods were used to conduct the research: system analysis, method of theoretical generalization, analysis and synthesis, structural-logical, comparative analysis, multidimensional cluster analysis, additive convolution method, economic-statistical, expert survey, graphic.

1. Theoretical support for the management of innovative activities at the enterprise

The competitiveness of the market environment in Ukraine plays an important role in the implementation of innovation processes at enterprises. Scientific and technological progress determines the main aspects of the functioning of business entities. In case of insufficient attention to innovation, the enterprise may reduce its market segment and suffer significant financial losses. It is important to clearly formulate the terminology of this type of activity, because it provides a clear understanding and its correct use in the future.

Studying scientific works devoted to the issues of innovative activity of enterprises, it can be concluded that both in the world and in domestic practice there is no unity in defining the content of the concept of "innovative activity". The review of the main theoretical approaches to defining concepts is characterized by ramification. Regarding innovative activity, most authors define it through the term "activity", namely as an activity aimed at using the commercialization of the results of scientific research and development and leading to the release of new competitive goods and services to the market [1–3]. Other sources and authors [4–6] suggest explaining innovative activity through certain measures, that is, as a set of measures aimed at creating, implementing, disseminating and implementing innovations in order to obtain a commercial and or social effect, which are carried out through the implementation of investments made in objects of innovative activity. In addition, an important explanation of the essence of innovative activity is the concept of a system - a systemic type of activity aimed at creating and implementing innovations [7–8]. This emphasizes the interdependence of the elements of innovation activity and its joint use, which allows to obtain new qualities in the process of using innovation activity. Also an important explanation of innovation activity in the war period is the activity nature, which unites certain actions for the generation and acquisition of innovations [9–10], namely – all scientific, technological, organizational, financial, commercial actions that actually lead to the implementation of innovations, or are conceived for this purpose. In addition, since there are quite a lot of such actions in innovation activity, there are proposals for its explanation through the term process [11–12] – the process of strategic marketing, R&D, organizational and technological preparation of production, production and registration of innovations, their implementation and commercial implementation on the

market in order to make a profit, spread to other areas or the process of creating, implementing and disseminating innovations.

Systematization of approaches to defining the content of innovative activity showed that there is no single opinion among the authors regarding the essence of innovative activity, since it is considered as: activity; event; action; development and implementation; achievement of a state; method; system; process; work; types of work. However, it is advisable to combine all these concepts, which will expand the understanding of innovative activity.

Implementation of innovative activity should take place in several stages that will allow the enterprise to achieve the desired result with minimal costs and losses. The stages that the enterprise will go through from the beginning to the end of the innovation project should be logically connected and form a complex system of connections [4]. So, we can name the main stages that the enterprise must go through when implementing innovative activity, which constitute the process of its management based on the unification of the main functions of innovation management. Namely, these are such stages and functions as: planning of innovative activity (determination of the goal and objectives of innovative activity based on current and long-term plans for the development of the enterprise, marketing and financial strategies; analysis of the external and internal environment of the enterprise; market analysis, analysis of opportunities and threats, risk analysis; selection of the optimal alternative; specification of the innovation program, planning of technical, economic and financial areas of work); organization of innovative activity (selection of instruments for implementing innovative activity, determination of sources of financing and their structure); control of innovation activity: (comparison of achieved results with planned ones (control of finances, technical and qualitative characteristics, etc.); motivation of innovation activity: (use of incentives to optimize the innovation process); assessment of the effectiveness and planning of the prospects of innovation activity.

In accordance with the above stages and functions, if, according to the results of the assessment, management is not satisfied with the level of effectiveness of innovation activities, it is necessary to return to the first stage and start the process of managing innovation activities again from the first stage.

In the process of managing innovative activities, it is advisable to pay attention to the benefits that may accompany it, the effects. As a result of the analysis of literary sources, it can be noted that most scientists [7–9] distinguish four types of effects from the implementation of effective innovative activities: economic, scientific and technical, environmental, social.

Direct economic results from innovation activities are related to scientific, technical and social effects. In turn, the environmental effect arises only as a consequence of scientific and technical progress, and therefore indirectly affects the economic effect from innovation activities [12].

The social effect of innovative activity, contributing to the development of society and satisfying its needs, is manifested, first of all, in achieving a qualitatively new standard of living for the population, increasing the level of education and creating new intangible values, and is assessed mainly by qualitative indicators. Although it is difficult to assess the social effect, its individual components can be assessed in value through calculations of indicators of the level and way of life, health and longevity of society, etc. [11].

Environmental assessment takes into account the impact of innovations on solving environmental problems. The environmental effect is assessed using a system of relative indicators that characterize: reduction of industrial emissions into the atmosphere, water, soil; reduction of production waste and the possibility of its secondary processing; improvement of the environmental friendliness of manufactured products; improvement of the ergonomics of goods (level of noise, vibration, electromagnetic radiation); increased responsibility and reduction of fines for violation of environmental legislation and other regulatory documents, etc. [8].

The scientific and technical effect consists in the increase in practically oriented (applied) scientific and technical knowledge and skills [6].

The economic effect of innovative activity is assessed by a system of cost indicators and is manifested in increasing the economic efficiency of the enterprise, rational use of resources, increasing profits from product sales, and improving the use of production capacities [10].

The basic approach to assessing the effectiveness of innovation activity is the performance approach, because the final result of the activity is to obtain excess profit from the implementation of innovations. It is advisable to define efficiency as achieving the maximum possible result from the creation, implementation and commercialization of scientific developments (innovation result) [12].

A more clearly methodical approach, which is aimed at the result, can be reflected using the formula given below (1):

$$ЕФ_{iд} = f(Рез_{iд}) \rightarrow max, \quad (1)$$

where $ЕФ_{ІД}$ is the efficiency of innovation activity;

$РЕЗ_{ІД}$ is the level of effectiveness of the enterprise's innovation activity.

Innovation is a long-term process, so an integral element of assessing its effectiveness is the static-dynamic approach. At the production stage, the effectiveness of innovation is static, and when entering the market - dynamic. The static approach is aimed at calculating annual, short-term indicators of relative economic efficiency. Along with the effective approach, a target approach is used – determining efficiency in accordance with the goals set by the enterprise (obtaining excess profit from the implementation of innovations, gaining competitive advantages, etc.) and the degree of their achievement [8].

Given the complexity, multi-stage nature and capital intensity of innovative activities, there is a need to apply a cost approach, the essence of which is to determine efficiency based on the costs incurred in achieving the set results.

Modern enterprises assess the effectiveness of innovation activities based on a comprehensive approach, which includes effective, target, cost, and static-dynamic approaches (Table 1).

A comprehensive approach to assessing the effectiveness of innovative activity allows solving the following tasks: assessing the final result of innovative activity (according to the effective approach); assessing the degree of achievement of the enterprise's goals (according to the target approach); assessing the effectiveness of spending on achieving the final result of innovative activity, taking into account its complexity, duration and dynamism (based on the cost and static-dynamic approaches, respectively) [4].

In wartime conditions, it is advisable to strive not only for maximizing economic efficiency, but also for security, which can be achieved on the basis of an integrated approach (Table 1).

Table 1

A comprehensive approach to assessing the effectiveness of innovation activities

Features of innovative activity	Component of a comprehensive approach	Meaningful reflection of a comprehensive approach
Variant distribution of obtaining the result	A productive approach Targeted approach	The ratio of the current level of profit from innovation activities to the planned (max) level of profit
Target orientation (obtaining maximum profit)		
High capital intensity	Cost-effective approach	The ratio of profit from innovation activity to the costs of implementing innovation activity
Significant duration of the innovation process		
Dualistic nature of obtaining results over time (development of innovation in the market)	Static-dynamic approach	The ratio of results and costs of innovation activities taking into account the time factor

Source: generalized based on [11]

The advantage of this approach is that it reflects the degree of hierarchy of each approach, which can simultaneously act as necessary conditions for determining the effectiveness of innovation activities .

Based on the approaches taken into account in the integrated approach, a system of indicators for assessing the effectiveness of innovative activity is formed. This issue was addressed by domestic scientists [1; 2], a certain system

of indicators for assessing the effectiveness of innovative activity of an enterprise was defined, which include:

- indicators of production efficiency of scientific and technical activities,
- indicators of financial efficiency of scientific and technical activities,
- indicators of investment efficiency of scientific and technical activities.

Summing up the first section, it should be noted that innovation and the effectiveness of innovation are a complex phenomenon in the activities of enterprises.

Based on the analysis of the definition of the concept of "innovative activity" and the analysis of approaches to the definition of "efficiency", as a result of the synthesis, the author's interpretation of the concept of the efficiency of innovative activity will be provided.

Thus, the effectiveness of innovation activity is the achievement of the enterprise's goals regarding the maximum possible result from the creation, implementation and commercialization of the results of innovation activity and/or scientific developments, while rationalizing the enterprise's available resources.

An analysis of the stages by which the management of the innovative activities of the enterprise should take place has been carried out. The stages that the enterprise will go through from the beginning to the end of the innovative activities, that is, in the management process, should be logically connected and form a complex system of connections. This will allow the enterprise to achieve the desired result with minimal costs and losses, which is especially important in wartime conditions.

were analyzed , namely environmental, economic, social, and scientific and technical. A description was provided for each type of effect.

Approaches to assessing the effectiveness of innovation activities are summarized.

A comprehensive approach was proposed, according to which enterprises assess the effectiveness of innovative activities based on a comprehensive approach, which includes effective, target, cost, and static-dynamic approaches.

Analyzing the comprehensive approach, the features of innovative activity and their meaningful reflection for each of the components of the comprehensive approach were reflected. The feasibility of implementing and using a comprehensive approach, which is a synthesis of the effective, target, cost and static-dynamic approaches, in assessing the effectiveness of innovative activity was substantiated.

The conditions that can simultaneously serve as conditions of sufficiency and necessity for effective innovation activity were presented in the form of a diagram. The following provisions were included in such conditions:

- 100% effectiveness of innovation activities;

– compliance with the company's goals;

– justification of the costs incurred by the enterprise for innovation activities.

A modern toolkit was identified to assess the effectiveness of innovation activities at the enterprise. As a result, indicators for assessing the effectiveness of innovation activities were systematized.

Section 2. State of innovation activity of industrial enterprises in Ukraine

In the modern economy, the role of innovation has increased significantly. This is due to the fact that innovation is a weapon of competition, because innovation leads to a decrease in cost, a decrease in prices, an increase in profits, the creation of new needs, an inflow of money, an increase in the image (rating) of the manufacturer of new products, the opening and capture of new markets, including external ones. However, even in wartime conditions, the course of innovation activity and its management face problems that need to be solved. This is emphasized in the work [13, p.p. 269–270] regarding military challenges:

– in the process of innovation management and strategy development, an active position was mostly taken by owners, who until then had mainly transferred their powers to hired top managers;

– enterprises are relocating and changing their activities in accordance with market needs, which complicates the process of strategizing , since in accordance with military needs, strategizing began to spread to non-traditional activities for enterprises and types of products and services, production of products for the military;

– in strategizing, there was a need to take into account and foresee the safety of production, management, personnel at workplaces, and logistics transportation, i.e., security strategies increased their significance and were formed as separate conditions for the development of enterprises;

– Enterprise development strategies are transformed into strategies for their adaptation to military challenges and rapid response to changing situations;

– proving the success of strategies used in the process of conducting military operations is transferred to the management of enterprises in non-military industry - the use of distributed leadership, under which subordinates are given the authority to act in circumstances that may change, to use resources in accordance with the situation, deviating from strategic guidelines;

Artificial intelligence participates in the decision-making process, which can partially replace specialists, which is used as an experiment in Agencies and advanced defense research US projects ;

Due to the workload of challenges on employees, it is advisable to use work – war in the strategy process. balance , which involves the use of hybrid

and flexible employment, which reduces burnout at work, increasing the specificity, clarity and instrumentality of tasks, and using the military experience of war veterans at work, which together contributes to maintaining mental health.

Also, certain difficulties for the activation of innovative activities are caused by strategic traps [13, pp. 271–272]:

Their types include cognitive, informational, and managerial. Cognitive traps, which are mainly caused by emotional circumstances, consist of the following:

– excessive self-confidence regarding the accuracy of forecasting, failure to take into account factors influencing efficiency indicators that need to be taken into account in the discount factor, inaccurate assessment of competitors due to the use of economic and mathematical methods inadequate to the subject and object;

– local optimization of employees regarding exaggeration of their own importance in the strategy process and consideration of employees of other departments and areas as competitors or enemies;

– constant expectation of a threat to the business or excessive caution, which leads to ignoring necessary changes while everything is fine at the enterprise;

– inert behavior towards the introduction of innovations, which confirms the appropriateness of formed ideas and neglect of information about alternative behavior;

– imitating outstanding managers and entrepreneurs in the process of making strategic decisions and adhering to the opinions of authorities - consultants and practitioners.

Along with cognitive traps in strategizing , there are information traps, since management decisions are mainly rational. Information traps are characterized by an overdose of information, its insufficiency, overload; anchoring , that is, clinging to the first information that managers have acquired, confirmation of evidence, sunk costs. In management, it is necessary to use concentrated, reliable , substantiated, objective and systematized information .

Management traps include:

- misunderstanding of the essence of the enterprise's strategy;
- mistaken focus on ambitious, unfounded goals;
- the formation and use of a multitude of uncoordinated functional and operational strategies that cannot replace a single corporate strategy;
- special unjustified reduction of quantitative indicators of goals;
- the opinion about the temporary nature of managers' tenure with a decrease in their responsibility for the results of the enterprise's work;
- the use of competitive strategizing , which consists in actively fighting against many competitors in many areas or against the strongest competitors;

- the application of competitive irrationality, which consists in the social irrationality of the perception of oneself and one's social status.
- highlighted by the author of the work [13, pp. 269–272] require a solution based on the application of economic-mathematical methods, such as multivariate analysis, which is provided in this study.

The desire of enterprises to make a profit determines the need to carry out various types of activities, among which one of the most important and risky is innovation. The implementation of innovation activities determines the appearance of certain results that characterize the effectiveness of its implementation. At the same time, the effectiveness of any activity depends largely on the effectiveness of its management. That is why it is quite important to determine the effectiveness of management of innovation activities in order to attract additional financial resources and identify areas for increasing the effectiveness of its implementation [12].

The most recognized and effective organizational form of developing competitive business in the innovation sphere in recent years is the association of innovation entities into regional innovation clusters (industrial companies, research centers, scientific institutions, government agencies, etc.) based on the territorial concentration of networks of specialized suppliers, major producers and consumers, interconnected by a technological chain [1]. We are talking, first of all, about an innovation cluster, which, through the interaction of its participants and the development of competition, contributes to the dynamic socio-economic development of the territory or group of territories in which it is located, and increases their viability. In such an interpretation of a cluster, the opinion that it is a center of the most effective and interconnected types of economic activity, a set of interdependent groups of enterprises that successfully function and form the golden section of the entire economic system of the state and ensure competitive positions in the national and world markets is justified. In turn, regions can also be combined into clusters if they are grouped based on the results of multidimensional cluster analysis. In addition, in agreement with the opinion expressed in [1], it is important to emphasize that the organization of clusters should be viewed not in a narrowly sectoral aspect, but more broadly – as an association of enterprises belonging to different industries, but working together to create and implement innovations.

Objective conditions for positive changes in economic development have been formed in Ukraine. The application of the cluster approach in the country is a necessary basis for the revival of domestic production, increasing the efficiency of innovative development of regions, and achieving a high level and competitiveness of the economy [8].

A significant advantage of cluster analysis is that it allows the distribution of objects not by one parameter, but by a whole set of features. In addition, cluster analysis, unlike most mathematical and statistical methods, does not impose

any restrictions on the type of objects under consideration and allows you to consider a variety of source data of almost arbitrary nature [2].

This is of great importance, for example, for predicting the situation of innovative development of regions, if the indicators have different sizes, different scales and different units of measurement, which makes it difficult to apply traditional econometric approaches.

Having considered the main features of the mechanism for implementing innovative activities by enterprises, a cluster analysis of regions was conducted regarding the number of innovatively active enterprises in Ukraine in 2025.

The agglomerative hierarchical clustering method was used to classify the regions of Ukraine. Ward using Euclidean distance, which is one of the most widely used metrics in cluster analysis, as it corresponds to intuitive ideas about proximity and its quadratic form corresponds to classical statistical constructs. Initial data for cluster analysis of regions of Ukraine in 2025

Using the Euclidean distance metric, a symmetric distance matrix was obtained, which is the basis for cluster analysis.

As a result of applying Ward's agglomerative hierarchical method, a dendrogram was obtained – a tree of cluster associations with regions of Ukraine on the vertical axis and a distance scale on the horizontal axis.

In Statistica 12.0 software In the dendrogram, regions are grouped into clusters based on innovativeness. If we conditionally “cut” the dendrogram at level 100 (as an empirical tool), we will obtain three clusters (regions of Ukraine by the number of innovatively active industrial enterprises).

The first cluster included 15 regions: Vinnytsia, Donetsk, Poltava, Cherkasy, Odesa, Ternopil, Zhytomyr, Mykolaiv, Rivne, Ivano-Frankivsk, Kirovohrad, Sumy, Zaporizhia, Lviv, Kyiv regions.

The second cluster included 7 regions: Volyn, Chernihiv, Kherson, Zakarpattia, Khmelnytskyi, Chernivtsi, and Luhansk regions.

The third cluster includes 3 regions: Dnipropetrovsk, Kharkiv regions and the city of Kyiv.

According to the results of the analysis, we can say that the first cluster turned out to be the largest cluster and it can be attributed to the average level in terms of the regional number of innovatively active industrial enterprises.

The second cluster is the next cluster in terms of the number of regions. This cluster can be attributed to the low level in terms of the regional number of innovatively active industrial enterprises.

The third cluster is the smallest cluster in terms of the number of regions. It should be noted that this cluster should be attributed to a high level in terms of the regional number of innovatively active industrial enterprises.

For the second cluster, it is necessary to increase the number of innovatively active industrial enterprises, thereby using the strategies of innovative development of regions that are used for innovatively active industrial

enterprises in other regions. That is, it is necessary to increase the number of enterprises that will carry out innovative activities in this cluster.

For the first cluster, it is necessary to increase the number of innovatively active industrial enterprises, using the practical experience of enterprises included in the third cluster. To introduce innovative activities at industrial enterprises, to apply innovative models of development of industrial enterprises, to implement strategies for conducting activities that will increase the number of innovatively active industrial enterprises.

For the third cluster, it is necessary to introduce innovations, innovative development and innovative activity at industrial enterprises. For enterprises that are already innovatively active, it is necessary to continue to introduce and improve processes at enterprises.

At the current stage of development of the Ukrainian economy, ensuring the effective functioning of enterprises requires constant improvement of the competitiveness of their products and processes, optimal use of production potential, and flexible response to changes in the external environment.

A cluster analysis of the innovative activity of enterprises in 2025 by regions of Ukraine based on the number of innovatively active industrial enterprises allowed us to identify 3 clusters. For each cluster, the number of regions included in one cluster was determined. According to the results of the cluster analysis, the following clusters were identified: the largest, medium and smallest. For each cluster, proposals were made to improve the management of innovative activities and a brief description was provided.

3. Organization of measures to improve the process of managing the innovative activities of the enterprise

Innovative activity in modern conditions is of great importance, because it contributes to the development of enterprises, increasing the efficiency of their resource potential, ensuring the stability of functioning in the market and the compliance of its work with market requirements [12].

Due to the fact that in modern conditions it is much more difficult for enterprises to carry out their activities due to the spread of hostilities, enterprises lose a fairly large part of the market, consumers and, accordingly, a large share of profits.

To minimize these costs, enterprises need to quickly adapt to changes in the external environment and focus their actions on increasing innovation and development.

The problems of managing innovation activities at enterprises that want to be competitive in the current conditions are coming to the fore. It is much more difficult to cope with them for large enterprises that have long been established on the market, since innovation activities involve processes that cannot always be clearly described and procedurally measured, since it is about creating a

development model that helps all mechanisms of the enterprise to improve their activities.

In such conditions, enterprises need to conduct a comprehensive assessment of the effectiveness of innovative activities. This is due to the fact that high-quality management decisions are possible only if they are made based on the results of assessing the effectiveness of innovative activities and identifying "bottlenecks" and areas for further work in the field of innovative activities, which will allow significantly increasing the level of the enterprise and showing rapid growth in financial indicators and the enterprise as a whole.

Using the example of LLC "VK Hermes Bud", it was investigated how it is possible to activate and ensure the effectiveness of innovative activities at the enterprise.

In the implementation of innovations, all aspects and areas in which innovative activities take place are important, ranging from aspects such as marketing to ecology.

Due to the fact that the main type of economic activity of the enterprise is mechanical processing of metal products, one of the key areas is: environmental and technological.

It is considered appropriate for an enterprise to consider five areas of innovation activity.

Among these five areas, we highlight the following, according to the owners and top managers:

- technological;
- ecological;
- marketing;
- investment;
- organizational.

The next step is to identify responsible executors who will analyze each area.

At this stage, it is necessary to identify the executors who will carry out the analysis internally within the enterprise.

To do this, it is necessary to form a team that will include management employees, namely, these will include such positions as: director; accountant; marketing economist; head of the commercial department; head of the production department.

The enterprise LLC "VK Hermes Bud" is recommended to carry out an analysis according to the main stages and functions of innovation management, presented in section 1 of this work. There are 6 stages in total: planning, organization, motivation, control, and the last level should be considered as an assessment of the effectiveness of innovation activities, since it directly depends on the previous stages.

In order to determine which of the performers will be responsible for a certain stage of the analysis, it is necessary to form Table 2.

Table 2

Distribution of performers by stages and duration of analysis

Stage name	Duration of execution, days	Performers
Goal setting	3	Director, accountant
Task definition	2	Director
Environmental analysis	3	Marketer-Economist
Internal environment analysis	3	Marketer-Economist
Market analysis, opportunities and threats	6	Head of Commercial Department, marketing economist
Choosing the optimal alternative	5	Director, accountant, head of commercial department
Specification of the innovation program, planning of financial areas of work	9	Director, accountant, marketing economist, head of commercial department
Selection of tools for implementing innovative activities, sources of financing and setting deadlines	14	Accountant, marketing economist
Recruitment, distribution of functional responsibilities	5	Director
Setting milestones and allocating finances	3	Director, accountant
Using incentives to optimize the process	3	Head of Production Department, Head of Commercial Department
Comparison of achieved results with planned ones	10	Director, accountant, marketing economist
Performance evaluation	17	Director Accountant

Source: generated by the author

It is advisable to conduct an analysis of the market, its opportunities and threats for the enterprise using one of the matrix methods - the SWOT analysis method . This method allows for the most systematic approach to the analysis, arranging both the system components and the established relationships between them. The dependence between the components can be viewed both statically and dynamically, which will give a more substantiated conclusion regarding the analysis and the state of the enterprise [12].

To organize the proposed activities, it is necessary to determine, based on expert assessment, an integral indicator of the quality of innovative activity by analyzing each of the areas of innovative activity of the enterprise.

To form a list of individual quality indicators of the innovation activity implementation system, a study was conducted on the influence of individual criteria that were formed by experts on the system indicators.

The calculation of individual indicators occurs in the following sequence:

k_1 is determined – the indicator of security, for each criterion that was identified by experts.

The calculation is made using the formula:

$$k_1 = \sum_{i=1}^{1} c_i \times m_i, \quad (2)$$

where $c_i$is the significance coefficient *i* criterion in a certain direction, determined by expert means. $\sum c_i = 1$;

m_i– expert assessment of the enterprise's security appropriate criterion ;

i – the number of evaluation criteria.

The indicator of the enterprise's provision of a certain criterion can take only two values:

m = 1 – the enterprise is provided with the corresponding criterion;

m = 0 – the enterprise is not provided with the corresponding criterion.

The optimal value of the provision indicator is 1, which means that the degree of provision of the enterprise with the corresponding criterion in the relevant direction of innovative activity is at a high level.

The enterprise's security indicator should strive for $k_1 \rightarrow 1$.

k_2 is determined :

$$k_2 = \sum_{i=1}^{1} c_i \times h_i, \quad (3)$$

where $c_i$is the significance coefficient *i* The criterion, in a certain direction, is determined by experts. $\sum c_i = 1$;

h_i– an expert assessment of the quality of the relevant criterion ;

i – the number of evaluation criteria.

The indicator of the quality of innovation activities can have only two values:

h = 1 – the criterion corresponds to the qualitative state;

h = 0 – the criterion does not correspond to the qualitative state.

The optimal value of the quality indicator is 1. The indicator gains this value when the quality is at a high level in each of the criteria .

The quality indicator should tend to $k_2 \rightarrow 1$.

Calculate k_3 – the importance indicator:

$$k_3 = \sum_{i=1}^{1} c_i \times g_i, \quad (4)$$

where $c_i$is the significance coefficient *i* criterion in a certain direction. $\sum c_i = 1$;

g_i– an expert assessment of the importance of the relevant criterion;

i – the number of evaluation criteria.

The importance indicator *i* can only have two values:

g = 1 – the criterion is considered important;

g = 0 – the criterion is not considered important.

The optimal value of the importance indicator is 1, when each criterion is important for the enterprise .

The importance indicator should tend to $k_3 \to 1$.

We will assess the quality of the system for implementing innovative activities of LLC "VK Hermes Bud".

To assess the quality of the system for implementing innovative activities of LLC “VK Hermes Bud”, the expert survey method was used, the results of which are presented in Table 3.

To check the consistency of experts' opinions, we will calculate the concordance coefficient.

The general formula for calculating the concordance coefficient is:

$$w = \frac{12\sum\Delta^2}{n^2(m^3-m)}, \quad (5)$$

where n is the number of experts;

m – the number of possible evaluation options;

Δ is the deviation from the average sum of ranks.

The average sum of ranks ($\overline{\sum p}$) is calculated using the following formula:

$$\overline{\sum p} = n \times (m+1)/2, \quad (6)$$

Calculations of the concordance coefficient confirm its significance, the ranking of experts' responses is presented in Table 3.

Let's check the consistency of experts' opinions by calculating concordance coefficients.

Average sum of ranks:

$$\overline{\sum p} = 10 \times \frac{2+1}{2} = 15$$

The calculated rankings of the expert assessment results are presented in Table 4.

Concordance coefficient:

$$w_{k_1} = \frac{12\times41}{10^2(2^3-2)} = 0{,}82;$$

$$w_{k_2} = \frac{12\times32}{10^2(2^3-2)} = 0{,}64;$$

$$w_{k_3} = \frac{12\times34}{10^2(2^3-2)} = 0{,}68.$$

Therefore, the calculated concordance coefficients for various criteria indicate that the consistency of experts' opinions is high, and therefore, the results of the expert survey are correct.

Table 3

Results of the expert survey

Criterion	Experts										Rating
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
1	2	3	4	5	6	7	8	9	10	11	12
k1											
New equipment	1	1	1	1	1	1	1	1	1	0	1
Standardized environmental programs	1	1	1	1	1	1	0	1	1	1	1
Website	0	0	1	0	0	1	0	0	1	0	0
Investment income	1	1	0	1	1	1	0	1	0	0	1
Unit or position	1	0	0	0	1	0	0	1	0	0	0
k2											
New equipment	1	1	1	1	1	0	1	0	1	1	1
Standardized environmental programs	1	1	1	1	1	0	0	1	1	0	1
Website	1	0	0	0	0	1	0	0	0	0	0
Investment income	1	1	0	1	1	1	1	1	0	1	1
Unit or position	1	0	0	0	0	0	0	0	1	1	0
k3											
New equipment	0	1	0	0	0	0	0	0	0	1	0
Standardized environmental programs	0	1	0	1	0	0	1	0	1	0	0
Website	1	0	1	1	1	0	1	1	1	0	1
Investment income	1	1	1	0	1	1	1	1	1	1	1
Unit or position	1	0	1	1	1	0	1	0	1	1	1

Source: generated by the author

Table 4

Ranking of expert assessment results

Criterion	**Total rank**	Δ	Δ^2	**Criterion**	**Total rank**	Δ	Δ^2
k1				k2			
New equipment	19	4	16	New equipment	18	3	9
Standardized environmental programs	19	4	16	Standardized environmental programs	17	2	4
Website	13	-2	4	Website	12	-3	9
Investment income	16	1	1	Investment income	18	3	9
Unit or position	13	-2	4	Unit or position	14	-1	1
∑			41	∑			32

Criterion	Total rank	Δ	Δ^2
k3			
New equipment	12	-3	9
Standardized environmental programs	14	-1	1
Website	17	2	4
Investment income	19	4	16
Unit or position	17	2	4
∑			34

Source: generated by the author

Based on the results of expert surveys, significance coefficients were determined for each criterion (Table 5).

Therefore, the value of the integral indicator of the quality of the system for implementing innovative activities of LLC "VK Hermes Bud" is determined as follows:

$$k = k_1 \times k_2 \times k_3 = 0{,}6 \times 0{,}7 \times 0{,}6 = 0{,}252.$$

Therefore, the value of the integral indicator of the quality of the system for implementing innovative activities of LLC "VK Hermes Bud" is determined as follows/

Table 5

The value of the quality coefficients of the system for implementing innovative activities of LLC "VK Hermes Bud"

Indicator	Significance coefficient	Rating			Indicator value		
		k1	k2	k3	k1	k2	k3
New equipment	0.3	1	1	0	0.3	0.3	0
Website	0.2	0	1	1	0	0.2	0.2
Standardized environmental programs	0.1	1	0	0	0.1	0	0
Unit or position	0.2	0	0	1	0	0	0.2
Together	1				0.6	0.7	0.6

Source: generated by the author

The integral indicator has the following interpretation:

$k < 0.5$ – the system requires radical changes, it is necessary to review the areas in which innovative activities are carried out;

$0.5 < k < 0.7$ – the system is built in accordance with the basic requirements, but requires detailing of specific types of activities in each of the areas;

$0.7 < k < 0.85$ – the system meets the main task, but needs improvement;

$0.85 < k < 1$ – the system is formed at a sufficiently high quality level, taking into account the factors and principles of implementing innovative activities;

$k = 1$ – the system operates on the principles of synergy.

According to the results of the analysis, the quality indicator of the system for implementing innovative activities of LLC "VK Hermes Bud" based on the interpretation of the integral indicator requires radical changes, it is necessary to review the areas in which innovative activities are carried out.

As a result of the calculations, we can conclude that the company needs to take measures in the marketing and organizational areas. For the marketing area – creating a website; for the organizational area - the position of innovation manager.

Let's consider each of the proposed measures in more detail.

The first measure to consider is hiring an innovation manager.

Table 6 shows the types of costs incurred by the enterprise as a result of hiring an innovation manager.

The next measure proposed for implementation is the creation of a company website.

Table 7 shows the costs that the company will incur during the development of the website.

Table 6

Costs of hiring an innovation manager

No. of the company	Type of expenses	Cost
1	Purchasing office furniture	33582 UAH.
2	Purchase of office equipment and supplies	74136. UAH
3	Employee salary, per year	161676 UAH.

Source: generated by the author

Table 7

Website creation costs

No. of the company	Type of expenses	Cost
1	Development of technical specifications	3500 UAH.
2	Hosting services , per year	375 UAH/year
3	Domain name selection, per year	480 UAH/year
4	Choice C MS (content management systems)	16230 UAH.
5	Website design development	13125 UAH.
6	Website layout	9360 UAH.
7	Website programming	2700 UAH.
8	Content filling	2403 UAH.
9	SEO optimization	7120 UAH.

Source: generated by the author

Therefore, the total costs for the first measure, which will entail hiring an innovation manager, are UAH 269,394. For the second measure, which involves developing a web resource, the costs are UAH 55,293. Accordingly, when implementing both measures, the total costs for implementation will be UAH 324,687.

Due to the fact that the company has not existed on the market for a long time, the company's top management plans to attract another person to the founders in order to gradually expand the business.

By attracting another person to the founders, the company will receive investments of UAH 500,000, which can be used for the development of the company.

To increase the company's profits through the implementation of innovative measures, we will consider 3 development options for which investments will be used.

Thus, the first option is proposed for consideration, which is based on the comprehensive implementation of the measure: an innovation manager is immediately hired and at the same time the enterprise's web resource is being developed. In this case, the management of LLC "VK Hermes Bud" predicts profits from the implementation of the comprehensive measure by years: for 1 year - 91370 UAH; for 2 year - 134875 UAH; for 3 year - 154150 UAH; for 4 year - 186753 UAH; for 5 year - 241285 UAH.

If we consider the second option, which is based on the implementation of the measure to hire an innovation manager. That is, in this case, the development of the web resource will not take place immediately, but some time after the hiring of the manager. In this case, the management of LLC "VK Hermes Bud" predicts profits from the implementation of the measure to hire an innovation manager by years: for 1 year - 65322 UAH; for 2 year - 107482 UAH; for 3 year - 125684 UAH; for 4 year - 186753 UAH; for 5 year - 241285 UAH.

According to the third option, the following sequence of measures is considered: first of all, the development of the web resource takes place, and after some time, the hiring of an innovation manager is carried out. In this case, the management of LLC "VK Hermes Bud" as a result of forecasting expects profits from the implementation of the measure by years: for 1 year – 41530 UAH; for 2 year – 52325 UAH; for 3 year – 75485 UAH; for 4 year – 93560 UAH; for 5 year – 142370 UAH.

It is necessary to carry out calculations that will make it clear which option it is advisable for the enterprise to choose in order to make good use of the investments raised.

Therefore, it is proposed to calculate the NPV for each of the options. – net present value for each option.

The calculation results are presented in Table 8.

As a result of the calculations given in Table 8, it can be concluded that the second and third options are impractical to implement since NPV <0, which indicates that these options should not be considered, since the funds that will be invested will not be returned in 5 years. Thus, we can say that the first option is advisable to implement, since NPV corresponds to a value greater than zero (NPV >0), which indicates the feasibility of implementing a comprehensive measure.

The payback period for implementing a comprehensive measure will be 4 years and 8 months. The effectiveness of the first option for implementing the measure was 54419.30 UAH.

According to the calculations, it is clear that the economic effect of implementing a comprehensive measure is more attractive than implementing each of the proposed measures separately.

Table 8

Results of NPV calculations for each of the options

The first option for implementing measures						
1	2	3	4	5	6	7
Years	2021	2022	2023	2024	2025	2026
Initial investment	500000.00					
Cash flow		91370	134875	154150	186753	241285
Discounted Cash Flow (PV)		81580.36	107521.52	109720.93	118684.9077	136911.59
NPV	54419.30					
Payback	4 years and 8 months in					
The second option for implementing measures						
Years	2021	2022	2023	2024	2025	2026
Initial investment	500000.00					
Cash flow		65322	107482	125684	167584	190327
Discounted Cash Flow (PV)		58323.21	85683.99	89459.39	106502.66	107996.65
NPV	-52034.09					
The third option for implementing measures						
Years	2021	2022	2023	2024	2025	2026
Initial investment	500000.00					
Cash flow		41530	52325	75485	93560	142370
Discounted Cash Flow (PV)		37080.36	41713.17	53728.73	59459.07	80784.56
NPV	-227234.11					

Source: generated by the author

In section 3, measures were proposed to improve the organization of the innovation management process based on the enterprise LLC "VK Hermes Bud"

An algorithm for analyzing the implementation of innovative activities at the enterprise was proposed . For this purpose, a team was formed within the enterprise, which included the management of the enterprise's workers. The management selected five areas for analysis, namely: marketing, technological, organizational, environmental and investment. Further, recommendations were

given on involving experts to select criteria for each of the analyzed areas. Each stage of the expert assessment method was also analyzed, as a result of which each of the stages was given a brief description.

Based on the expert method, an analysis of the quality of the system for implementing innovative activities was conducted. With the help of experts, indicators of the quality of the system for implementing innovative activities were formed and a study of the influence of individual criteria on the system indicators was conducted. Based on the results of the study, a concordance index and an integral indicator of the quality of the system for implementing innovative activities were calculated , which indicated that the system requires radical changes.

Two proposals were made for the implementation of measures: hiring an innovation manager and developing a web resource for the enterprise. For each proposal, the costs that the enterprise would incur as a result of implementing the proposals were calculated.

3 options for implementing the proposed measures were identified, through the investment of funds that will be invested by a person who will be involved in senior management. For each of the options, the NPV calculation was performed and it was determined that the first option is the most attractive. The payback period for implementing option 1 (complex measure) will be 4 years and 8 months. The effectiveness of the first option for implementing the measure was 54419.30 UAH.

An important direction of innovation management is the use of startups . The author's article [14] considers this problem, but it is advisable to improve it in terms of organizing the work of startup specialists . In modern conditions of digital transformation and flexible work organization, startups operate in a unique environment that combines innovation , multifunctionality and high dynamics. In recent publications, scientists have also paid considerable attention to research into the problem of organizing the work of startup specialists [14 – 29]. However, it is advisable to improve the organization of the work of startup specialists based on the use of a hierarchical system of indicators. For a comprehensive assessment of the organization of the work of startup specialists , a hierarchical system of indicators is proposed, which includes three levels. At the first level, partial indicators are calculated for each proposed direction, which are evaluated and standardized. At the second level, integral indicators are determined for each proposed direction of organizing the work of startup specialists using the additive convolution method. At the third level, a general integral indicator is calculated E_{total}, which includes integral indicators for seven proposed directions: assessment of the effectiveness of organizing the work of startup specialists in remote or hybrid work ; assessment of the effectiveness of organizing the implementation of new methods and approaches by startup specialists ; assessment of the labor productivity of

startup specialists using AI to analyze work correspondence; assessment of the organization and management of the innovation environment in a startup in remote work conditions; assessment of the need to use AI to improve the quality of documentation on the exchange of knowledge of startup specialists ; assessment of the effectiveness of organizing the implementation of new technologies that affect the working environment of specialists; assessment of the organization of remote or hybrid work of startup specialists as a competitive advantage in the labor market.

The practical significance of the proposed directions and partial indicators for them is that startup managers can use these proposals as a tool for management control and development. Regular measurement of integral indicators will allow tracking innovation activities using startups , responding in a timely manner to negative trends, and making decisions based on objective information.

Conclusions

Summing up the work, it should be noted that innovative activity and the effectiveness of innovative activity are a complex phenomenon and activity of the enterprise.

Based on the analysis of the definition of the concept of "innovative activity" and the analysis of approaches to the definition of "efficiency", as a result of the synthesis, the author's interpretation of the concept of the efficiency of innovative activity was provided.

Thus, the effectiveness of innovation activity is the achievement of the enterprise's goals regarding the maximum possible result from the creation, implementation and commercialization of the results of innovation activity and/or scientific developments, while rationalizing the enterprise's available resources.

The paper analyzes the main types of innovative activity; identifies the components of innovative activity and the principles on which the process of innovative activity is based. The stages of implementing innovative activity are analyzed.

Approaches to assessing the effectiveness of innovation activities are summarized.

The feasibility of implementing and using an integrated approach was substantiated and modern tools were identified for assessing the effectiveness of innovation activities at the enterprise, which is important in wartime conditions.

Proposals are substantiated to improve the efficiency of management of innovative activities of the enterprise for a real operating enterprise, these are: hiring an innovation manager; development of the enterprise's web resource.

3 options for im9nvestments will be used. For each of the options, the NPV calculation was performed and it was determined that the first option is the most attractive. The payback period for implementing option 1 (complex measure) will be 4 years and 8 months. The effectiveness of the first option for implementing the measure was 54419.30 UAH.

A system of indicators is proposed for evaluating the organization of work of startup specialists as a direction of the modern vision of its development during the period of hostilities.

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