

UDC 338.931

DOI: <https://doi.org/10.32782/2415-8801/2023-1.15>**Klius Yuliia**

Doctor of Economic Sciences, Professor;
Head of Department of Accounting and Taxation
Volodymyr Dahl East Ukrainian National University
ORCID: <https://orcid.org/0000-0002-1841-2578>

Fomenko Denys

Postgraduate
Volodymyr Dahl East Ukrainian National University
ORCID: <https://orcid.org/0009-0001-2980-450X>

CHARACTERIZATION OF METHODS OF INNOVATION MANAGEMENT AT THE ENTERPRISES OF THE REGION TO ENSURE THEIR ECONOMIC SUSTAINABILITY

World experience shows that strategically sustainable economic development of the region's enterprises is impossible without continuous and continuous innovation. In order to survive, win and constantly increase the level of its development, the enterprise must continuously update, improve and transform the products it produces, improve and modernize production. All this is possible on the basis of innovation. Innovations and innovative activities are not considered as independent objects of accounting and complex economic analysis. In this regard, there are no accounting and analytical definitions and classifications of innovations that would allow them to be distinguished compared to other, non-innovative (traditional or routine) types of activity. Accordingly, the analysis and evaluation of innovations are not included in the system of complex economic analysis, there are no unified ideas about the internal structure and relationships of this direction of economic research. The purpose of the article is to provide a description of innovation management methods in the corporate structure and their application in crisis conditions. Despite the limited amount of research in the field of innovation, the question of choosing the most effective toolkit for innovation management in corporations suddenly arises. This will make it possible to increase the competitiveness of the enterprise, quickly identify internal opportunities for innovative activity, and reveal hidden reserves of industrial enterprise development. The article examines the classification of innovation training and proposes levels of evaluation of this training, researches the types of innovation management, defines approaches to finding innovations, analyzes the methods of identifying innovations to ensure the economic sustainability of enterprises in the region. The considered methods of innovation management allow implementing all types of innovation management at enterprises of the region to ensure their economic sustainability. All complex performed and planned measures directional to increase association volumes of production, improvement of quality and decrease its cost price. Improving the system of corporate management of innovations to ensure the economic stability of enterprises in the region can be a further direction of research.

Keywords: innovative activity, economic sustainability, enterprises of the region, corporate structures, provision.

ХАРАКТЕРИСТИКА МЕТОДІВ УПРАВЛІННЯ ІННОВАЦІЯМИ НА ПІДПРИЄМСТВАХ РЕГІОНУ ЗАДЛЯ ЗАБЕЗПЕЧЕННЯ ЇХ ЕКОНОМІЧНОЇ СТІЙКОСТІ

Клюс Ю.І., Фоменко Д.В.

Східноукраїнський національний університет імені Володимира Даля

Світовий досвід показує, що стратегічно стійкий економічний розвиток підприємств регіону неможливо без постійного і безперервного проведення інновацій. Щоб вижити, виграти і постійно підвищувати рівень свого розвитку, підприємству необхідно безперервно оновлювати, покращувати і перетворювати випускається їм продукцію, удосконалювати і модернізувати виробництво. Все це можливо на базі інновацій. Інновації та інноваційна діяльність не розглядаються як самостійні об'єкти бухгалтерського обліку та комплексного економічного аналізу. У зв'язку з цим немає обліково-аналітичних визначень і класифікацій інновацій, які дозволили б виокремлювати їх порівняно з іншими, не інноваційними (традиційними, або рутинними) видами діяльності. Відповідно, аналіз та оцінка інновацій не включені до системи комплексного економічного аналізу, відсутні єдині уявлення

про внутрішню структуру та взаємозв'язки цього напрямку економічних досліджень. Метою статті є надання характеристики методів управління інноваціями в корпоративній структурі та їх застосування в умовах кризового стану. Незважаючи на обмежену кількість досліджень в області інновацій різко постає питання про вибір найбільш ефективного інструментарію управління інноваціями в корпораціях. Це дозволить підвищити конкурентоспроможність підприємства, оперативно визначати внутрішні можливості до інноваційної діяльності, виявляти приховані резерви розвитку промислового підприємства. В статті розглянуто класифікацію навчання інноваціям та запропоновано рівні оцінювання цього навчання, досліджено типи управління інноваціями, визначено підходи до пошуку інновацій, проаналізовано методи виявлення інновацій задля забезпечення економічної стійкості підприємств регіону. Розглянуті методи управління інноваціями дозволяють реалізувати всі типи управління інноваціями на підприємствах регіону задля забезпечення їх економічної стійкості. Весь комплекс виконаних і планованих заходів спрямований на збільшення об'єднанням обсягів виробництва продукції, поліпшення якості та зниження її собівартості. Удосконалення системи корпоративного управління інноваціями задля забезпечення економічної стійкості підприємств регіону може бути подальшим напрямом досліджень.

Ключові слова: інноваційна діяльність, економічна стійкість, підприємства регіону, корпоративні структури, забезпечення.

Formulation of the problem. The activity of corporate structures in creating new innovations and effective communications for their transfer becomes a factor of economic development and competitiveness of industrial enterprises. The cost of modern products is determined not only by costs of material production, but also by research and development works, as well as by costs of technological preparation for actual production, which in turn can be an innovative component. The use of innovations makes it possible to increase not only the efficiency of individual components of the corporate structure, but also, if proper attention is paid to integration processes, of the entire corporate innovation management system.

Analysis of recent achievements and publications. Many scientific works of foreign and domestic scientists are devoted to the study of the problems of innovation management at the enterprise. So, for example, she devoted her research to the influence of the human factor on innovative development [1]. The theoretical aspects of the system modeling of innovative development were covered in works [2; 3]. The analysis of the internal factors of innovative development of the enterprise is given considerable attention by [6] However, there is still not enough scientific, methodological and methodical work on the formation of the corporate innovation management system.

Therefore, the **purpose** of this article is to provide a description of innovation management methods in the corporate structure and their application in crisis conditions. The task of the work: to achieve the above-mentioned goal, to carry out a study of the existing methods of innovation management in the corporation and to provide recommendations on their application in modern conditions.

Presentation of the main material. The first type of innovation management in the corporation is transfer management, which can be conditionally divided into two forms: passive form ("simple" transfer of information about innovations); active form (learning).

Any innovation transfer has two phases: the goal formation phase and the transfer phase itself. These phases refer to any innovation transfer regardless of its volume [3].

The first phase of innovation transfer is characterized by goal formation in individual employees or groups of employees. The transfer phase implies the copying of explicit and (or) implicit knowledge about innovations between the participants of the transfer process. In the transfer of tacit knowledge, methods are used that are based on making personal contacts and conducting joint activities of key participants in the transfer process, moreover, the transfer of tacit knowledge about innovations can also take place outside of working hours, during informal meetings, additional events, changing jobs and even personnel exchange.

The transfer of explicit knowledge about innovations means the transfer of documentation of a technical, methodical and organizational nature, as well as the publication of scientific works, dictionaries and reference books, both on paper media (books, monographs, articles) and in electronic form – the creation of information resources in Internet networks, in the organization's corporate network, transfer of databases or entire expert systems and decision support systems, already created in the organization, to interested persons or companies.

An active form of innovation transfer involves training employees in all its manifestations. It is possible to propose the following classification of learning innovations according to learning methods:

a) the classic formation of knowledge about innovations, which takes place consistently from theoretical foundations to practical implementation. In this case, there is a gradual transition from technical, organizational and methodical information to reference data and practical information about innovations;

b) problem-based learning, which consists in the initial formation of the conceptual apparatus related

to innovations, posing the problem that led to the creation of this innovation, to the innovation itself, both from the point of view of information about the object of innovation, and the methods, means, ways of its using;

c) learning by examples, which first forms situations for the subject of innovation transfer, and then examples of the use of this innovation in different areas or within the same field of professional activity, indicating the positive and negative sides of using this innovation. In this case, it will be most interesting to give situations or examples from different professional areas, if this is possible for the transferred innovation;

d) training on models, which allows the subjects of innovation transfer to develop the ability to model a situation in which this innovation or many related innovations can be applied. This process begins with mastering the methods of solving problems.

All options for teaching innovation can be evaluated according to the level of assimilation and the degree of abstraction, by analogy with approaches to the assimilation of knowledge.

The first level is the level of recognition, when objects, individual properties or characteristic processes of a given subject area are recognized. This is an algorithmic activity with an externally specified algorithmic description ("with a hint").

The second level is a reproductive action, which is carried out by independent reproduction from memory and the application of information about the previously learned indicative basis for performing a typical action – the level of reproduction.

The third level is a productive action, which is performed on many similar objects similar to those studied. This level is often called the level of heuristic activity, which is performed not according to a given algorithm, but according to the one produced during the action itself.

The fourth level is a constructive action, which is performed by independently creating an objectively new indicative basis of activity. In the process of performing actions at this level, new information is extracted or created.

There are four degrees of abstraction of information display, which must be understood when teaching innovations.

The first stage is phenomenological – a descriptive statement of facts and phenomena; cataloging objects, ascertaining their properties and qualities.

The second stage is analytical-synthetic, predictive – an elementary explanation of the nature and properties of objects and regularities of phenomena, to a lesser extent a quantitative description, to a greater extent – qualitative: the essence and properties of the mechanisms that control the functioning of the analyzed facts and phenomena are known.

The third stage is prognostic – explanation of the phenomena of the given area with the proposal of a

quantitative theory, modeling of the main processes, analytical presentation of laws and properties (known regularities of the functioning of objects of a particular type).

The fourth level is axiomatic – the explanation of phenomena using a high degree of commonality of description, both in terms of the breadth of coverage of the material and the scientific language used, and in terms of the depth of penetration into the essence of phenomena (the general laws of the functioning of objects of any nature are known). Accurate and long-term forecasts, explanations and use of the interdisciplinary language of science are possible.

The second type of innovation management is algorithmic management, which is based on methods of finding and identifying innovations or knowledge about them.

Approaches to the search for innovations can also be divided into active and passive. Which, respectively, are called "push" and "pull". In the first case, there is a kind of uncoordinated transfer of innovations or information about them to individual persons (users). In the second case – an active search for innovations, for example, in the corporate bank of innovations or on the Internet, and the subsequent selection of useful ones depending on the professional task or situation.

It is also possible to carry out "coordinated pushing", in which the consumer of innovations first of all determines his own needs, and then waits for the arrival of solutions, information about innovations in response to the formed request [4].

"Pushing" innovations occurs when there is a need to increase the interest of the surrounding community (both inside the company and outside it) in its own developments. This situation often arises when looking for new partners, sales markets, etc. In this case, the company itself determines which innovations need to be exposed to the general public ("push" into the business environment).

When "extracting" the company's innovations, the company's employees can use them as their own bank of innovations, using search engines that allow more clearly defining the zone and carrying out research on the selected subject area, taking into account the functional and geographical structure of the organization, and with the help of specialized catalogs in which ordered lists of those from which the consumer of innovations can choose the necessary one, and on the basis of this, conduct further inquiries and research. Individualization of search systems, catalogs, their personal setting allow searching with higher accuracy and speed.

The choice of the search method largely depends on the specifics of the subject area, in which both the interests of the users and the existing innovations of the region's enterprises lie.

Innovation detection methods can also be conditionally divided into two groups:

– independent description by a company employee of own innovations, experience of their application in past situations;

– detection through the active interaction of the algorithmic innovation management manager with employees.

For the second group of methods, such forms as questionnaires, interviews, the organization of a "round table" or expert games are used.

Questionnaire refers to a survey based on a previously prepared questionnaire. Either the algorithmic management manager or the employee himself must fill out the previously developed questionnaire. One of the mandatory requirements for the questionnaire should be, firstly, professional language that corresponds to the employee's professional field of activity, and, secondly, redundancy, i.e. the presence of common questions, but formulated in different ways.

An interview is a special form of communication between employees and a manager on algorithmic innovation management, in which the employee is asked a series of prepared questions, the purpose of which is to obtain information both about a specific innovation and about his innovative activity in general (or what may be according to the employee, are innovations).

The "round table" method allows you to get information about innovations of employees or third parties in a group form. At the same time, all employees have equal rights, and the manager of algorithmic management of innovations plays an additional role of moderator, directs and regulates the process of their discovery. As with any "round table", the focus of the meeting is first indicated, an implicit survey of all participants is carried out, and then the transition to a lively free discussion takes place. Often, this method of identifying innovations allows you to go beyond one professional area and find either related innovations or other areas of their application.

The expert game, which is carried out to extract innovations or innovative knowledge, is understood as a situational game in which employees of the organization are offered a certain production situation, and they make decisions based on their life experience, general and special knowledge and ideas. Innovations are identified based on the analysis of decisions made by employees.

Creative management uses methods of generation and decision-making depending on its stage. At the idea generation stage, different types of brainstorming, methods of psychological activation of creativity (Disney method, SCORE model, Mill's methods) can be used [5].

The stage of evaluation of ideas can be carried out based on the majority of votes cast for an idea.

The stage of development (improvement) of innovations is implemented using methods of force field analysis, modified Delphi method, matrix diagram and exchange of opinions.

Among the varieties of brainstorming methods, direct brainstorming, reverse brainstorming, and combined brainstorming can be distinguished.

The method of direct brainstorming allows you to solve any problem that has several possible solutions, it consists in generating ideas from the problem.

At the heart of reverse brainstorming is an approach to generating a new solution by identifying and eliminating deficiencies in existing ones.

Direct and reverse brainstorming methods can be used together in various combinations. Double direct brainstorming consists in the fact that after direct brainstorming there is a break from two hours to two to three days and direct brainstorming is repeated once more. Practice has shown that when conducting a second brainstorming on the same task, the most valuable practically useful ideas or the successful development of the idea of the first meeting are often revealed, that is, during the break, a powerful apparatus for solving creative tasks is included in the work – the human subconscious, which synthesizes unexpected fundamental ideas.

Reverse and direct brainstorming is carried out as follows. First, with the help of reverse brainstorming, all the shortcomings of the existing object are identified and the main ones are identified among them. Then, direct brainstorming is conducted to eliminate the identified main shortcomings and a sketch of a new solution is developed, in which, if possible, these shortcomings are eliminated or taken into account.

Direct and reverse brainstorming are carried out as follows: first direct brainstorming is carried out and sketches of the most promising solutions are made, then reverse brainstorming is carried out and possible shortcomings of these solutions are identified.

In order to increase the forecasting time, it makes sense to repeat this cycle once again, to conduct a direct brainstorming again to eliminate the identified future shortcomings and develop appropriate sketches of solutions, in relation to which the reverse brainstorming is once again performed.

Let's consider the methods of psychological activation of thinking. An elementary creative procedure is an assessment of any event from four points of view: the first position is a person's own point of view; the second position – perception of the situation from the opposite point of view; the third position – consideration of the situation from the point of view of a disinterested observer; the fourth position is the analysis of the situation from the point of view of the whole system (or "field of relations") involved in the situation.

According to the concept of the "dreamer, realist, critic" method, creativity is an interaction of different thinking strategies, characteristic of three positions of human perception of the surrounding world – positions of a dreamer, a realist and a critic. Effective thinking involves a consistent, guided approach to

solving a task through these positions. A dreamer in the creative process is necessary for formulating and proposing new ideas and concepts. A realist is needed for practical implementation of ideas in practice. The critic is a kind of filter and encourages the improvement of the creative process as a whole. All three positions represent separate independent thinking strategies, which, entering into contradictions, ultimately bring the creative process to an effective level.

Non-standard solutions to problems include the ability to define the problem space of a situation and potential areas solution space by establishing relationships between elements described by the SCORE model [5].

A. Symptoms (S) – usually the most visible and perceived aspects of this problem or problem state, for example, misunderstandings and conflicts related to changes in policy or technology.

B. Causes (C) – hidden elements responsible for the emergence and maintenance of symptoms, for example, inflexible or outdated cognitive maps or those that limit beliefs and assumptions (thought viruses) that lead to conflicts or misunderstandings.

C. Outcomes (O) – specific goals or desired states that should take the place of symptoms, such as the adoption and implementation of a new policy or technology.

D. Resources (R) – hidden elements responsible for eliminating the causes of symptoms, as well as for the manifestation and provision of desired results; including funds and alternatives, employees to communicate and clarify all the "where", "when", "what", "how", "why" and "who" related to policy or technology changes.

D. Effect (E) – the long-term results of achieving a certain goal, for example, an increase in productivity, profitability or quality of work, which is expected as a result of a change in policy or technology.

In his works, Mill identifies five primary strategies, or methods, by which the subject determines basic mental operations through inductive reasoning. The matching method involves observing a number of examples in which a particular result is achieved and identifying factors or properties that are present in all cases. The method of differences involves the search for a certain element or property, which is

not normally an integral part of the situation or phenomenon, but is present at the moment of achieving the result. The combined method of agreement and distinction involves observing those properties that always reach a certain result and are always absent in cases where the result is not reached. The method of accompanying changes involves identifying those properties that change in direct or inverse relationship with the degree of success of the achieved result. The remainder method is also known as the "process of elimination". If a connection is observed between one or another property of a complex phenomenon and a certain part of the desired result, we can assume that other parts of the result will be associated with other properties of the phenomenon.

Evaluation of ideas can be carried out using the majority vote method, which consists in counting the votes of experts who spoke in favor of the idea that received the maximum number of votes.

Conclusions. Thus, at the stage of development of the solution, the most convenient methods should be used, which include force field analysis, modified Delphi method, matrix diagram. Each of these methods is used to consider options for solving different types of problems. Force field analysis is used when considering a problem as a balance of two oppositely directed forces (forces and factors that contribute to the solution of the problem and that hinder its solution). Delphi method allows group members to come to an agreement on choosing a solution to the problem without resorting to open discussion. The matrix diagram is used to reveal the importance of various relationships between the data characterizing options for solving the problem. Information technologies play an important role in the successful management of innovations. Their implementation, as a rule, is carried out in the form of network multifunctional information systems consisting of customizable modules that use different approaches to data storage, network communication and methods of transferring information resources.

Therefore, the considered innovation management methods allow implementing all types of innovation management at an industrial enterprise, and improvement of the corporate innovation management system can be a further direction of research.

References:

1. Dolzhanskyi I.Z., Zahorna T.O. (2006) Konkurentospromozhnist pidpriemstva [Competitiveness of the enterprise]: navchalnyi posibnyk [textbook]. Kyiv: Center for Educational Literature, 384 p. (in Ukrainian)
2. Kukharuk A., Zmitrovych D. (2015) Formuvannja konkurentnykh perevagh pidpriemstva z urakhuvannjam polozhenj koncepciji stalogo rozvytku [Formation of competitive advantages of the enterprise taking into account the provisions of the concept of sustainable development]. *Naukovyj visnyk Khersonsjkogho derzhavnogho universytetu*, vol. 15, part 2, pp. 46–48. (in Ukrainian)
3. Novoseletskyi O.M. (2008) Modeliuvannja stiiikosti funktsionuvannja pidpriemstva z urakhuvannjam ryzyku [Modeling the sustainability of the enterprise taking into account the risk]: avtoreferat dysertatsii [a dissertation abstract]. Kyiv: KNEU, 18 p. (in Ukrainian)
4. Pakulin S. (2016) Upravlinnja stalym rozvytkom suchasnogho pidpriemstva [Management of the steady development of a modern enterprise]. *Elektronnyj naukovyj zhurnal*, no. 8, pp. 200–217. (in Ukrainian)

5. Revenko D.S., Dyba V.A. (2014) Intehralni modeli ekonomichnoi stiikosti pidpriemstva ta instrumentalni zasoby yii vizualizatsii [Integral models of economic sustainability of an enterprise and tools for its visualization]. *Visnyk Skhidnoievropeiskoho universytetu ekonomiky ta menedzhmentu*, no. 1(16), pp. 148–159.
6. Trydid O.M. (2002) Kompleksna otsinka konkurentnoho statusu pidpriemstva [Comprehensive assessment of the competitive status of the enterprise]. *Ekonomika rozvytku*, no. 2, pp. 75–76.
7. Ulianchenko O.V. (2006) Formuvannia ta vykorystannia resursnoho potentsialu v aharnii sferi [Formation and use of resource potential in the agricultural sector]: monohrafiya [a monograph]. Kharkiv: KhNAU, 357 p. (in Ukrainian)

Список використаних джерел:

1. Должанський І.З., Загорна Т.О. Конкурентоспроможність підприємства : навчальний посібник. Київ : Центр навчальної літератури, 2006. 384 с.
2. Кухарук А., Змітрович Д. Формування конкурентних переваг підприємства з урахуванням положень концепції сталого розвитку. *Науковий вісник Херсонського державного університету*. 2015. Вип. 15. Ч. 2. С. 46–48.
3. Новоселецький О.М. Моделювання стійкості функціонування підприємства з урахуванням ризику : автореф. дис. ... канд. екон. наук. Держ. вищ. навч. закл. «Київ. нац. екон. ун-т ім. В. Гетьмана». Київ, 2008. 18 с.
4. Пакулін С. Управління сталим розвитком сучасного підприємства. *Електронний науковий журнал*. 2016. № 8. С. 200–217.
5. Ревенко Д.С., Дибя В.А. Інтегральні моделі економічної стійкості підприємства та інструментальні засоби її візуалізації. *Вісник Східноєвропейського університету економіки та менеджменту*. 2014. № 1(16). С. 148–159.
6. Тридід О.М. Комплексна оцінка конкурентного статусу підприємства. *Економіка розвитку*. 2002. № 2. С. 75–76.
7. Ульянченко О.В. Формування та використання ресурсного потенціалу в аграрній сфері : монографія. Харків : ХНАУ, 2006. 357 с.

E-mail: docentklus@gmail.com