

Formation of a Model of Legal Protection of Competitive Advantages in the System of Innovation Management of Sustainable Development and Planning



Oleksandr Levchenko^{1*}, Anna Levchenko², Roman Kolisnichenko³, Marat Tsumariyev³, Andriy Zaverbnyj⁴

¹ Vice-Rector for Scientific Activity, Central Ukrainian National Technical University, Kropyvnytskyi 25000, Ukraine

² Department of Economy, Management and Commercial Activity, Central Ukrainian National Technical University, Kropyvnytskyi 25000, Ukraine

³ Central Ukrainian Institute of the Interregional Academy of Personnel Management, Interregional Academy of Personnel Management, Kyiv 59000, Ukraine

⁴ Department of Foreign Trade and Customs, Lviv Polytechnic National University, Lviv 79000, Ukraine

Corresponding Author Email: kolisnichenko.edu@gmail.com

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ABSTRACT

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The main purpose of the article is the formation a model for the legal protection of competitive advantages in the system of innovative management of sustainable development and planning. Based on the results of the research, a model of the legal protection of competitive advantages in the system of innovative management of sustainable development and planning and its key elements was presented. The methodology involves the use of an effective and popular modeling technique, which is able to cope with the tasks. The main elements of the proposed methodological approach for the modeling process were presented. The main stages of achieving the goals of modeling are determined. The main multifunctional model for providing legal protection of competitive advantages in the system of innovation management is presented. It is the presented model that represents a new methodological approach, characterized by flexibility and functionality. The study has limitations in the form of the inability to effectively evaluate the model in practice in many socio-economic systems due to the lack of access. Further research should be devoted to the possibilities of expanding the model and its elements.

1. INTRODUCTION

The transformation and globalization of the world economy require a focus on a set of measures that ensure the stabilization and further growth of all its components. A promising direction for solving these problems is the transition to an innovative way of production, which will positively affect its productivity and the volume of the gross national product in the future.

The impact of the innovation factor on production today is radical and complex. The big benefit of leading firms from the innovative activity is due to the fact that they, under the slogan of exporting the latest technologies, actually transfer only insufficiently effective and outdated technologies.

Innovation management - a relatively new concept in the scientific and management environment, is an independent branch of management science and professional activity, which is aimed at creating and providing conditions for the innovative development of any organization.

In general, innovation management is a complex mechanism of operation of the control system that creates favorable conditions and opportunities for the development and achievement of an effective result for the innovation process and innovation activity.

The input characteristics of the innovation management system are material, energy, information, and cognitive flows. Baselines are new or upgraded, highly competitive processes,

products, services, etc.

The results of the transformation of input parameters into output parameters: are profit, production growth, development of new segments and new markets, new knowledge of employees, social responsibility, and degree of satisfaction of employees and consumers. The feedbacks of the system are the requirements and reactions of the subjects of the innovation process, primarily consumers; information about changes in external macro- and microenvironments; changes in the internal environment, etc.

Management of innovative activities of a company, corporation provides for:

- development of innovative development goals;
- creation of a system of innovative strategies;
- analysis of the external environment, taking into account uncertainty and risk;
- analysis of the company's innovative potential;
- assessment of the market situation.

Innovation management is aimed at ensuring the effective functioning of the innovation process within the socio-economic system in order to create the possibility of competitiveness in the market in the long term [1].

Criteria for the effectiveness of innovative processes are economic indicators that can be used to determine the increase in economic results relative to costs. At the same time, the profit and profitability of innovations act not as a goal, but as an important condition and result of the implementation of

innovative activities - the creation of new products, technologies, and services that affect the standard of living of society [2].

It should be noted that the goals of innovation management are genetically subordinate to the main goal of the production organization, namely, the satisfaction of social needs for products and services. This paradigm is generally recognized in economics, sociology, and other sciences. For there is no need - there is no production. The key to success as an entrepreneur lies in the motto: "Find needs and meet them." Receiving income and profit are achieved as a result of satisfying needs through the production of new, high-quality, efficient goods and services from the point of view of the buyer.

Thus, the key elements of innovation management are precisely the protection of competitive advantages in the system of innovation management of sustainable development and planning.

Competitive advantages always occupy an important place in the activities of socio-economic systems. This is especially evident in the system of innovation management. The fact is that any socio-economic system generates a diverse number of innovative ideas, which as a result can become competitive advantages. But the problem is that it is not given sufficient legal protection.

The main purpose of the article is the formation a model for the legal protection of competitive advantages in the system of innovative management of sustainable development and planning.

2. LITERATURE REVIEW

An analysis of the literature on the legal protection of competitive advantages in the system of innovative management of sustainable development and planning highlights various approaches to determining the essence and content of innovation management and the role of the legal protection of competitive advantages in the system of innovative management of sustainable development and planning [1].

Let's consider some of them. So, according to Levchenko et al. [2, 3], innovation management in the context of the legal protection of competitive advantages is a set of principles, methods, and forms of managing the innovation process, innovation activities, and personnel involved in this activity.

An analysis of the main scientific sources regarding modern concepts of the development of competitive advantages confirms the conclusion that in the context of global informatization of social and economic processes that form the basis of the information economy, the priority components of the economic behavior of socio-economic systems should be the development of opportunities to acquire competitive advantages through the creation of new knowledge and the effective use of their potential, through implementation in various kinds of innovations. This indicates the priority of innovative factors in the formation and development of competitive advantages of both socio-economic systems and national economies [4].

Okoń-Horodyńska et al. [5] consider the process of protecting competitive advantages in the system of innovation management as one of the areas of strategic management, carried out by the highest level of company management. Based on this, the main attention in innovation management

should be focused on the development of an innovation strategy and the means of its implementation. The development and production of new types of products become a priority direction for the development of the socio-economic system since it determines all other directions of its development.

The issue of the legal protection of competitive advantages in the innovation management system is a relatively new area of scientific research, so according to Apsalone and Šumilo [6], the process of the legal protection of competitive advantages in the innovation management system includes such elements through the use of information security systems, licensing, and the use of unique information products, designed specifically to implement the function of protection against unauthorized interference in the database (especially client) of other market entities.

At the same time, considering the essence of modern innovation management in the context of sustainable development and planning, Singh et al. [7] note that the implementation of the functions of innovation management occurs based on a constant exchange of information with the external macro- (economic, social, political, demographic, environmental, technical and technological, and other components) and microenvironment (consumers, suppliers, trade and marketing intermediaries, competitors, financial and credit institutions, mass media, local authorities, local population, etc.). The conditions of the external environment, in turn, are determined by the dynamics of ongoing processes, the nature of these processes is probabilistic.

Modern studies of the processes of strategic management of innovative development note new strategic imperatives, among which the following can be distinguished: increased competition in the market of innovative technologies; intensification of competition within the organization; providing flexibility in bringing innovative products to the market; the dominance of portfolios with a wide range of products; growth in the speed of developing strategies; shortening the life cycle of strategies [8, 9].

These strategic imperatives require appropriate changes in the management of organizations: - ensuring multidirectional scientific research; establishing conflict management processes; creating mixed distribution channels; designing structural changes in the organization; accelerating intraorganizational processes; support for organizational agility [10].

Previous studies on the selected topic focused on the development of competitive advantages in the innovation management system. However, modern literature pays little attention to the elements of protecting competitive advantages [11, 12].

With this in mind, today's urgent issue is the determination of the practical implementation of legal protection of competitive advantages in the system of innovative management of sustainable development and planning.

The methodology is not its new effectiveness, the reliability has been tested by time and by other scientists and practitioners [10-12]. With that in mind, it will be a novelty to apply it to the topics we have chosen.

3. METHODOLOGY

Competitive advantages testify to potential socio-economic opportunities, which, with the appropriate efforts of the

authorities and business, can develop into real conditions that make it possible to rationally conduct economic activities in the territory and effectively solve social problems of the population's livelihoods. The process of realizing competitive advantages should act as one of the ways to solve the most important target function - planning to ensure the sustainable development of regions and increase human development. That is why it is necessary to form a model of the legal protection of competitive advantages in the system of innovative management of sustainable development and planning. To do this, an efficient and effective modeling method should be applied. Its effectiveness and efficiency have already been tested by many scientific and practical works [10-14].

In general, we will apply the method of structural analysis through the technique of process modeling, which can be detailed graphically with the construction of a certain hierarchical structure with several levels of specification. In our case, the formation of the model will be based on the technique of the multifunctional modeling methodology, which is part of the family of structural analysis methodology.

At its core, we will be able to graphically represent a multi-level structure of actions and links between actions in the process of the legal protection of competitive advantages in the system of innovative management of sustainable development and planning.

We try to describe all the actions of the multifunctional modeling technique in this section of the article, and the results will be further down the text.

First of all, you should build an Activity Box, which has its inputs (I_n), outputs (O_n), auxiliary mechanisms (M_n), and Control elements (E_n) (Figure 1).

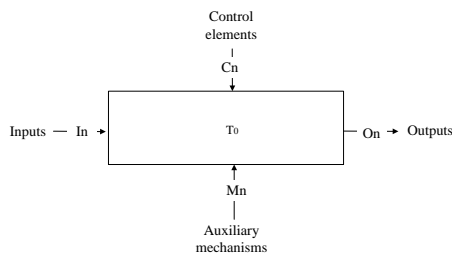


Figure 1. Graphical image of Activity Box

Central to the entire modeling technique is the key goal, which we denote as T_0 . In our case, it will ensure legal protection of competitive advantages in the system of innovative management of sustainable development and planning.

It should be made clear that the modeling mechanism begins with the determination of the steps to reach T_0 . Next, it is determined what will be at the input, that is, what kind of resource support. Exit means getting a certain result. Further, all this is systematized and formed already through the software, the model itself.

In fact, the goal determines the relevant areas in the system under study, which need to be focused on first. Further formed on the main of all this, is the main multifunctional model. It should be noted that the above Activity Box is referred to as the parent box concerning the diagram (Parent Box), and the diagram to which it belongs is called the Parent Diagram. In general, each stage and process is presented in the main block of the multifunctional model; it can also be detailed (Figure 2).

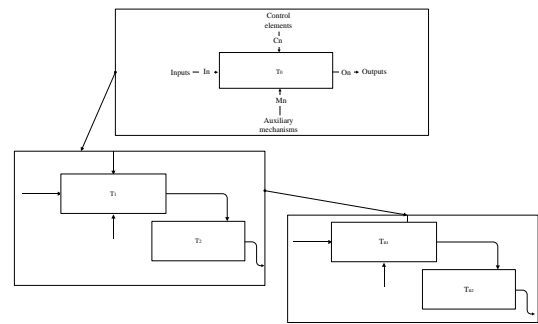


Figure 2. Theoretical visualization of modeling technique

It should be noted that the main goal T_0 must adhere to the following equality (1):

$$T_0 = \{ T_1, T_2, T_3, \dots, T_n \} \quad (1)$$

In this case, all processes and stages in the form of $T_1, T_2, T_3, \dots, T_n$ has both their sub-processes and sub-stages in the model for better detail (2):

$$T_n = \{ T_{n1}, T_{n2}, T_{n3}, \dots, T_{nm} \} \quad (2)$$

Typically, the development process is iterative and consists of the following conditional steps:

1. Creation of a model by a group of specialists or specialists belonging to different processes and fields of activity (in our case, this is the legal protection of competitive advantages in the system of innovative management of sustainable development and planning). Building a multifunctional model is a dynamic process during which the authors explore different aspects of the object.

2. Distribution of the draft for consideration, approvals, and comments. The author, in turn, also agrees with the criticism in writing or rejects it with a statement of the logic of the decision and again returns the corrected draft for further consideration. This cycle continues until authors and readers reach a consensus.

3. Model approval. The approval of the agreed model occurs if the authors of the model and the readers do not disagree on its adequacy. The final model is an agreed representation of a particular process or activity of the socio-economic system.

4. RESULTS OF RESEARCH

To carry out the modeling technique, one should decide on a socio-economic system, which will be an example for demonstrating the decomposition of the model. We chose Minnesota State, unique in its specifics, as such a socio-economic system. The choice was not accidental, but taking into account its unique specifics of protecting its own competitiveness and the actual habitats of the authors of the article.

Of course, we will form an Activity Box for our socio-economic system (Figure 3).

First of all, when modeling, it is necessary to determine which stages will contribute to the achievement of the main goal. Thus, it should be noted that T_0 must be achieved by a series of stages presented in Figure 4.

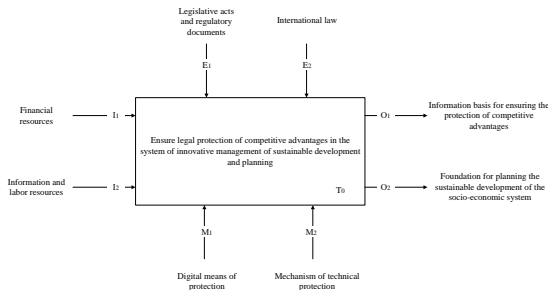


Figure 3. Activity Box of achieving T_0

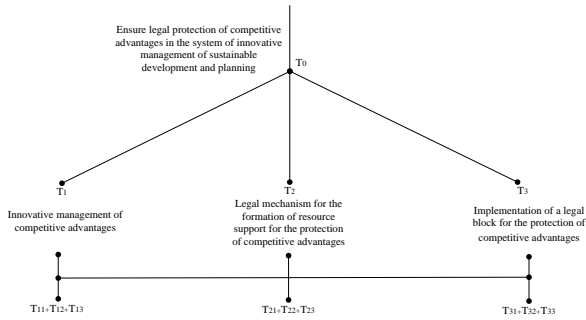


Figure 4. Key stages of achieving T_0

According to the modeling technique, we will form the main multifunctional model for ensuring the legal protection of competitive advantages in the system of innovative management of sustainable development and planning for a particular region (Figure 5).

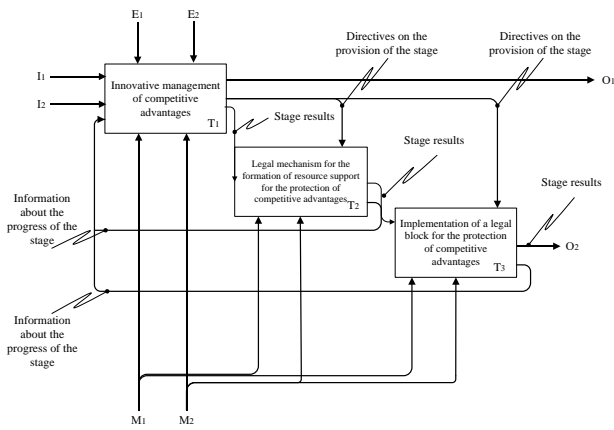


Figure 5. The main multifunctional model for ensuring the legal protection of competitive advantages in the system of innovative management of sustainable development and planning

T_1 – Innovative management of competitive advantages. Innovative management of competitive advantages is a system of measures for continuous improvement and sustainable development of the socio-economic system. Innovation management is an aspect of management aimed at creating and growing and protecting competitive advantages for sustainable development and planning.

T_{11} – Analysis of competitive forces. The purpose of such an analysis is to identify opportunities and dangers that the socio-economic system may face.

T_{12} – Building a logical concept of innovation management. Elimination or reduction of the number of negative factors

affecting the legal protection of competitive advantages in the innovation management system.

T_{13} – Implementation of measures to increase the level of competitiveness. Improvement of innovative activity, the introduction of the latest information, financial and accounting technologies to increase competitiveness and, as a result, ensure sustainable development (Figure 6).

T_2 – Legal mechanism for the formation of resource support for the protection of competitive advantages. Sustainability and planning is a processes that must be constantly resourced. For this, an extremely important stage is the formation of resource potential (Figure 7).

As for stage T_2 , any action to protect the competitive advantages of the socio-economic system is possible if resources exist. Consider the sub-processes for this stage:

T_{21} – Formation of resources. The formation of resources of economic and social potential is directly dictated by human decisions, which determines the possibilities of regulation and formation of this type of resource. The formation of ecological potential resources is the longest process, which depends on the basic conditions of the planet's existence, and is also determined by anthropogenic influence, while competent human regulation of the formation of ecological potential resources is the only way to preserve their diversity to ensure the protection of competitive advantages and sustainable development.

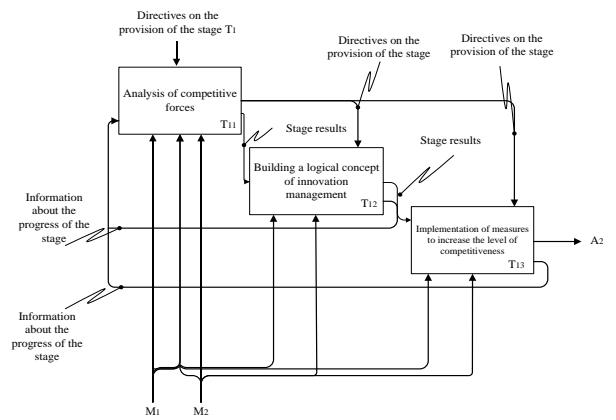


Figure 6. The multifunctional model of the first level of reaching the stage T_1

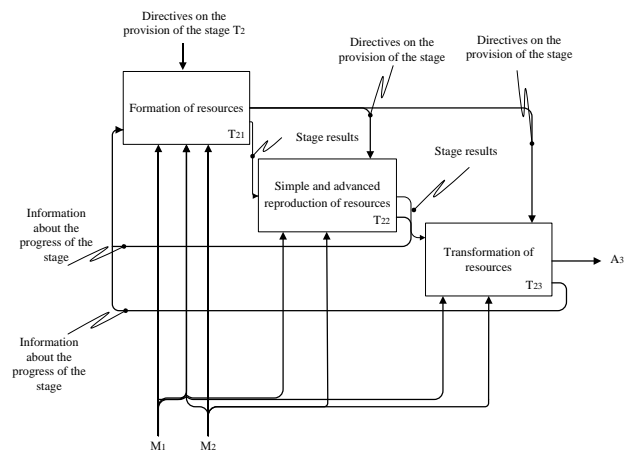


Figure 7. The multifunctional model of the first level of reaching stage T_2

T₂₂ – Simple and advanced reproduction of resources. Many types of economic resources may not go through this stage of resource potential formation at all (for example, investments may immediately turn into financial resources). The reproduction of investment and financial resources is realized by reinvestment and refinancing, as well as their additional involvement such reproduction is extended. Innovative resources mostly bypass this stage, because when an innovative resource is reproduced, it loses its innovative quality and becomes part of other resources, in particular, production resources in the innovation management system.

T₂₃ – Transformation of resources. All types of resources go through this stage of formation in a certain period, while new types of them may appear. Ecological resources, like natural resources, go through all phases of resource potential formation with the only difference being that their reproduction is influenced by all spheres of activity and people's way of life. The ecological potential is the largest shaky system, often not regulated within the framework of one state or settlement, and its preservation is a problem for the entire world community. Therefore, in the first stage, natural resources are formed over a long period without human intervention, but human activity significantly affects the course of this process. The reproduction of natural resources and the natural environment is a long-term process that is weakly amenable to regulation from the outside. The resources of social potential, in addition to demographic and labor, mainly go from the stage of formation immediately to the stage of consumption and provision of competitive advantages.

T₃ – Implementation of a legal block for the protection of competitive advantages. This stage provides the prerequisites for obtaining the desired result of providing legal protection of competitive advantages (Figure 8).

T₃₃ – Establishing effective interaction with the elements of the interface block. Using the capabilities of the subjects of the external environment for better formation, reproduction, and efficient use of resource potential to protect competitive advantages.

At the moment, the study has been built and the established stages concerned a specific region, the specifics and peculiarities of which the authors know best. Other regions require different stages and possibly completely different directives.

5. DISCUSSIONS

Discussing the results of the study, it should be noted that the study of the issue of the legal protection of competitive advantages in the system of innovative management of sustainable development and planning is not a new issue in the scientific community. The problem of the legal protection of competitive advantages in the system of innovative management of sustainable development and planning is the focus of many scientists [13-15].

The vast majority of scientific research on this issue is focused on the production concept of innovative development, which focuses primarily on product and technological innovation [16]. However, in the conditions of an unstable, rapidly changing economic environment, increased competition, not only product innovations but also organizational innovations, in particular, the development of effective legal protection of competitive advantages in the system of innovative management of sustainable development and planning, become key success factors.

Koval et al. [17], Maceika and Jančiauskas [18], considering issues of the legal protection of competitive advantages in the system of innovative management of sustainable development and planning, resort to analyzing this issue exclusively theoretically while ignoring the fact that in today's conditions of instability and high competition, the practical part of this issue plays a key role. With this in mind, we focused on the formation of a practical model of the legal protection of competitive advantages in the system of innovative management of sustainable development and planning.

A group of scientists Podra et al. [19] consider the issues of ensuring competitiveness before the use of intellectual resources and human capital in the process of implementing innovation management. We partially agree with the key importance of these elements in the issue of providing competitive advantages in the system of innovative management of sustainable development and planning, but we believe that in this case, special emphasis should be placed on the issue of the legal protection of competitive advantages, given that it is the effectiveness of the above factor that will protect not only intellectual property of the socio-economic system but also the process of its development in a competitive environment.

The analysis of Wendra et al. [20] about the main provisions of modern concepts of the development of competitive advantages in the context of innovative management of sustainable development and planning once again confirms the conclusion that in the context of global informatization of social and economic processes that form the basis of the information economy, the priority components of the economic behavior of industrial enterprises should be the

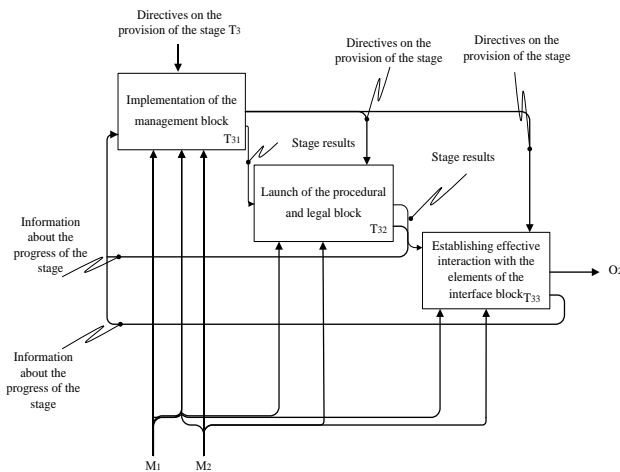


Figure 8. The multifunctional model of the first level of reaching stage T₃

T₃₁ – Implementation of the management block. Implementation of several organizational and legal measures related to the formation of a management system, the definition of goals, objectives and tasks, functions, principles, and strategic provisions concerning the legal protection of competitive advantages.

T₃₂ – Launch of the procedural and legal block. Planning, preparation, and implementation of several related measures in the appropriate sequence within the framework of institutional, organizational, economic, technological, and informative tools.

development of opportunities to acquire competitive advantages through the creation of new knowledge and the effective use of their potential through implementation in various kinds of innovations. This indicates the priority of innovative factors in the formation and development of the competitive advantages of socio-economic systems. But most of these studies only form the general basis of this process, without going into either theoretical or practical specifications, while our study has largely systematized and detailed this process.

Testing the model may be the next step, which will take some time and in the future its results will be part of a new article. A separate staff was required for a clear and real example of the application of the model. Today it is extremely difficult to form a universal model when it comes to sustainable development. Many individual factors influence this.

6. CONCLUSIONS

Summing up, we can say that in the context of economic changes around the world, the competition of producers for the limited demand of consumers is growing. Competing in the markets, socio-economic systems seek to acquire and retain competitive advantages in order to increase their competitiveness. In market conditions of management, the competitive advantage of the socio-economic system is the introduction of innovations. Today, one cannot bet only on increasing profits, but simply increasing innovation or competitive advantages. The socio-economic system should strive to become different, better, and successful from others by introducing innovations. The key strategy for this should be to move from a concept focused on some result of innovation to business model innovation: new management technology, non-traditional strategy (for example, corporate), and the ability to use innovation as well as quality. Innovation should not be a means to achieve any goals of the organization, but the goal itself.

As a science and art of management, innovation management, in the context of protecting competitive advantages, is based on the theoretical principles of general management, among which are the defining laws and patterns of dynamic systems, principles, functions, forms, and methods of purposeful activity of people in the process of managing these systems. Art, as a functional element of innovation management, ensures the full use of knowledge, ideas, and experience, the adoption of creative decisions by managers and specialists, and the development of the initiative of all participants in innovative activities in the organization. As a type of activity and the process of making managerial decisions, innovation management is a set of procedures that form a general scheme for managing the innovation process. This set consists of the corresponding management functions, each of which is divided into separate types of work (stages) associated with the multifaceted activities of the socio-economic system and performed in the appropriate sequence.

From the point of view of a socio-economic system (corporation), the mechanism for managing innovation activity is always specific, since it is aimed at achieving specific innovative goals by influencing specific factors that ensure the achievement of the intended goals, and this influence is carried out with the help of specific resources or potentials of the socio-economic system. Thus, innovation

management is a set of economic, motivational, organizational, and legal means, methods, and forms of managing the innovation activity of a particular management object in order to obtain the economic results of this activity optimally.

The need to introduce management innovations into the management system is due to the increasing intensity of competition and the desire to secure a stable position in the market, and achieving a high level of competitiveness is possible through the formation and use of consistent management technologies and innovations: revision (adaptation) of corporate and competitive strategies through foresight mechanisms changes, renewal (optimization) of the product range based on monitoring the competitive environment and harmonization of product life cycles, formation of a system of socio-economic system risk protection, optimization of the capital structure and ensuring the solvency and liquidity of the socio-economic system, building mutually beneficial partnerships with suppliers, consumers, and market infrastructure institutions, organizational transformations.

In conclusion, it should be noted that the object of the study was the protection of competitive advantages in the system for ensuring sustainable development of a particular region taken. The modeling case was through a certain goal and stages, to present everything in such a way that they are hierarchically ordered in the future.

The study has limitations in the form of the inability to effectively evaluate the model in practice in many socio-economic systems due to the lack of access. Further research should be devoted to the possibilities of expanding the model and its elements. It should be noted that the accompanying element through the mechanism (M_n) in the research model in this article changes with the change in research cases. In the future, aspects of the practical applicability of the proposed model should be expanded.

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