

# Analysis of the effectiveness of change in innovative ecosystems

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**Abstract.** This study presents the results of the study of the effectiveness of changes within the framework of innovation ecosystems. Based on the authors' analytical studies of the historical aspects of the development of different-level innovation ecosystems, identifying opportunities for scientific approaches in the development of managerial innovations, systemic evaluation of the competitiveness of changes implemented in the context of innovation ecosystems, the task of forming a model of an aggregate integral indicator that characterizes the competitiveness of changes of managerial nature, within ecosystems was formulated and solved. As a result of the conducted scientific research the necessity of analysis and assessment of efficiency of managerial changes was substantiated, the essence of efficiency of functioning of ecosystems management was revealed and characterized, the formula determining the dependence of competitiveness of ecosystems management on the achieved level of its competitive advantages was developed. The main outcome of this study is the conclusion that the degree of effectiveness of managerial changes, within the ecosystem under study, is directly dependent on the state of the internal environment of the innovation ecosystem under study, as well as its external environment.

**Keywords:** innovation, ecosystem, change, competitiveness of managerial innovation

## 1 Introduction

The fundamental dominants of economic development in the region, as well as the country as a whole, are innovation ecosystems. In the course of their functioning, they also need to develop, and therefore there is a need for the formation and implementation of innovations, within the internal environment of ecosystems. As one of the main types of innovations are managerial innovations, designed to transform the structure, methods, as well as the management system, in order to achieve the optimal flexibility, dynamism and adaptability of ecosystem management.

The present study is relevant, since it has not only theoretical, but also practical relevance, in the context of the study of the fundamental aspects of the implementation of transformations within the innovation ecosystem, acting as factors of growth of the effectiveness of business

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management innovation, as well as increasing the level of its competitiveness.

## **2 Materials and Methods**

The fundamental managerial problem, on the solution of which the present study is directed, is the need to determine the possibilities of achieving compliance of the implemented managerial innovations with the essence of the tasks facing it. In addition, the issues of increasing the level of impact of implemented managerial innovations on the final results of the innovative company and, in addition, ensuring the management of innovation processes are actualized.

Both domestic and foreign authors conducted studies of theoretical as well as scientific and methodological issues of the problems formulated / Most of the publications in the framework of the mentioned scientific problem are focused on the development of models of innovation ecosystems at the regional, corporate, educational organization level and, in addition, in these studies the properties of the specified ecosystems are defined.

The underlying purpose of the study is the scientific substantiation of the fundamental aspects of the analysis and assessment of managerial changes of organizational character, carried out in the context of innovation ecosystems.

## **3 Results**

Currently, the innovation ecosystem is an open network community in which employees implement their capabilities to achieve, planned to achieve the innovative result. Dominant in the knowledge economy is teamwork, ensuring coherent interaction, as well as providing project activities, due to which the established hierarchical relationships are leveled. It should be noted that at each level of the ecosystem the preservation of these principles is ensured [1,2,3].

As an example we can give an ecosystem on the world level, within which there is a need to form an environment for the partner solution of problems of global character; within the ecosystem of national character it is necessary to form conditions for the formation of new ideas, through the functioning of various institutions, entrepreneurs, funds; on the regional level, in order to solve the production research objectives are used infrastructure facilities.

Thus, traditional inflexible methods of management carry out deterrence of innovative development, and also influence in a negative way on economic activity of the companies, do not allow to motivate employees, thus innovations of administrative character pursue the purpose growth of competitiveness, and also financial stability of the companies by means of motivation of the personnel, applying various methods of development of decisions, various stimulating influences on the personnel of the company, allowing to define the contribution of manager.

In this regard, the formation of an effectively functioning ecosystem structure of an innovative nature in the company, it is necessary to implement, based on a variety of new approaches to ensure the effective functioning and management of the company, the main purpose of which is to achieve high performance indicators, a significant degree of sustainability of operation, as well as growth of the economy as a whole.

In the course of research in relation to identifying opportunities for integrated use of scientific approaches in the development of managerial innovations, the following should be noted.

Effectiveness of company management is characterized by the validity of the methodology of solution of the formulated problem. Efficiency of management implies the relationship between the two values - achieved and planned values of productivity, which characterizes the opportunities for growth of company performance. There is a significant number of approaches to company management, which are usually classified into two groups: pragmatic simple and

scientific complex [4,5]. The main approaches to management include the following: marketing, process, complex, integration, normative, administrative, behavioral, quantitative, situational, systemic and so on. In the practice of change management in the company, systemic, situational, process approaches, as well as their various variations, are most used. These approaches are methodologically verified, focused on the study of certain aspects, characteristic only for specific approaches, within the framework of management, in case they are applied in their original form.

It should be noted that the use of only one approach to management significantly narrows the result, because in this case, some aspects of the study are analyzed comprehensively, while others are not addressed at all. In this case a complete picture of research within the object of management is not formed, and all "bottlenecks" of the company are not reflected.

Otherwise, with the chaotic application of a set of scientific approaches, there is a problem of disruption of the organization of the company, as well as its personnel, which leads to confusion within the functions performed by employees, and ultimately leads to the instability of the company.

In practice of management of the companies usually existing lacks and restrictions, within the limits of the traditional approach are leveled in case of its addition by one, or set of several combined approaches. The specified is explained by the fact that nowadays the combination of combined approaches is effectively applied for providing organizational changes and acts as the most effective possibility to introduce changes in the company activity with the best results. Such a combination of approaches should include system-situation, process-system approaches.

During the comparative analysis of existing scientific approaches for the development and scientific substantiation of management decisions the following groups of approaches were identified, their essence was determined, their advantages and disadvantages were identified.

As the first group of approaches identified the classical approaches, which are based on the reference ideas about the management of the company. The main advantage of traditional approaches is a significant experience of their use, as well as the existing possibility to use any classic approach, by adapting it to the current situation. As a disadvantage of classical approaches, it is impossible to use them in their pure form without adaptation, because there are some methodological limitations [6,7].

The next scientific approach used in management is the project approach, which implies that the implementation of changes is a separate project. The main advantage of the project approach is the availability of a large number of specialized methods of research, as well as management. The disadvantage of the project approach is the lack of focus on the components of the company as a whole, as well as the lack of consideration of the interactions between them. In addition, it is impossible to apply the project approach as a universal one on a permanent basis, in connection with which the existing methods of project management need to be constantly adjusted.

The next approach is the system approach, the main essence of which is the object for changes (transformations), which means the system, which has certain properties, as well as a subsystem or element of this system, which have an inextricable relationship with it. The main advantage of the system approach is its universality, as it combines a set of management concepts and allows you to solve a variety of problems, in the context of change management. As the main disadvantage we can highlight the lack of opportunity to describe the mechanism of influence of factors on the functions of company management, as well as the inability to determine the dominant factors, in order to solve specific problems of change management in the company [8,9,10].

As the next approach that was analyzed, we chose the situational approach, the main content of which is the thesis that the current situation determines the content, as well as methods of management in the company. The fundamental advantage of the situational approach is flexibility in the course of providing management, in connection with which a variety of

methods can be involved in the study. The fundamental disadvantage of the situational approach is the impossibility of preventive formation of working algorithms, by which it is possible to choose methods of solving problems for various situations, in connection with which it becomes impossible to determine the amount of necessary resources. In addition, as a disadvantage of the situational approach can be highlighted the fact that the transition from one company management algorithm to another in the process of its implementation, does not allow to consolidate the result. In this case there is a probability of wrong choice of management method when searching for the most effective one.

The process-system approach implies that the change is a set of actions of sequential nature, as well as a set of subsystems of procedural actions within a single system. The main advantage of this approach is the possibility to provide the interrelation of tasks of the organization, as well as changes. In addition, this approach preserves the interrelation of elements of the subsystem performing various functions. Also at the given approach the holistic view, within the limits of the content and process of change as such is observed. The main disadvantage of the system approach process should include its similarity with the strategic management, as well as focus on the change mainly in the external environment and lack of certainty within the technology of change management.

The next approach for the development of managerial innovations is the so-called human factor approach. It is based on the postulate that the personnel is the main factor causing changes, as well as conditioning their result. As fundamental tasks of successful management of changes during the use of the human factor approach, it is provided to provide management of social interaction, as well as management of resistance of the personnel. As the main positive moment of the given approach the possibility of application of various methods of motivation, and also teambuilding by means of which possibility of optimization of expenses of resources necessary for carrying out of changes and reception of final result raises. In addition, the positive point of this approach is the fact that the management of resistance of personnel allows you to find a permanent application of change. As the main disadvantages is the view that compromises with staff can have a negative impact on the achievement of goals that involve change. In addition, this approach will be effective only if the company has a strong organizational culture, a high level of employee initiative, as well as the availability of sufficient time to implement changes.

The totality of the considered approaches used in the development of competitive managerial innovations acts as a methodological framework for research. Thus the specified approaches have both advantages and lacks which should be considered at a choice of the applied approaches. The peculiarity of these approaches is that the main attention at their use is focused on internal procedures of carrying out changes in the company.

The part of the specified approaches is focused on the company as on open system, estimating influence on it from external environment, however, further the internal environment, and also "bottlenecks" in the internal environment of the company dominates in research. The specified can lead to development and introduction of changes, in isolation from external influences of the company. Following such research, the planned result of the implemented changes, most likely, will be achieved, adjusted for the serious risk of irrelevance of the result at the time of its receipt. In this connection there is a significant threat of loss of time and resources on maintenance of changes, within the researched company.

The success of managerial innovations of the company depends not only on the internal, but also on the external environment, as well as on the changes occurring in them. The optimal way out of this situation is to apply a set of scientific approaches to management, which would take into account changes in the external environment, including covering interaction with counterparties, as well as in the internal environment of the company.

## **4 Discussion**

The issues of implementing a systematic assessment of the competitiveness of changes in companies of innovative nature, functioning within innovation ecosystems should be investigated and solved by conducting an analysis of the approach based on the assessment of the effectiveness and competitiveness of change management in the company.

The effectiveness of changes in the company is largely determined by the content of such changes, as well as the effectiveness of management of the business entity. Strategic activity of any company is focused on obtaining competitive advantages, by means of development and realization of changes, allowing to strengthen its position on the market of goods and services. The main result of strategic activity of the company is the increase of competitive advantages, within all types of activities of the company, as well as the management system and functional areas.

Management of changes in the innovation ecosystem will be effective when the specified innovation ecosystem has the necessary competitive advantages, which in turn meet the needs of the market, and their potential value causes the need to form opportunities to achieve a new goal of a higher level and develop conditions for sustainable development of the company [11,12,13].

Implementation of organizational changes within the innovation ecosystem should be carried out with the involvement of effectiveness monitoring, which allows a qualitative assessment of changes, as well as preventively to see the problems, as well as existing shortcomings. The model of assessment of the effectiveness of managerial changes is implemented through several stages, among which can be distinguished: the formation of requirements for the assessment; organization of the technology of assessment, the choice of a set of indicators for the assessment and analysis of the results of the analysis.

The fundamental requirements for the assessment of the effectiveness of change management are as follows: comprehensiveness of assessment; the need to achieve effectiveness in both internal and external environment of the company; ensuring integration between the strategic, as well as operational levels of management; achieving consistency between the studied indicators; timeliness of assessment [14,15].

The degree of effectiveness of organizational change management of the innovation ecosystem is determined by means of its key characteristics. The totality of calculable indicators should reflect the fundamental tendencies of directions of activity of the companies within the financial position, internal processes of functioning of the company, as well as the external environment.

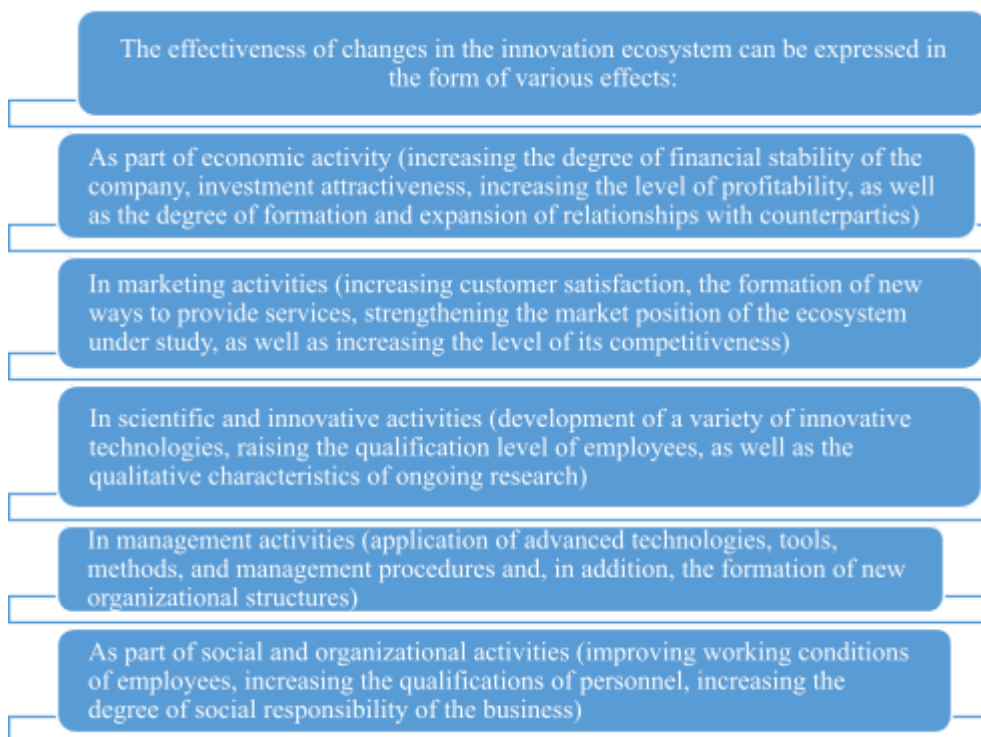
The effectiveness of organizational changes in the innovation ecosystem can be expressed in the form of various effects.

Within the framework of economic activity, the effect will be expressed in an increase in the degree of financial stability of the company, investment attractiveness, an increase in profitability, as well as the degree of formation and expansion of relationships with counterparties.

In marketing activities, the effect will be expressed in an increase in customer satisfaction, the formation of new ways to provide services, strengthening the market position of the ecosystem under study, as well as the growth of its competitiveness.

In scientific and innovative activity, the effect of changes will be expressed in the development of a variety of innovative technologies, increasing the qualification level of employees, as well as the qualitative characteristics of the research.

In managerial activity the effect of changes will be realized through the application of advanced technologies, means, methods and management procedures and, besides, the formation of new organizational structures.



**Fig. 1.** Effects depicting changes in organizational activity in the innovation ecosystem.

Within the framework of social and organizational activity the effect of changes will be manifested, by improving working conditions of employees, increasing the qualification characteristics of staff, increasing the degree of social responsibility of business and so on.

The implementation of changes in the innovation ecosystem can be evaluated from different positions, but the key point is the dependence of the degree of effectiveness of organizational changes on the level of interaction of the internal environment of the company with the external environment. Thus, any managerial innovations will be effective if the company carries out analytical research of economic development trends both at the regional and national levels, monitoring the development of various market segments, competitors and, in addition, successfully organizing the activities of the company's personnel.

## 5 Conclusion

In modern conditions of development of economy of our country differs dynamism and unpredictability, in connection with what there is a need for development of innovative ideas in all spheres of functioning of the company. In this regard, there is a great need to study the issues of formation and implementation of managerial innovations, as well as the assessment of their effectiveness. Of particular importance in this context is the development of innovative ecosystems that contribute to the development of the national economy. The degree of competitiveness of innovative ecosystems is directly dependent on the process of change management, as well as on the right choice of scientific approaches. The present study provides a rationale for the choice of company management methods, reveals the essence of the requirements for assessing the effectiveness of change management, as well as formulates the

effects of organizational change, which can be applied in the practical activities of innovative ecosystems of a different level.

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