Innovation management in conditions of intensive ecological and economic development

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Abstract. In modern conditions, without the implementation of projects related to the introduction of new technologies and developments, taking into account the environmental and social responsibility of business, it is impossible for companies to achieve sustainable development. The article studies the problems of innovative activity and submits the model of management in conditions of intensive development. The purpose of the creation of the model is in business activity streamlining. The proposed model of innovative activity management comprehends the influence of disruptive innovations and gaps caused by innovative technologies. Nowadays the lack of organizational mechanisms in the field of innovative activity management has negative influence on competitiveness of commercial organizations. Intensive development of technologies requires new mechanisms of management. The usage of the presented model creates conditions for rapid development of the most prospective ideas and implementation of new efficient innovative technologies.

1 Introduction

Intensive development of innovative technologies opens wide opportunities for commercial companies. At the same time, it can become the reason for the loss of their competitive market position. Innovative technologies may be the reason for destruction of established production processes, ways of management, logistics and distribution. In such conditions, the necessity in finding new ways of management is becoming crucial. Changes caused by dynamic innovative activity concern production process, organization, distribution, logistics, marketing, and many other fields. Companies are to make significant revision of their organizational structure, to change function or create new departments, or develop new innovative projects.

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Innovative activity leads to transformations of the socio-economic relations in society. Innovation is becoming an important factor in the development of the economy; nowadays countries cannot achieve economic growth without commercialization of scientific and technological progress. Rapid comprehending and implementation of prospective innovations can become significant competitive advantages for commercial companies as the emergence of an innovation in one area can be effectively used in other fields. Availability of useful but not used opportunities and information can nowadays be the reason for loss of competitive positions of organizations. Relevant introduction of prospective innovations is a complex task.

Development of procedures facilitating decision-making processes in conditions of intensive development is especially required.

Nowadays the lack of organizational mechanisms in the field of innovative activity management has a negative influence on competitiveness of commercial organizations. Intensive development of technologies requires new mechanisms of management. The usage of the presented model creates conditions for rapid development of the prospective ideas and implementation of new efficient innovative technologies.

2 Materials and methods

In the framework of this study, we set a goal related to the analysis of innovative activity in the framework of intensive development. To achieve this goal, the following tasks were proposed:

- To analyze the intensive development of the national economy.
- To present mechanisms aimed at ensuring innovative development.

In the course of the study, such methods as abstraction, formalization and modeling were used, as well as methods of historical, comparative and system analysis, which allowed the authors to achieve their goal.

3 Results

In spite of all the intensity and high speed of development, digitalization in the whole world including Russia takes place in difficult conditions. According to the Russian Ministry of economic development, dated from August 07, 2019, in the second quarter of 2019, there was a further cooling of global economic activity.

The global composite Purchasing Managers' Index (PMI), reflecting the level of business activity of purchasing managers continued to decline in the second quarter of 2019 and rated at 51.5 compared to 52.5 in the first quarter of 2019). It was mainly due to the negative dynamics of industrial production in developed countries. The Euro zone industrial production index has been in negative area since November 2018.

PMI is obtained as a result of survey of purchasing managers' opinions. It assesses their intentions for increase to decrease volume of purchases. The rate above 50 indicates rise, below 50 points means the decline [9].

As the result of the slowdown in China's GDP growth and deteriorating statistics for the Euro zone, oil prices fell to their lowest value since January 2019. At the same time the United States grew the volume of oil production, and at the end of May 2019 it reached the new record (12.4 million barrels per day).

In the Russian Federation, the digitalization of organizations can significantly increase their efficiency and become important factor for development of domestic economy. The digitalization of the economy already has the impact on the activity of organizations. A target problem of the present period of our country development is supply of high growth

rates of the gross domestic product, the further accumulation of production efficiency and achievement because of this high level and quality of life of the population [6].

Digital transformation of domestic enterprises has become the necessity. The modern business environment is characterized by variability [8]. As a rule, the digitalization of domestic organizations is the result of diffusion of innovations. Nowadays the implementation of information technology is opening up vast vistas for business development and helping boost the efficiency of activities [18].

The study of trends in the development of innovative technologies permits to take relevant decisions aimed at both maintaining existing positions and intensive innovative development.

Digitalization can become an effective tool to intensify the development and increase the efficiency of numerous processes related to both the production and management system [16]. In modern conditions of rapid development, it is crucial for commercial organizations to manage efficiently their innovative activity. Technology characteristics change over time. They are becoming cheaper; it is possible to use them in areas that are more diverse.

Technologies are acquiring the ability to interact with each other. The most important information arises in the process of development, creation and promotion of innovative products, that is, in the process of innovation [14, 19-21].

However, long-term implementation of design works often leads to the loss in competitiveness. Such losses can be compensated by rapid modernization of production processes based on implementation of the latest technology achievements.

The most important component in maintaining the competitive position of a modern organization is to work on adapting its activity to new conditions, tracking trends in the development of technologies and adjusting the strategy of the organization in accordance with them.

The research and consulting company "Gartner" annually publishes the results of its analysis in the field of the emergence and development of new technologies, among the top ten strategic technology trends in 2020 there are:

- Hyper automation.
- Multiexperience.
- Democratization of technology.
- Human augmentation.
- Transparency and traceability.
- Strengthening of the periphery (The empowered edge).
- The distributed cloud.
- Autonomous things.
- Practical block chain.
- Artificial intelligence security [10].

These trends are mainly structured around the idea of "people-oriented intellectual spaces". Modern intensification technology development is largely determined by the trend of production organization focused on meeting the individual requirements of each customer. However, due to the uncertainty characteristics of incoming orders, a problem of constructing the control algorithm by taking into account the reactions of its employees to random customers' requirements arises. This problem can be solved by providing the functional reliability of business processes [11]. Business structures, in comparison with state institutions, have greater mobility, efficiency in making management decisions; they are characterized by greater initiative in generating innovations [7].

The use of digital technologies allows reducing required time for fulfillment of work, expanding the ability to work with large amounts of information, improving quality of

processes [17]. The innovation introduction is influenced by the specifics of changes in technological processes, diffusion of innovations, and development of new information technologies [1, 13, 15].

Commercial organizations have to recreate clumsy systems of management, so that they could be able to advance in accordance with rapidly changing modern trends [2]. Sometimes realization of a prospective project cannot be fulfilled successfully due to technical problems [3-5, 22].

Since the introduction of new knowledge in practice is a risky affair, each decision about introduction of an innovation should be based on detailed analysis of the particular situation.

4 Discussion

Intensive development emerges as a result of a certain shift. It can be the shift in technology, methodology or mentality. Anyway implementation of innovations causes the changes of traditional conditions.

Within the fulfilling the present research the experience and practice of numerous successful Russian and foreign companies has been studied.

The model presented in this article is created to facilitate the decision-making process. Its usage allows planning work in conditions of disruptive innovations emergence.

Among modern problems in development of innovative activity of commercial organizations there are the following challenges:

- Scientific progress and emergence of disruptive innovations.
- Clumsiness of existing systems of adaptation to changes.
- Technical problems in realization of an idea.
- Security of data possessed by artificial intelligence.

Management of innovative activity in conditions of intensive development combines nowadays-traditional methods such as implementation of PESTEL and SWOT analysis with necessity to adapt to emerging disruptive innovations.

New innovative technologies and disruptive innovations cause gaps in production process destruction, lead to emergence of new cheap or functional substitute of the produced product. They can reveal new ways of customer's demand satisfaction, cause reduction of costs, or derive the improvement of quality.

Disruptive innovations are able to cause changes in technology of the process, materials, methods, or disposable capabilities.

As the result of work with gaps, caused by disruptive innovations introduction, new efficient chains of processes occur. They can provoke development of innovative projects or creation of new departments in the structure of the company. Partial or complete changes in management, production process, distribution and logistics lead to alteration in processes and activity of the company.

The process of functioning of the model of management of innovative activity in conditions of intensive development is schematically shown on the Figure 1.

Prompt adaptation to changes is a difficult task. Introduction of the submitted model can help in maintaining the sustainability of a company and facilitate its adaption to market changes, increase efficiency of decision-making processes, adaption to changing environment, streamlining the innovative activity.

Digital technologies have numerous opportunities for being used in diverse fields. The more and more companies conclude that constant creation of new prosperous projects is necessary to maintain their positions on the market. In case new projects do not prove to be profitable within several months, companies stop its financing.

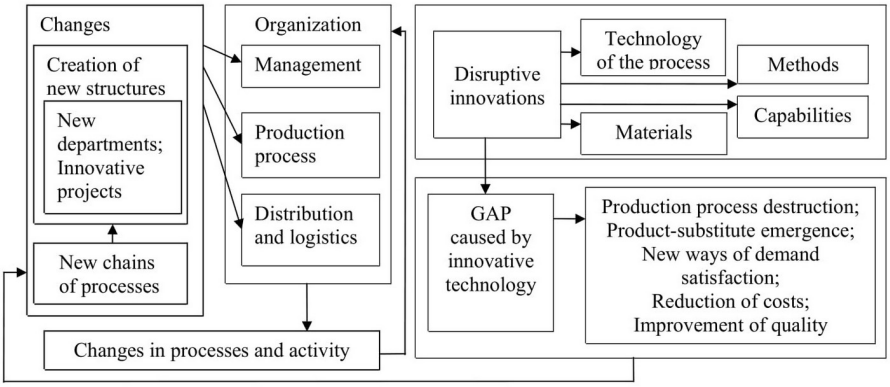

Fig. 1. The model of management of innovative activity in conditions of intensive development.

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The successful transition to a new level of development cannot happen spontaneously. Intensive development of enterprises is always the result of a combination of favorable conditions and significant purposeful work in this direction.

5 Conclusion

In modern conditions of rapid development, it is crucial for commercial organizations to manage efficiently their innovative activity. The development and implementation of the model of management in conditions of intensive development can increase efficiency of decision-making process; it can be of help in adaption to changing environment, streamlining innovative activity, and finding new opportunities.

Commercial organizations have to overcome multiple obstacles and settle various problems for maintaining their market positions. They have to adapt to changing external environment, emergence of disruptive innovations, and other results of scientific and technical progress. They also have to recreate clumsy systems of management and organization existing in companies, so that they could be able to advance in accordance with rapidly changing modern trends. Introduction of new ideas can not only be expensive, but also cause temporary reduction in profit of the whole company.

Sometimes realization of a prospective project cannot be fulfilled successfully due to technical problems.

One of the greatest challenges has become introduction of artificial intelligence in different fields of life. It can sufficiently facilitate fulfillment of works, reduce quantity of mistakes, time, and expenses. At the same time, society demands it to be explainable and governable. Appliance of artificial intelligence also creates new vulnerabilities and new potential points for attack. The question of providing security of information becomes especially crucial.

The presented model can be used as a tool for rapid development in competitive environment, for prompt implementation of new prospective innovative technologies.

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