International Journal of Applied Engineering Research ISSN 0973-4562 Volume 10, Number 18 (2015) pp 39398-39403

Features of formation of the system of innovative development of the industrial enterprise

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Abstract
Modern conditions of functioning of industrial enterprises that are characterized by a high degree of uncertain behavior of the environment, as well as constant increased competition, determine the need for continuous improvement of not just production technologies but also control systems of various aspects of their production and business activities. In this regard, the formation of the system of innovative development of the industrial enterprise becomes a determining condition to further improve its competitiveness. However, the formation of such a system is connected with the need to resolve a number of methodological problems aimed at defining the concept of "the system of innovative development of the enterprise", its place in the system of strategic management of the enterprise, as well as at identifying the main stages of its formation. The article examines the existing approaches to the management of innovative activity of enterprises. Particular attention is paid to the definition of "the system of innovative development of the enterprise". A hierarchy of elements of the system of innovative development of the enterprise is suggested. The position that the system of innovative development of the enterprise must be logically built at all levels of its strategic management, including corporate, business and functional strategies, is substantiated. The steps of forming the system of innovative development of the enterprise that link developed and implemented innovative activities with the goals of the operation of the enterprise at different levels of strategic management are proposed.

Keywords: innovations, enterprise, system of innovative development, strategic management, competitiveness.

1. Introduction

The globalization of the world economy is accompanied by "erasing" the boundaries of national markets for goods and services and increasing competitive pressure from business representatives from other countries. Producers switching to innovative development is possible reaction to changes. All this predetermines the need to address a number of tasks aimed at creating the appropriate theoretical framework for the formation of so-called innovative economy. However, their solution is constrained by virtue of different kinds of reasons, including, above all, the lack of scientific and methodological support necessary for the construction and operation of systems of innovative development in enterprises in different industries and areas of activity.

It should be noted that quite a lot of works in the specific literature were devoted to the various aspects of innovative development. However, to date there is no single point of view on such concepts as innovation, innovative activity, innovative development. Innovation as an economic category is studied in the works (Schumpeter, 2007), (Twiss, 1986), (Adams *et al*., 2006). A number of scientists are considering innovative processes in relation to the scientific and technological revolution, as well as the cyclical development of the economy (Cooper, 1984), (Kuzyk *et al*., 2011) and (Porter & Ketels, 2003). Others are making emphasis in their works on the increasing role of integration of science and industry in the innovation process (Glazyev *et al*., 1992; Kravtsova, 2003; Barclay, 1992; Kim & Oh, 2002). Innovation as a special kind of activity of the economic entity is described in the works of Kondratyev N.D. (Kondratyev, 2002) and Kokurin D.I. (Kokurin, 2001).

The current stage of development is characterized by the acceleration of scientific and technological progress and the increasing role of innovation in the economy. In this context, innovative activities can be considered as the most important factor necessary to ensure the stable operation of the enterprise and increase its competitiveness. Ensuring the consistency, integrity and continuity in the implementation of the innovative activity of the enterprise becomes the main condition for achieving the required level of its innovative development in conditions of constantly increasing competition (de Brentani, 1991; Di Benedetto, 1996; Ernst, 2002; Kirshin, 2014). In this respect, solution to the problem of forming the system of innovative development of the enterprise, logically built in its management, is particularly urgent.

2. Method

As part of the study, the main approaches to the management of innovative activity of the enterprise were analyzed. In order to form the concept of the "system of innovative development" and the definition of its main elements, different points of view of existing interpretations of the concept of the system were considered. To identify the logical relationship between the elements of the system of innovative development of the enterprise and its strategic management system, existing approaches to the definition of the place of the system of innovative development in the system of strategic management of the enterprise were analyzed. Based on the analysis, the main stages of the formation of the system of innovative development were revealed that logically link

the necessary managerial impacts at different levels of strategic management.

3. Results

3.1. Major approaches to the management of innovative activity of the enterprise

It should be noted that to date the undertaken studies widely represent various approaches to the management of innovative activity of the enterprises. Particular attention is paid to the formation of its innovation strategy (Ramanujam & Mensch, 1985; Richard *et al*., 2003; Dodgson, *et al*., 2015). In most cases, it is seen as one of the functional strategies of the enterprise. At that, almost all researchers make particular emphasis on a strong relationship of innovation and investment strategies, as well as on the need to harmonize the innovation strategy with the overall strategy of the enterprise development.

A programmatic approach is widely presented in the work of researchers, where a program of innovative development of the enterprise is developed for a certain period of time with the purpose of the organization of innovative activity (Salerno *et al*., 2015; Sadriev, 2014; Melnik & Dyrdonova, 2015). The program describes its goals and objectives, sets development targets and the necessary measures to achieve them, the timing of their implementation, the amount and sources of funding. This approach can often be found in the practical activities of large industrial enterprises in various countries.

As a rule, small and medium enterprises use a project approach to organization of innovative activity (Klewitz & Hansen, 2014; Saunders *et al*., 2014). By virtue of various kinds of reasons, including, most notably, the lack of sufficient funding, such enterprises primarily make the main emphasis on the implementation of certain innovative projects that have the lowest payback period and are designed to meet the specific needs of the enterprise in the short term. The main objective of the company in this case is the formation of several variants of innovative projects, the choice of the most preferred of them followed by their implementation in accordance with the developed plan.

3.2. Definition of the concept of the "system of innovative development of the enterprise"

It should be noted that in the present conditions, the presence of innovative component in industrial and economic activity of the enterprise becomes the most important condition for maintaining its competitiveness. The need to maintain constant innovative activity of the enterprise is increasingly noted in the works of various scientists. Innovative activity is suggested as a continuous process aimed at a permanent updating of the various areas of activity of the enterprise. Particular emphasis is placed on the fact that such activities in the area of innovations should be regular in nature and consistent with the principles of consistency and integrity. This, in turn, presupposes the existence of a certain system of innovative development of the enterprise. However, it should be noted that at present, the concept of the "system of innovative development of the enterprise" is almost unknown in the scientific literature.

For its disclosure, it is necessary, first of all, to define the concept of the system. The term "system" has many interpretations. In general terms, the "system" is a set of elements (objects, subjects) that are interconnected to certain dependence and constitute a unity (integrity) aimed at achieving a certain goal. In philosophical epistemological sense, the "system" is defined as the way of thinking, the way of setting and ordering problems. In the research understanding, the "system" is a common methodology for the study of processes and phenomena related to any field of human knowledge, as the object of system analysis. In the project understanding, the "system" is presented as a methodology for designing and creating a set of methods and tools to achieve a specific goal (Agoshkova, 1998).

With regard to innovation activity of the enterprise, the term "system", in our opinion, can be understood, on the one hand, as a set of elements involved in the innovative activity of the enterprise, interconnected to certain dependence and constituting a unity aimed at improving the functioning of the enterprise on the basis of implementation of innovative approaches in various stages of production; and, on the other hand, as a methodology of designing and creation of methods and tools to improve production efficiency in the implementation of innovative activity in the enterprise.

In this sense, the system of innovative development of the enterprise, being a sufficiently broad concept, can combine the innovative business strategy that defines strategic areas of development of its innovative activity; the program of innovative development of the enterprise, developed in accordance with the innovation strategy and regulating the order of execution of measures aimed at the innovative development of the enterprise for a certain period of time; as well as innovative projects as the elements of the program of innovative development of the enterprise that specify the scope of work on the measures laid down in it (Fig. 1).

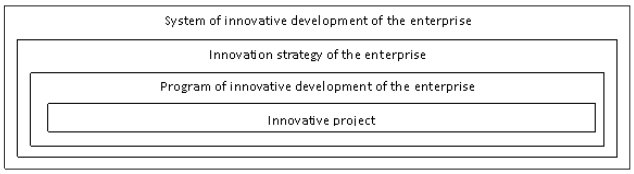

Figure 1 – Hierarchy of the elements of the system of innovative development of the enterprise

3.3. Place of the system of innovative development in the system of strategic management of the enterprise

With the continuously increasing competition, it becomes obvious that the formation of the system of innovative development of the enterprise can be regarded as a prerequisite for maintaining its competitiveness. However, there are considerable differences of opinions about its place in the system of strategic management of the enterprise. As noted above, one of the most common approaches to the management of enterprise innovative development is the formation of its innovation strategy. And, as a rule, an innovation strategy refers to functional strategies of the enterprise. At such approach, the place of innovation strategy

in the system of strategic management of the enterprise will be determined at the same level as the other functional strategies of the enterprise, as shown in Figure 2.

Picture 2 – Place of the innovation strategy in the system of strategic management of the enterprise

In this case, the innovation strategy, in spite of attempts to harmonize it with other strategies of the enterprise, has rather isolated nature, and its implementation often has unforeseen effects on various systems of operation of the enterprise, which significantly limits its innovative development.

Recently, a growing number of scientists have expressed the view of strengthening the role of innovations in the industrial and economic activities of enterprises (Bezdrob & Šunje, 2015; Zhang *et al*., 2015).

For example, often the emphasis is made on the fact that in modern conditions, the innovative activity of a particular enterprise should not be abrupt, but rather a continuous process. This concept presupposes that the enterprise has long-term sustainable strategy of innovative development.

According to Sukhorukov A.V. (2013), the formation of the system of innovative development of the enterprise should take place within the framework of the strategic management process. The concept of the innovative development of the enterprise is understood by the author as a system of principles, perspectives and areas of innovative development, resulting from the mission, corporate strategy and the overall system of the strategic goals of the enterprise.

Other authors (Bishwas, 2015; Love & Roper, 2015) consider innovative development as a set of targeted and related preventive measures to ensure the achievement of a given economic growth to achieve the development objectives of the enterprise. They draw attention to the fact that innovative activity is more successful when it covers not just one narrow area, but also includes the areas affecting the overall result, including management, marketing, personnel training, finance, sales, and many others. Therefore, for the efficient organization of innovative activity in the enterprise, the system of innovative development of the enterprise should be built, which covers all levels of management of the enterprise.

Thus, it can be assumed that the consideration of innovations as the most important factor to further enhance the competitiveness of the enterprise by its management should prejudge the need to review the priorities of the activity of the enterprise at different levels of its management, as well as the formation of an appropriate system of innovative development of the enterprise built consistently on all levels of strategic management, as shown in Figure 3.

Financial strategy, whose main aim is to provide production with the necessary financial resources, should contribute to an adequate distribution of such resources between traditional activities and innovative projects according to the expected results, according to this approach. Moreover, certain innovations can be introduced, if necessary, to the work of financial services of the enterprise.

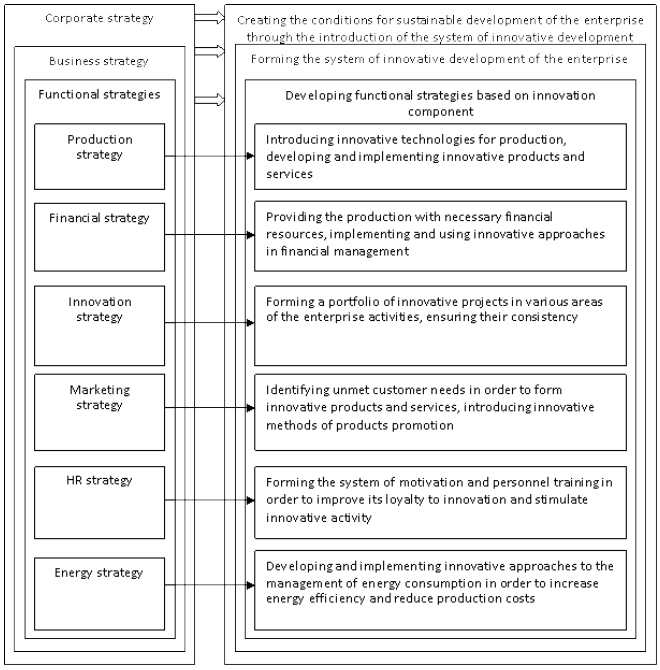

Figure 3 – Tasks solved within the system of innovative development of the enterprise at various levels of strategic management

Marketing strategy, in addition to studying the demand of the customers, should be focused on the development of innovative methods of promotion of products and services, as well as on identifying the unmet needs of the customers to develop new products.

The most important factor in the successful implementation of measures aimed at innovative development of the enterprise is readiness of personnel to various changes. Therefore, the most important area of HR strategy is formation of the system of motivation and personnel training in order to improve its loyalty to innovation and stimulate innovative activity.

Energy strategy, whose main aim is to provide the enterprise with necessary energy resources, should also be aimed at the development and implementation of innovative approaches to the management of energy consumption in order to increase energy efficiency and reduce production costs.

The innovative strategy should combine all areas of innovation activities carried out by various functional subsystems of the enterprise. At that, these areas must be coordinated and complement each other.

Thus, the system of innovative development of the enterprise should logically be built at all levels of its strategic management, including corporate, business and functional strategies of the enterprise.

3.4. Stages of formation of the system of innovative development of the enterprise

Formation of the system of innovative development of the enterprise is a difficult task. It should be noted that due to the relative novelty of the very concept of the "system of innovative development of the enterprise" there are almost no formed approaches to its development. You can meet such formulations in the scientific literature as management of innovative development of the enterprise, planning of innovative development of the enterprise, formation of the strategy of innovative development of the enterprise. The analysis of existing approaches to the construction of enterprise innovative activity revealed a significant disadvantage inherent in many of them and involving a lack of comparing the goals and objectives of the proposed activities within the framework of innovative development with the basic documents forming the areas of activity and development of the enterprise, including corporate, business and functional strategies.

Meanwhile, in our opinion, if the system of innovative development is considered as based on the competitive advantages of the enterprise, it would be important how logical it will be built into the system of strategic management of its activities. The solution to this problem requires, in our view, a number of stages to form a system of innovative development of the enterprise and its harmonization with the main objectives of its operation (Fig. 4).

At the first stage, goals of building a system of innovative development of the enterprise should be formulated. At that, these goals should, first of all, be coordinated with the objectives and tasks of the corporate strategy of the enterprise, and secondly, once approved they should be reflected in the corporate strategy.

The result of the work at the second stage should be the creation of the innovative development strategy and its alignment with the business strategy of the enterprise. Its development is preceded by performing a series of works, including the following:

- definition of the objectives of the innovative development strategy of the enterprise in accordance with the goals of formation and functioning of the system of innovative development of the enterprise, as well as with the goals of the business strategy of the enterprise;
- analysis of factors of the internal and external environment affecting the innovative development of the enterprise;
- formation of a system of indicators for the economic evaluation of innovative activity of the enterprise;
- determination of the areas of innovative development of the enterprise, which are then fixed in the business strategy.

At the third stage, the tasks of innovative development are defined within various functional strategies followed by updating their goals and objectives in line with the adopted strategy of innovative development. In addition, at this stage, the program of innovative development of the enterprise should be formed, which regulates the timing and amount of financing, as well as bringing together innovative projects such as its constituent elements. Thus, at this stage, the concretization of activities aimed at the development of innovative enterprises is completed, as well as their coordination with functional systems of the enterprise.

The fourth stage involves the implementation of the strategy. At this stage, the sequence of works on the implementation of the selected innovative projects is determined, the responsible project managers are appointed, and the process of their implementation begins.

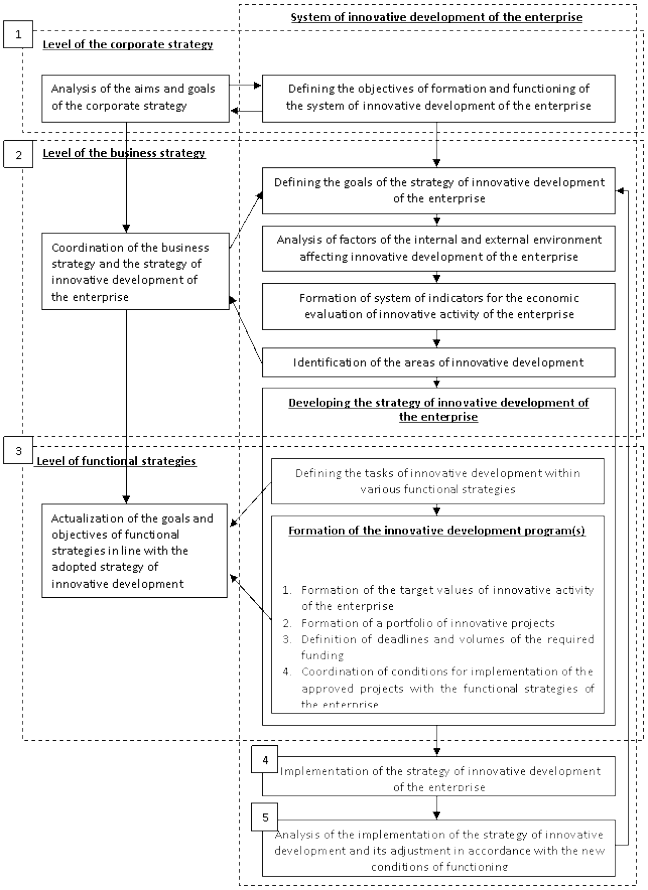

Figure 4 – Stages of construction and operation of the system of innovative development of the enterprise

At the final, fifth stage, the control over the implementation of the strategy of innovative development is performed and the results are evaluated. Carrying out work at this stage implies, firstly, monitoring the implementation of the strategy, including the identification of possible deviations from the planned indicators, establishing their causes, development of measures aimed at their elimination. And, secondly, – monitoring the conditions of operation of the enterprise, including an analysis of the behavior of the external and internal environment of the enterprise, with a purpose to subsequent adjustment of the strategy of innovative development, its implementation plan, indicators and deadlines.

4. Conclusion

Thus, based on our study, the following results were obtained.

It was revealed that the most important factor necessary to ensure the stable operation of the enterprise and increase its competitiveness in the current conditions is innovative development of the enterprise.

The absence of a unified approach to the definition of the concept of the "system of innovative development of the enterprise" was found. The position was substantiated that "the system of innovative development of the enterprise" can be understood, on the one hand, as a set of elements involved in the innovative activity of the enterprise, interconnected to certain dependence and constituting a unity aimed at improving the functioning of the enterprise on the basis of implementation of innovative approaches in various stages of production; and, on the other hand, as a methodology of designing and creation of methods and tools to improve production efficiency in the implementation of innovative activity in the enterprise.

The analysis of existing approaches to the management of innovative activity of the enterprise revealed the lack of unity of views on the solution to the problem of formation of its innovative development. However, despite the existence of different points of view, its main stages were allocated, logically linking the necessary managerial impact at different levels of strategic management. These include the definition of the objectives of formation and functioning of the system of innovative development of the enterprise at the corporate level; development of the strategy of innovative development at the level of the business strategy; formation of an innovative program at the level of functional strategies; implementation of the strategy of innovative development of the enterprise; monitoring and evaluation of the results of implementation of the strategy of innovative development and its adjustment in accordance with the new operating conditions.

Acknowledgments

This work was funded by the subsidy allocated to Kazan Federal University for the state assignment in the sphere of scientific activities.

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