

Conceptual Framework for Organization of Innovations and Innovative Work

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Abstract: The study is devoted to development of conceptual approach to organization of innovations and innovative work. It formulates functions of business management based on innovations, points out features of innovative work. The study grounds proposed principles, approaches and functions substantiated and defines the innovative favorableness of the structure for different types of innovations. The approach was formulated to determine special features of innovative work in conditions of knowledge economy. Classification of innovations according to the following characteristics: by the novelty level (basic, progressive, pseudo-innovations), by the degree of radicality (radical, ordinary), by the life cycle stages, by the degree of influence on the changes (cardinal, revolutionary, modificative, combined) was carried. The study proposes systematic approach to innovation that allows consideration of static aspect (novation, innovation or change) that reflects the essence of innovation and dynamic aspect (process that reflects the process of commercialization and promotion of innovation. Methodology of innovation management was proposed to consider on basis of comprehensive approach, including strategic, operational and organizational subsystems and the process approach for organization of all flows of the system. The innovative favorableness of the organizational structure determined for the types of innovation that exist an enterprise: project and matrix structures for the revolutionary, basic, modificative, comprehensive innovations; linear-functional structure for pseudo-innovations, ordinary innovations.

Key words: Innovative work, conceptual approach, “innovation” category, organizational structure, approaches to management of innovations, management functions

INTRODUCTION

In modern conditions in Ukraine one of the most promising ways to develop market opportunities is innovative way which should be considered not only in the strategic aspect but also from the perspective of management system of enterprises carrying out economic activities. If we analyze the management system, then ignoring innovation factors in its structure and operation may be also considered to be one of the reasons for shortcomings in it. The significance of this problem increases even more with consideration of the current state of the domestic economy which is characterized by crises, low competitiveness, scanty perception of innovations by enterprises. Therefore for overcoming the crisis of the economic system, we require development and introduction of modern methods and principles of management of innovation activity, creation of conditions for its activation and improvement of its effectiveness. Organization of innovations and innovative work should be consistent with the modern paradigm of management which is reflected in the researches of such Foreign and Domestic scientists: P. Drucker, H. Fayol, K.D. Eck, V. Tokarev, V.N. Ivanov, A.S. Dligach, Alfred Chandler, V.N. Ivanov, A.N. Sakhanov, P. Kotler.

However, despite the very large number of scientific researches on this subject, unfortunately, scientific publications do not pay proper attention to the concept of organization of innovations and innovative work.

MATERIALS AND METHODS

A significant contribution to the development of theoretical aspects of organization of innovations and innovative work at different levels of management has been made by domestic scientists such as O.I. Amosha, I.R. Buzko, D.K. Voronkov, K.O. Soroka, O.S. Yefremov, A.V. Cherep, O.G. Cherep, M.M. Yermoshenko, V.S. Ponomarenko, A.S. Polyanskaya, O.E. Kuzmin, V.V. Stadnik, M.A. Yokhna, V.M. Nizhnik, S. Dziuba, K.V. Gorbatyuk and others. Among Foreign researchers, we should mark out such economists as S. Ilyenkova, P. Fatkhudinov, P.N. Zavlin, A.K. Kazantsev, V.K. Bekleshov, G. Obraztsova, I. Shapiro, B. Santo, B.B. Twiss, F. Schumpeter, N. Nixon, R. Johnson, F. Cast, D. Rosenzweig, H. Fayol, A. Letkevich, P. Drucker, L.M. Gohberg. However, these researches do not present systematization of guiding principles of organization of innovations and innovative work at modern enterprises.

Therefore, the aim of this study is validation of the conceptual approach to organization of innovations and innovative work at the enterprise which makes it possible:

- To determine functions of innovation management and their interrelation with work standardization
- To determine special features of innovative work in conditions of knowledge economy

RESULTS AND DISCUSSION

The guiding principles of the proposed conceptual approach are based on modern management paradigm which provides for integrity, systemacity, synergy and self-organization of the elements of the system as well as use of management methodology for reaching the required level of its organization. Let's consider the guiding principles of the proposed approach.

Principle 1: Management of the enterprise oriented toward innovations is an integral part of the overall management system, thus issues of management development through implementation of innovations are the centerpiece of the problem of long-term innovative development. For this purpose, there was carried out classification of innovations according to the following characteristics: by the novelty level (basic, progressive, pseudo-innovations), by the degree of radicality (radical, ordinary), by the stages of the life cycle, by the degree of influence on the changes (cardinal, revolutionary, modificative, combined). In order to make effective management decisions on selection of types and kinds of innovations at different stages of the life cycle of the enterprise, it's necessary to determine their interrelation.

Principle 2: Methodology of innovation management as a dynamic component of the enterprise management system is proposed to consider on the basis of a comprehensive approach, including strategic, operational and organizational subsystems as well as the process approach for organization of all flows of the system.

Principle 3: Since, the management methodology of the enterprise oriented toward innovations rests on a modern understanding of the essence of management as a system, the necessity arises to validate the principles of management. Analysis of researches dedicated to the principles of innovation management of such researchers as: Burennikov (2011), Pokotilova (2008), Illyashenko (2003) and Knyazevich and Kraychuk (2011) allows making the following conclusions.

First in the management of the enterprise oriented toward innovation, it should be used both general management principles: purposiveness, systemacity, integrity, alternativeness, hierarchical structure, dynamism, balanced development, described by Burennikov (2011), Yermoshenko and Hanushchak-Yefimenko (2011) and specific principles of management: systemacity, comprehensiveness, flexible reaction, reasonable risk at all stages of the life cycle of innovations, structuredness, preferred orientation toward innovations. The principle of systemacity provides for a systematic approach to the innovation-oriented enterprise management. This principle means bringing all elements of the innovation process together in a single whole as a result, the company achieves the total unity.

Long-term stability of the effective production of the enterprise is not possible without the flexible innovation management. Therefore, it's necessary to promote innovations timely to concentrate resources to carry out operational management of innovation process at minimal risk from development of innovations. The principle of flexibility becomes the decisive factor when adapting the business to innovations.

The principle of comprehensiveness provides for an active interchange with suppliers and contractors, creation of conditions for enterprise competitive advantages based on innovations as well as a comprehensive consideration of all directions of innovation activity.

The principle of reasonable risk at all stages of the life cycle of innovations involves a detailed analysis of the risk factors and evaluation of its risk impact on different stages of carrying out of the innovation activity.

The principle of structuredness is the ability to describe the enterprise through the selection of its structure which implies stable interrelations.

The principle of preferred orientation toward innovations. At present, innovations are becoming a key element of management at the enterprise. Enterprises for which innovations are a determining factor do not bind themselves to necessity to reduce the production cost of the goods and to penetrate into other market segments, their purpose is to focus their efforts on creation and development of production of new products, development of new technologies.

Principle 4: In construction of management system of the enterprise oriented toward innovations, it is reasonable to use a combination of approaches: functional, process, situational.

In the situational approach, management system is considered depending on the particular situation. The

nature of the situations depends on the choice of enterprise strategy. Depending on the complex of external and internal factors, enterprises can choose one of the strategies of innovation activity. The situational approach allows responding quickly and flexibly to changes in internal and external environment that is leading to the adoption of timely and effective management decisions in the management system.

In the process approach, management is considered as a process (Semencha, 2012). This approach provides for a complex of interrelated actions directed to achieve the stated objectives. The process approach provides an opportunity to organize and regulate the whole activity of development and promotion of innovations to the consumers, focusing all the processes in the system to their satisfaction. This allows choosing and implementation of innovations that correspond to the key success factors inherent in the enterprise's strategy.

The functional approach is closely related to other approaches, especially to the structural. This approach facilitates improvement of the entire management through development of innovations. Using this approach, the management object is updated. The functional approach allows separating management effects, detailing all works and operations in the management system depending on the field of innovations. This approach facilitates improvement of the entire management through development of innovations. As a result of application of the functional approach, it's possible to choose the optimal organizational structure taking in consideration its perception of innovations.

Principle 5: It is proposed to implement innovation management on the basis of performing the aggregate functions. Innovation management functions include general management functions, the list of which is presented in the works (Kuzmin *et al.*, 2011; Cherep *et al.*, 2009; Fayol and Grai, 1984).

Y. Y. Burennikov, N.V. Polishchuk, V.O. Yarmolenko consider innovation management functions as such general management functions as organization, stimulation, control, regulation. Upon that the researchers propose one more function: development of the innovation strategy and formation of the innovation targets. V.I. Zakharchenko, P.P. Mikityuk (Yefremov, 2012) suppose that innovation management functions should also include such functions of management: forecasting, planning, organization, coordination, motivation and stimulation, control. As well as Burennikov (2011), the researchers believe that innovation management functions should include: development of innovative targets. But in our opinion, formulation of innovative

targets is the stage of development of the innovation strategy not a function. It should also be noted that N.V. Krasnokutskaya neglect such function as development of the innovation strategy, specially pointing out only the first stage of its formation. N.V. Krasnokutskaya pays special attention to forecasting function which the author separates from planning function. It should be noted that in our view, it's not reasonable to separate these two functions but combine them into one: planning.

L.N. Ogoleva considers general management functions as innovation activity functions. M.M. Yermoshenko, L.M. Ganushchak-Yefimenko, S.I. Kolosok point out the functions of management but neglect that innovation management functions must differ from the general management functions within the meaning (Yermoshenko and Hanushchak-Yefimenko, 2011; Kolosok, 2007). M.M. Yermoshenko, L.M. Ganushchak-Yefimenko just supplement generally accepted management functions by the function marketing.

It's the merit of Illyashenko (2003) who has separated the functions of innovation activity management from general management functions, besides, the functions mentioned by the author (in addition to the function formation of the organizational structure of innovation activity management) are more similar to the tasks of innovation activity management.

Yefremov (2012) considers that management functions of enterprise innovation development are identical to generally accepted management functions. But, the researcher points out one specific feature "the management functions of enterprise innovation development should be focused on qualitative change in the state of the enterprise using results of innovation activity".

Stadnik and Yokhna (2011) consider function of innovation development management according to general functions through their specification. We adhere to the idea that it's reasonable to replace function of activation to function of regulation.

Out of diversity of represented approaches, basing on analysis of characteristics of the innovation management it is justified to use the following five:

- Planning
- Organization
- Motivation
- Control
- Regulation

Let's take a look in more detail at the essence of these functions in innovation management. Planning (choosing the mission of enterprises oriented towards innovations,

formulation of innovative targets; analysis of external and internal environment, strategic innovation planning that involves development of the enterprise innovation strategy). Analysis of external environment includes the study and forecast of the needs for innovations. It allows the enterprise operating more efficiently being prepared for a possible negative changes. Analysis of internal environment includes evaluation of perceptivity of the enterprise to innovations (analysis of innovation potential). Elements of the innovation potential are its material, marketing, human and financial resources. Choosing the innovation strategy, it's necessary obligatory to analyze and evaluate the financial security of the enterprise.

Function of organization means the process of formation of the organizational structure of innovation management; achievement of stated innovative targets through ensuring timely performance of planned tasks and regulation of general and coordinated actions of the employees.

The essence of the function of motivation is stimulation of interest in the results of innovation implementation as well as creation of motivation mechanism, availability of qualified staff, possibility of professional retraining of the staff. Function of control includes two types of control: operational and strategic control.

Strategic control consists in monitoring of the process of development and realization of the enterprise innovation strategy and the progress of scientific and technological measures.

Operational control provides monitoring of all stages of the innovation process as well as performance of the current tasks.

Regulation consists in formation of the necessary actions relating to implementation of stated innovative targets, removal of shortcomings of the enterprise innovation activity. This function is indissolubly related to the function of control.

Principle 6: In the process of organization of the innovation process and innovative work, it's necessary to take into consideration the essence of the "innovation" category. Since in the economic literature (Burennikov, 2011; Knyazevich and Kraychuk, 2011; Chernobay and Kyshenya, 2011) there are different approaches to interpretation of the definition of "innovation", it is necessary to carry out generalization of the term "innovation" in accordance with the object of research. It can be concluded that for today, the category "innovation" can be considered from different perspectives: as result; process; innovation; change;

activity; new technique, technology; new combination, new achievement. Such variety somewhat duplicates the very classification of innovation (e.g., interpretation of "new technique, new technology", "new combination", "new achievement"). However in our study, we shall use the systematic approach to innovation which allows taking into consideration of both its static aspect (novation, innovation or change) that reflects the essence of the very innovation and dynamic aspect (process, activity) that reflects the process of commercialization and promotion of innovation.

Principle 7: In the process of organization of innovation activity and innovative work, it's also necessary to take into consideration the characteristics of the organizational structures and their ability to promote innovations. Types of organizational management structures, their advantages and disadvantages are covered to some extent in the literature and scientific studies (Yermoshenko and Hanushchak-Yefimenko, 2011; Stadnik and Yokhna, 2011; Cherep *et al.*, 2009). After analyzing the existing advantages and disadvantages of each organizational structures. There was summarized the list of qualitative characteristics of the existing organizational structures.

At present in the economic literature, there is no argumentative characteristics of types of organizational structures and their receptiveness to innovations. Therefore, there was made classification of types of organizational structures according to the following criteria: flexibility; level of management; by combining; by interaction between subdivisions of the enterprise; by interaction inside and with the environment; depending on the type and the kind of production; by reaction of the organization to a certain factor of environment; by nature of relations between the elements; by presence of the predominating kind of organizational relations; by introduction, implementation and propagation of innovative projects; by target orientation, on the basis of which the characteristics of existing organizational structures have been generalized. Also, there was determined innovative favorableness of the organizational structure for the types of innovation that exist at the enterprise (for example, project and matrix structures for the revolutionary, basic, modificative, comprehensive innovations; linear-functional structure for pseudo-innovations, ordinary innovations).

Principle 8: Choosing the organizational structure, it's necessary to take into consideration its interrelation with the life cycle of innovations. Analysis of the reseraches allowed validation of the interrelation between the stages

of the life cycle and types of organizational structures which can most effectively work on these stages (Yermoshenko and Hanushchak-Yefimenko, 2011; Stadnik and Yokhna, 2011; Cherep *et al.*, 2009). It should be noted that on the stages:

- Scientific research and engineering development
- Acquisition of innovations, preferred organizational structures are linear, functional, linear-functional

However, it should be pointed out that the first stage can be also performed by matrix organizational structure. Development of new products in a short period of time can be also supported by matrix organizational structure, divisional organizational structure all the stages from creation to utilization as well as development of progressive and marketing innovations. Project organizational structure can implement mastering of technically sophisticated new product and implementation of innovations (within linear, linear-functional structures). Implementation of innovation can be also supported by functional organizational structure and the possibility of slight changes in technology by linear-functional structure. Development of the innovative project can be implemented by all organizational structures, except for functional. As a result of generalization, it was concluded that in all stages of the life cycle, the best are such organizational structures: matrix, project, divisional.

Principle 9: Organizing the innovation activity, it is necessary to take into consideration the essence of innovative work. At present, there are different approaches to interpretation of the definition of “innovative work”. For example, M.A. Yudelevich believes that innovative work is the “creative activities, aimed at getting, systematizing and processing of new, original, evidential information”. Bekleshov and Zavlin (1989) interpret this category as “organic unity of theoretical and experimental activities, bringing together workers of different categories”. Some scientists consider the innovative work as psycho-emotional energy (Stremousova, 1994). Some researchers interpret the innovative work as the ability to implement tasks based on expansion of the field of experimental situation, extending beyond the non-stimulated search and discovery of new consistent patterns (Panchenko and Serbskiy, 2012). In addition to the presented definitions, in the scientific literature, it may be found quite a general definition of the analyzed term “such activity of the entity in which it uses its personal employment potential as the primary means of”. Thus, among the scientists there is no a unified point of view what is innovative work.

Innovations are related to intellectual work. Innovation activity, unlike other types of activities has its specific features. Development of innovations is always associated with a high risk and expenses. Consequently, this requires highly qualified personnel which will be able to forecast thoroughly and conduct innovation activity at different stages of innovation development. Innovative work has its own characteristic features:

- It is not possible to predict its outcome, however, it must have always a material form
- Uncertainty and risk
- Uniqueness
- Combination of mental and physical work (Bekleshov and Zavlin, 1989)
- Novelty and originality of performed works
- Individual, creative character
- Result or product of work is the “new knowledge, scientific information”
- Complexity and work content of performed works
- Requires highly qualified personnel
- Complexity of measuring work
- Requires certain abilities (personal qualities, intensity of thinking, longness of mental tension, deep scientific knowledge)
- Subject of work in most cases has no material expression, past, previously accumulated knowledge serves in its capacity

Principle 10: Functions of management: planning and organization should be considered together with the issues of standardization of innovative work. Approach to standardization of different types of operations of the innovation process should be differentiated, however, standardization of innovative work should be obligatory for all categories of personnel. Application of some or other methods of standardization of innovative work is determined by the level of novelty of the executed operations. In general as evidenced by analysis of the researches of Sisun and Joshy (2011) and Bekleshov and Zavlin (1989), the problem of standardization of work is as follows:

- Difficulty in determining of the final result
- Specific features of the work of managerial personnel
- Determining of the best rate of employment of specialists due to their uneven loading
- Existence in practice of the gap between the starting and finishing stages of innovation implementation
- It's necessary to carry out concurrent standardization of work in the structural division and the enterprise as a whole

CONCLUSION

According to the results of the conducted study, there has been developed a conceptual approach to organization of innovations and innovative work, taking into consideration construction of organizational structures and their perceptivity to innovations. This approach consists of the following aspects: formulation of functions of innovation management, pointing out of specific features of innovative work, validation of the proposed principles, approaches and functions, consideration of the stages of the life cycle and types of organizational structures that can support these stages; definition of innovative favorableness of the structure for different types of innovations.

Thus, the proposed conceptual approach to the organization of innovations and innovative work is cardinally different from the existing interrelation between its innovative work and its features, formulation of the approach taking in consideration of perceptivity of the organizational structures to innovations as well as of the choice of the organizational structure in the view of its interrelation with the life cycle of innovations. The direction of future studies in this subject area is development of tools and technologies to build innovation-oriented organizational structures.

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