

The stages of the innovation process

N.G.Bagautdinova,
Kazan Federal University
Kazan, Russia,
nailya.mail@mail.ru

A.M. Safiullina,
Kazan Federal University
Kazan, Russia,
kfu.safiullina@yandex.ru

A.M. Fatkhiev,
Kazan Federal University
Kazan, Russia,
arturfatkhiev@yandex.ru

Novenkova A.Z.,
Kazan Federal University
Kazan, Russia,
followaida@gmail.com

Abstract – Issues, connected with the opening of the main point of innovations as an economic category, are considered in the article. Approaches to investigations in the field of innovational activity from the point of view of foreign, Russian scientists and practical workers are analyzed.

Keywords-innovation, the process of innovation, innovative economy, innovation theory, economic theory, innovation policy (key words).

1. INTRODUCTION

One of the fundamental problems of any economic system is distribution and selection of produced and sold goods. This task is connected with economic alternatives which arise in any economic decision making process, in particular, because of the need of increase of return from scale for producers or increase of total utility for consumers – for growth of public welfare.

Innovation is investigated in comparison with such categories as «invention», «improvement», «new», «novelty». The role of innovations in modern economy is opened. The concept of innovation in the scientific literature is considered from different points of view in relation to technology, commerce, economic development, in relation to social systems and policies. Accordingly, there is a wide range of approaches to the justification of the concept.

First of all, we must remember that the term «innovation» comes from the Latin «innovato», which means «update» or «change». The very concept of «innovation» first appeared in scientific studies of the XIX century. The concept of «innovation» received a new life at the beginning of the XX century in the study of the Austrian economist Schumpeter «The Theory of Economic Development», who is considered the founder of the theory of innovation. He treated it in the broadest sense, as a change, assuming here that the «main function of the innovation is a function of the change management». Schumpeter did not use the term «innovation», and defined them as clumps of reality, in which «carried out new combinations» changes in development. This update is above the level of simple production.

2. DEFINITIONS

Implementation of the new combinations occur in the process of change in the development of production and the market, and is formed in his wake. J. Schumpeter identified five types of procedural changes clots reality: the production of a new good or the creation of new quality benefits, the introduction of a new method (method) or the production of a new method of commercial use of the product, the development of a new market, obtaining a new source of raw materials or semi-finished products, carrying out appropriate reorganization of the enterprise.

P. Drucker means by 'innovation' special tool of entrepreneurs, the means by which they use the change as an opportunity to implement a new kind of business or services. Starting from the assertion that the main task is to create a market leader, P. Drucker notes that the key functions of management are: innovation and implementation of marketing activities. He pays relatively little attention to marketing, but the need for understanding and innovation is seen in almost all of her recent books. Scientist persistently criticized the company, considering that innovations occur on inspiration, and success in business depends on luck, and argues that the introduction of innovations is a science that can be learned. He convinced that innovation is primarily an administrative function, and emphasizes that managers must rely on technology rather than on anything else, one of the most famous expression - «the computer is an idiot» - implies the need for studies, machines must be used as a tool for innovation, rather than means of their changing. B. Twiss understands the innovation process as transferring of scientific or technical knowledge directly into the sphere of the consumer needs . The product is thus transformed into a media technologies, and the form it takes, is determined only after binding of the technology and meet the needs.

A more comprehensive definition of the concept of «innovation» has given in the non-fiction book of Elaine Dundon: «Innovation - it is a profitable implementation of creative strategy». According to this definition, any innovation must include four key components: creativity (contain a new idea), reality (promising realization of the idea in the form of specific products and services), strategy (finding out how the implementation of the ideas will be useful and successful in the long-term corporate activity), profitability (the definition of economic efficiency of the implementation of new and useful idea.)

3. METHOD

Many believe that innovation is the prerogative of high-tech companies. In fact, innovation is possible in any field of human activity. The American city Pompano Beach (Fl.) has even a monument symbolizing the spirit of innovation «Spirit of Innovation».

When conceptualizing the concept of «innovation» it is necessary to compare it with other concepts. In particular, in the scientific literature, the concept of «innovation» is often confused with the term «invention», indicating the creation of a new technical development or improvement of the old one. In addition, many of the changes of goods and services would be more correct to name just a word «improvement» The concepts of «change» and «creativity» is also sometimes can be employed instead of the concept of «innovation.»

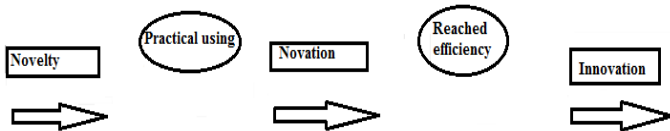


Fig. 1. The stages of the innovation process

An analysis of domestic and foreign literature shows that, in practice, the term «innovation» is often used to refer to any spheres of human activities (management, education, science, medicine, military science, etc.). Thereby there are following interpretations of the term «innovation»:

1. The process of implementing a new idea to any field of human activity, that contributes the meeting of the existing demand in the market and bringing economic benefits.

2. The involvement of the economic cycle results of intellectual activity, providing new, including scientific knowledge to meet the needs of the public or for profit.

3. The end result of the introduction of innovations to change the objects that manage and produce economic, social, environmental, scientific, technical or other types of effects.

4. Innovations in every field of human activity aimed to necessary and quite execution conditions such as: the use of partially or fully protectable (protected by the patent, copyright and information law, subjects of work or know-how) to ensure registration of copyrightable goods or services, the use of such items of work or know-how or the release of such goods and services, in accordance with established standards recognized commensurate with the world level; providing of significant consumer effect.

4. STAGES OF INNOVATION

If define the economic substance of the concept of «innovation» as the process of creating novelties that lead to commercial success in the market, within the limits of this view it is such an innovation to the point until it is implemented and not a profit. The process of commercialization of intellectual labor is called innovation, i.e. work to bring scientific and technical ideas, inventions, developments to results suitable for practical use. A full range of innovative activity includes creation, development and production, as well as the implementation of a new product, etc. The main stages of innovation are presented below.

Foreign and national theories include an opinion on the «primary thrust», i.e. that scientific activity is the beginning of an innovative economic activities which has as a result a scientific idea in the form of scientific achievements, discoveries, inventions, etc. According to the definition of American scientist E. Mansfield, who is a specialist in the Melting innovation theory, similar principle is the result of scientific research and ideas in the form of the invention, which «... is a recipe for a new process ...».

In accordance with international standards, innovation is defined as the end result of activities were realized in the form of new or improved technological process of practice, a new approach in the social, administrative and other areas.

The above definition, inter alia, has the advantage that is suitable for particular cases of innovation. For example, it generalizes these types of innovations mentioned in capital

works as product innovation, technological innovations, ITATION-process innovation, organizational innovation, innovation presented in this Schumpeterian list or innovation, typological differences are indicated in the work.

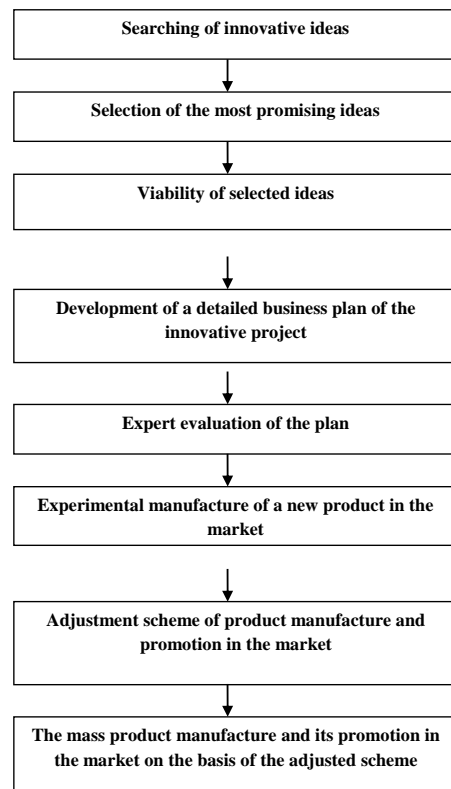


Fig. 2. The main stages of innovation

Can serve as a source of innovation: an analysis of currently state of business; analysis current needs of consumers using the focus groups and analysis of current and prospective customer needs. The user can use with the method of direct observation (empatheticdesign); predicting future customer needs, using high-end user research method and the study of solutions that already exist in your category; research solutions already exist outside of one's category; study of standard advantages; tracking technology; reading of broad themes of literature and records read literature.

Despite the close attention to the problems of innovative development from the side of Western countries and from Russia, so far the concept of «innovation economy» remains not so well established. The multiplicity of views in the economic literature, as well as the lack of definition in law require research and identify the category of the innovation economy.

In the period pre-market economies arises first theoretical concept of market economic corrector systems, which caused not only activation of innovative process as reality clots, but also increasing maturity of economic thought and its transformation into a systemic economic theory - mercantilism.

The object of innovative thinking mercantilism began a new relationship, subsequently received the name of «market.» Feature innovative thinking clots reality of the period described by Karl Polanyi in his book «The Great

Transformation: Political and Economic Origins of Our Time».

Economic doctrine and economic theory of innovation period of unregulated market economies were formed from the end of the twelfth century. 30-ies. Twentieth century, when there was the emergence and development of economic innovation, as self-regulation of the market and economic liberalism, industrial production and free competition, monopoly and imperfect competition and other clot reality.

During this period, there was a classical model of political economy, the structure of which were laid by the individual elements of the economic theory of innovation as an isolated system of knowledge. These include the economic views of the representatives of this period: A. Smith, JB Say, R. Cantillon, J. Thünen, G. Mangold and others about entrepreneurship and his subjects; Ricardo technical progress and the two types of innovations; Dzh.St. Mill on the factors of production and capital, Marx's Capital and capital-innovation; A. Marshall on income from innovation. The climax of this period, the evolution of the economic theory of innovation and the foundation of its long-term development are scientific views on this issue.

The development of the economic theory of innovation in the subsequent periods, particularly in terms of regulated market economy, mixed and communicative synergic economy, carried out in different directions. There was a lot of concepts, dedicated to the study of the nature of innovation, their typology, content and form, the definition of their role in the economic system, which is under the influence innovations transformed into an innovative economy. In this regard the theory of an innovative economy and the business community P. Drucker it expressed in the works of the «Innovation and Entrepreneurship» (1985) and «post-capitalist society» (1993).

The growing attention to the economic theory of innovation can be seen in the theory of intelligent technology R. Hayek and Milton Friedman, in the theory of the «third wave» and «power shift» A. Toffler, in the theory of the third industrial revolution, in theory megatrends Nesbit and J. P. Aburden.

The state's role in the development of an innovative economy is to create the necessary infrastructure and legal environment, the resolution of matters using the results of intellectual activity, enabling effective application of science and technology for the production of a commercial product by Russian enterprises.

5. CONCLUSIONS

The active state innovation policy solves the main problem: the gap between the scientific and technical sphere, embodied mainly by the state, and the industrial sphere, embodied by private business and to create an effective system for the transformation of scientific and technological advance in the knowledge-based, competitive products. To meet the challenges of implementing the state policy innovation, the Russian government has developed a set of measures aimed at both the development of innovation infrastructure and the maintenance of the priority directions of scientific and technological areas, the creation of a special, innovation-oriented environment in all Russian regions.

The main directions of the state policy innovation economists currently include the following: development and improvement of the regulatory framework of innovation, the mechanisms of its incentive mechanisms for the incentive system of institutional change, the protection of intellectual property in innovation and its introduction into the economy; the creation of an integrated system to support innovation activities of the, development, production, improving the level of competing and export of high technology products; the development of the infrastructure of the innovation process, including information support system, examination system, the financial and economic system, production and technological support system of certification and promotion of development, the training and re-training; the development of small innovative enterprises by creating favorable conditions for the formation and success of small high-tech organizations and provide them with government support for start-up activities; improving the competitive system of selection of innovative projects and programs - Implementation of critical technologies and priorities that can transform the relevant sectors of the economy of the country and its regions; the use of dual-use technologies. These technologies will be used for the production of arms and military equipment, as well as for civilian products.

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