

INNOVATION

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Abstract. *Development is dedicated to innovation. The founder of the innovation theory Josef Schumpeter connects innovation with entrepreneurial activity and defines it as the creation of new combinations or changes in market development and production. Listed are the basic concepts of its nature and different understandings of it in a wide and narrow sense of the technological, business, consumer, marketing and public point of view. On the basis of this, there is a general understanding of innovation as the realisation and putting into practice of something new, leading to a change in the business activity, people's lives and the development of society. Presented are the characteristic of innovation as an activity, process and result and the classification of different types of innovations.*

Key Words: *innovation, novelty, innovation activity, innovation process.*

INTRODUCTION

Innovation theory originates from the middle of the past and the beginning of the 21st century, when there were changes in the developed industrial countries, which was described as the process of transition from industrial to a post-industrial, information society. The restructuring of the national holdings is developing as a new economy based on knowledge and its application in practice. There is competition between businesses and the transfer in the field of high technology, mechanical and material saving production, alternative sources of energy and environmentally sound manner of production and life. Stimulating research and innovation are becoming an integral part of the economic policies of the companies, national holdings and integrated communities.

Extension and updating of the Lisbon strategy in "Europe 2020" Strategy of the European Commission, emphasises the development of knowledge-based economy and innovation guidance to more green and more innovative market for "intelligent, more sustain-

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able and more environmentally friendly growth"¹, development and strengthening of the social welfare of the countries of the European Union.

1. THE ESSENCE OF INNOVATION

The founder of the innovation theory *Josef Schumpeter* associated innovation with entrepreneurial activity and defined it as creating new keys or changes in market development and production related to: 1) introduction of new products or services or improving the quality of existing ones; 2) introduction of a new method of production; 3) development of new markets; 4) use of new sources of raw materials; 5) changes in the industry.²

This understanding is shared by his contemporary followers such as C. Freeman, G. Dosi, P. Ferguson, C. Hill and J. Utterbak, P. Rommer, etc. Each of them gives his interpretation and stresses the individual circumstances.³ B. Tinnesand indicated this wide variety of approaches, classifying over hundred definitions of innovation.⁴

According to P. Drucker, innovation was not and could not be seen merely as technical, technological and economic phenomenon, since it is always a social manifestation — as a result of the use of new capital and consumer goods and introduction of new services, it improves people's lives - education, health, social security, economy and environment.⁵

In this regard, there are also approaches to innovation coupling it with:⁶

1. Process improvements by making changes;
2. An act introducing something new: something newly entered;
3. Introduction of something new;
4. A new idea, method or device;
5. Successful use of new ideas;
6. Amendment which creates new aspects in activities;
7. Targeted change in the economic and social potential of enterprises;
8. The creative idea, which took place;
9. Innovations, changes in economic, technological, social and other areas related to new ideas, inventions and discoveries.

¹ <http://ec.europa.eu/eu2020>

² Schumpeter, Josef A., (1934) *The Theory of Economic Development*. Cambridge:Harvard University Press, 1961, p.66

³ Freeman Chris., *The Economics of Industrial Innovation*. The MIT Press, Cambridge, Mass. 1989, p.4; Christopher T. Hill, J. M. Utterback, *Technological Innovation for a Dynamic Economy*, Pergamon Press, 1983, p. 2-3; Dosi, Giovanni, "Technological paradigms and technological trajectories". *Research Policy* 11, 1982, p.3; P. R. Ferguson, *Industrial Economics: Issue and Perspectives*, MACMILAN, 1992, p. 80-86.

⁴ Tinnesand B., *Toward a General Theory of Innovation*, University of Wisconsin, Madison, 1973, p. 258.

⁵ Drucker P., *Innovation and entrepreneurship-practice and principles*, Classical and Style, S., 2002.

⁶ see: Georgiev I., *Science-Production-Realization*, P., S., 1985, p. 66-71; Zajceva B. F., *Organisation and management science and technics*, M., Progress, 1987, p. 163-172; Kulkin A. M., *Kapitalizm, science, politics*, M., Thought., 1987, pp. 302-304. <http://en.wikipedia.org/wiki/Innovation>.

Depending on the direction of the application and the effect that it has in a given field, innovation is perceived in different ways:⁷

From a **technical and technological** point of view, innovation is treated as an idea for a new solution or a combination of existing technical, technological and production solutions, physically realized and implemented for the first time in practice.

From a **business** standpoint, innovation is anything that leads to a positive economic effect on business.

From the **marketing** point of view, innovation is a market-oriented idea, which has a successful implementation and is received by all of the users.

In terms of the **user**, innovation is anything good, unknown until then, which is considered as more satisfying than something already existing because of the new needs which arise.

In terms of **society**, innovation is associated with the introduction of new developments leading to the process of transformation of the public service, improvement in the quality of life, strengthening of economic, competitive and political position of the Member States.

Each of these beliefs indicates a specific view, interpretation including wider, more general or specific subjects.

On the basis of this, there is a general understanding of the **innovation as the realisation and putting into practice of something new, leading to a change in the business activity, people's lives and the development of the society**.

Great diversity of perspectives, definitions and perceptions of the nature and extent of innovation, involving aggregation and differentiation of approaches its characterisation.

Such for example is the approach for examining the **wide** innovation in and **narrow** sense.⁸ In the first case, it shall be construed to *complex phenomenon of mutually conditioned and related creative actions by formalising the idea, development, implementation and use of something new (product, process, service, etc.), with which they improve and transform their business and the way of existence*. In the second, it is seen as a process of *real implementation and commercialization of new products, services, equipment, technology and organization*.

In both cases, innovation may be considered in two aspects: **dynamic** and **static**. The dynamic concept treats it as *an evolving and creative process in the establishment and application of innovation*. Innovation in the static concept is *completed as a result of human activity as a novelty in the form of technology, product, service, and organization or otherwise suitable for use*.

These various approaches express the nature of innovation – it covers a wide aspect of activities in the establishment and implementation of something new which gives rise to change, improvement and update of the conditions and environment for the work and life of people.

Out of many approaches, concepts and definitions which describe the nature, characteristics and the manifestation of innovation, *innovation should be seen as: an activity, process and result*.

⁷ Monchev N. and I. Petrov, Information security, of innovative processes, P., 1988, p. 10-12.; Benev, B., Management innovation, MB, 1996, p. 5-8; Fagerberg Jan , David C . Mowery and Richard R . Nelson : The Oxford Handbook of Innovations , Oxford University Press , 2004, p. 1-26;

⁸ Gardner C.A, Acharya T. and Yach D: "Technological and Social Innovation: a Unifying New Paradigm in Global Health", Health Affairs, 26, no. 4, 2007, p. 1052-1061.

2. CHARACTERISTICS

2.1 Innovation as an activity

The activity of people is a *reproductive* unity (routine) and a *productive* (creative) activity. Innovation is the result of the work of three provisionally separate and related groups of people who are directly related to its occurrence:⁹

The first group is represented by people who created and imposed the idea used as the information for a particular innovation. It involves scientists, inventors and people with a higher degree of activity in relation to the surrounding reality.

The second group covers practical scorers of new ideas.

The third group includes all users of novelty.

Interaction between these three groups is necessary to ensure normal operation of the innovation process, to determine and introduce novelty and to obtain the effects of its use.

2.2 Innovation as a process

The most common use and scalability of innovation are the result of successive activities and relations between the actors and institutions on formal and informal basis at any level:

a) *at macro level*, this is the interaction between departments, operators, formal and informal organizations, associations, etc, on national, regional and local level where the Member State determine the "rules of the game" and protect the interests of society;

b) *at micro level* (firm), it is determined by the profile of the business, resources, opportunities and the organizational structure;

c) *at international level*, arising from the internationalization of research concerning the free movement of capital, scientists and accepted principles and mechanism in support of building communities, the globalization of the economy, solving general problems of humanity and others.

At each of these levels, the process of transformation of knowledge is carried out from purely theoretical knowledge to applied research, in order to create and use practically significant results.

Our innovation process is a series of activities in the development, implementation and continuous introducing of novelties. It is possible to be analyzed in a **wide** and **narrow** range. *Broad* examination requires reporting of the sequence of activities in the chain

Research → Development → Production mastering → Commercialization

The views of I. Georgiev and M. Pandeva provide a greater scope of the innovation process.¹⁰ This approach allows for a more extensive coverage of the activities, the innovation process and related flows.

⁹ Elemeeva V. Y., Valdajceva C. V. etc., The Economic mechanism of science to the production, L. Univ., 1987, p. 17-26.

¹⁰ "Innovation process from an idea to create innovations and ends in the particular conditions of use." in Georgiev I., Science-Production-Realization, P., S., 1985, p. 24-25.

"The path of innovation began in the activities which produced innovative product concepts, and ends in consumption, which assess its public utility." in Pandeva M. and N. Ivanov, INNOVATION from theory to practice, Technique, 1983, p. 26-27.

In the *narrow sense*, the innovation process is only a part of the research and applied work. These are the constants and initial the production of innovation on the market. Reducing the scope allows clarification of the analysis and the act of creation of the novelty which ends with the introduction to the market.

Our innovation process can be seen in its *vertical* and *horizontal* development.¹¹

a) *vertical* application of the innovation process passes through the cycles

research → development → implementation

and ends with the first conversion of innovation into manufacturing and marketing of a reality;

b) a successful end of the innovation process in most cases becomes the home of *horizontal* process of dissemination of innovation. It is defined as a *process of diffusion* to the users in the field for which it is intended and other potential fields.

With the advent of the market being market, independent innovation begins and this is the beginning of its life cycle; the actual they do not interrupt the connection to the innovation. On a positive reception from the market, but signals for some process failures on its qualities, it *overflows of innovation in the life cycle of novelty*.

2.3 Novelty as a result

Innovation results from the application of the research, technological and economic potential of the business together with the needs of consumers. The results of innovation are satisfying certain needs and exciting and meeting new ones. Solving this complex production-economic, market and social process depends on the development of micro- and macro-level as well as the interests of the operators. The result is a new feature for the business and everyday life, embodied in the real or virtual form:

- new design, scheme, virtual item, etc;
- a new product, technology or service;
- the introduction of a new structure, scale, type of organization and management;
- implementation of a new method or conditions of research, production, management, marketing, service, and other.

Innovations manifest themselves in *two main forms*:

1) *Material* (embodied) innovations are a new property for life and business, consumer goods, raw materials, materials, plants, etc. which satisfy personal or production needs.

2) *Immaterial* (virtual) innovations, contribute to the renewal of the organization and management of business, finance, education, health, culture, communications, etc. This type of innovation is presented in the form of decisions, rules, methods, recipes and other intangible assets that improve homes and are used for the management of production.

Some authors, like I. Georgiev, B. Benev, M. Slavova, T. Nenov, etc., offer their approaches and use concepts such as species, types, shapes, and more.¹² They apply

¹¹ "Basic mechanisms for public promotion of technology transfer in the developed capitalist countries", in Journal. "Science and Technology Policy, CINTI, № 5, 1987, p. 34-35.

¹² Georgiev I., Science-Production-Realization, P., S., 1985, p. 99-105; Benev, B., Management innovation, MB, 1996, p. 8-11; Petrov M. and M. Slavova, INNOVATION how to make the idea into a product, PRINCEPS, V., 1996, 15-19; "Methodological issues in developing strategies for the creation and realization of

classification signs such as: source and rise, degree of changes that they cause, the field of application and use, the degree of usefulness in life and business importance to achieve the objectives of the acquisition, market effects, etc.

It is an illusion that all types of innovation that exist in practice can be captured and ordered. The author has used a number of criteria for the classification of innovation and three of them are presented, covering similar names to the indicated.

2.3.1 Depending on the reason for them nutritionally and the way of their creation, they may be defined as:

- *Improvised* (incidental, casual, fortuitous, chance, random) - as a result of circumstances for barring certain needs;
- *Pushed* (stimulated, programmed, supported) - are directed to new scientific knowledge and innovation, providing incentives for the development of business and the holding in the desired directions and meeting the prescribed requirements;
- *Towed* (induced, caused) - appear in relation to the needs for the development of production and consumption.

2.3.2 According to the degree of novelty and the scale of impact on economic activity, innovation can be considered as:

- *Fundamental* (radical, basic) - they form a perspective for major changes in the holdings, give impetus for the transformation of the existing system, lead to changes in supply and demand and the construction of new proceedings and, as a result of their applications, there is a significant change in the way of life or significant technical and technological conversion of production;
- *Original* (unknown, pioneering, primary) - shall be established on the basis of fundamental discovery, giving impetus to the activities in new areas. Where, as a result of the innovation process, a new way of production or supply of a service is introduced;
- *Improved* (synthetic, round, adapted, modified) - they absorb the potential of original innovations, adapt them to one or more activities of a business and improve the means of production and consumption. Here, significant changes are made in the capabilities of the known new features, dramatically improving their characteristics, mode of action and efficiency, the results of the innovation process can be linked to the continuous improvement of something known where developments outweigh the current state.
- *Pseudo innovation* (imitation, copied, small, simple) - they do not give rise to almost any substantial changes in the business, economy and ways of life. They can improve efficiency briefly, but can cause large losses since they infringe copyright. On one hand, they improve a process, but on the other, reduce the effect. In most cases, they change the exterior design, organisation, structure, but the actual effect on the consumer is not changed, and even has a negative sign.

2.3.3 Regarding the area of application, innovations can be: *organizational, management, production, financial, health, political, economic, social, cultural, etc.*

With the evolution of holdings over the past two decades and displacement gravity of material production to the service (such as aggregated reference terms for business), the burden of innovation rises not only in production, but also in all human activities.

Technological, organisational and product innovation are of particular importance for economic activity. "Innovation becomes a reality (a result) if placed on the market (innovation of the product or service) or is used in manufacturing or other activity (technological, processional)."¹³ Their degree of novelty, specificity, and effects to a large extent determine the effectiveness of their capabilities and competitiveness of the business units and the general public. This is due to the increased interest and their detailed analysis in innovation theory.

A) Product innovation (*commodity, goods, wares*) is the most dynamic and rapidly changing and has a wide range. This is because it is related to the needs of everyday life, which are characterised by dynamism and multiple changes in preferences.

The needs of people are variable and change continuously and redistribute the benefits to which they shall be executed. The usefulness of the product is the basis for its economic realisation. It is a common basis where the interests of the manufacturer (the economic benefit of its production) and user-satisfaction (which they receive from the use of novelty) meet. This requires both parties to comply with the option and the extent to meet the requirements, the amount of the cash flows and the consequences to their status and so on.

Innovation of products is associated with the change and supply of new or improved goods, materials, raw materials and other products for the final user or production. The phases, the amplitude and the relations of economic indicators of their existence are the basis for understanding of the nature and essence of the innovation process and lifecycle.

B) Technological innovation (*process*) is a new or improved process in the production and/or marketing of products or services. They result in significant improvement in the manufacturing process and are noticeable to the consumer as an amendment to the final products, which is reflected in the quality and price.

Technological innovations have a broader range of manifestation and may be treated as technological developments, significant technological improvements or other¹⁴ which from an economic point of view are:

- new technology ready for production use;
- the process by which a new competitive product or service is created;
- a means for an extension of "maturity" phase in the life cycle of a product or a reduction in the cost of production.

Since product and technological innovations emerge as something new and applied in business and on the market or they are the result of the improvement of the already existing things, they may be considered as:

1) *Progressive* innovations take place continuously giving new variants, additional features or enhancements of the methods, processes and products according to the changes in user demand. They reflect positively towards the reduction of production costs, changing certain quality characteristics, design, etc;

2) *Synthetic* innovation enhance the capabilities of the known management and production processes, leading to the creation of new products as a result of a combination of existing ideas or technologies;

¹³ Frascaty Manual, OECD, 1997, p. 19-22.

¹⁴ Oslo Manual, OECD, European Commission, THE EU, Euro stat, pp. 8-9, 36

3) *Broken* innovations arise from revolutionary ideas. They are associated with the introduction of a new way of management in general, manufacturing and marketing of products and/or services, radically different from those used to date.

C) Organisational innovations

These are the procedures, methods and practical solutions for the management of economic activity in the sphere of production and services. They are associated with the introduction of significant changes in the organisational structure, the application of successful management techniques and new or significant changes in the strategic orientation of the company. They significantly differ from those applied for the first time, for existing glossaries, and lead to a significant improvement of economic performance. They are, therefore, considered as innovation only when they go on to increase the productivity and sales.

CONCLUSION

1. Although relatively new, innovation theory has already made its system of basic views, ideas and situations and it is expanding its presence in economic studies. This is due to the nature and the manifestation of innovation in the business system.

2. As an activity, process and result, innovation is a complex phenomenon resulting from each other and creative actions dictated by formalising the idea to create and use something new which can improve and transform the environment.

3. There are different results which specify the impact of innovations on the environment, business and people. They are the basis for improvement of production, as well as economic and social relations.

INOVACIJE

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Razvoj je posvećen inovacijama. Osnivač teorije inovacija Jozef Šumpeter inovacije povezuje sa preduzetničkim aktivnostima i definiše ih kao stvaranje novih kombinacija ili promena u razvoju tržišta i proizvodnje. Navedeni su osnovni koncepti prirode inovacija i shvatanje da se u širem i užem smislu posmatraju sa tehnološkog, poslovnog, potrošačkog, marketing i javnog aspekta. Na osnovu ovog dato je opšte razmatranje inovacija, kao realizacije i praktikovanja nečeg novog što dovodi do promena u poslovnoj aktivnosti, ljudskim životima i razvoju društva. Naznačena je karaktersitika inovacije kao aktivnosti, procesa i rezultata, kao i izvršena klasifikacija različitih vrsta inovacija.

Ključne reči: *inovacija, novina, inovaciona aktivnost, inovacioni proces.*