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INNOVATIVE PROCESSES IN MANAGING THE PRODUCTION ENTERPRISE

Abstract:

The activities of industrial enterprises in the globalized market environment causes the connection of their strategic objectives. The use of modern technologies, organizational and economic innovations or rationalization of production by lowering costs, creates new opportunities for planned activities. Technological, process and organizational aspects of innovation are the driving force for industrial competitiveness. Innovativeness and innovation processes present in the market are an important element contributing to economic growth. The importance of innovativeness in industrial sectors, recognized as products or technologies, must also be seen in the perspective of rational management. This is an important element of business executives who need to develop industrial activities of the enterprise while stimulating and developing innovative activities in other structural areas such as: financing of new technology or technology development of storages. The article presents the theoretical aspects of innovation in terms of factors influencing innovation processes.

Keywords:

innovation processes, management, industry

JEL Classification: M21

Introduction

Steve Jobs, co-founder, president and chairman of the board of Apple Inc. said, *"Innovation distinguishes between their leaders and followers"*, while Barack Obama the president of one of the largest economies of the world has defined innovation as follows: *"Innovation in today's global economy is the main source of economic growth, job creation and competitiveness. A well-functioning system of intellectual property is crucial in our ability to encourage innovation and accelerate introduction of new services and products to market."* (Obama, 2011).

The term *"innovation"* is the theme of a wide range of understanding and interpreting. It is recognized that innovations are all activities which are implemented in a better or the new way than the previous, and the result has an impact on the socio-economic living conditions (Francis, Bessant, 2005). Innovations in contemporary reasoning are seen as the transformation of potential into components of economic development and manufacturing methods (Boguski, 2007).

Innovations are described by various social groups, such as economists or scientists who deal with either the social domains as well as the field of science (Janasz, Koziol, 2007). Among the various approaches of innovativeness occurring in the literature, it can be observed that all are pointing for a single precursor, Austrian economist - Joseph Alois Schumpeter, author of *"Theory of economic development"* (1911). In his book, he identified the concept of innovation with five activities (Schumpeter, 1960):

- introduction of a new product;
- application of new production technology does not encountered in a given industry;
- emergence of a new market where the domestic industry does not operated;
- acquisition of a new resource or semi-finished products;
- introduction of an unknown organization or a new industry.

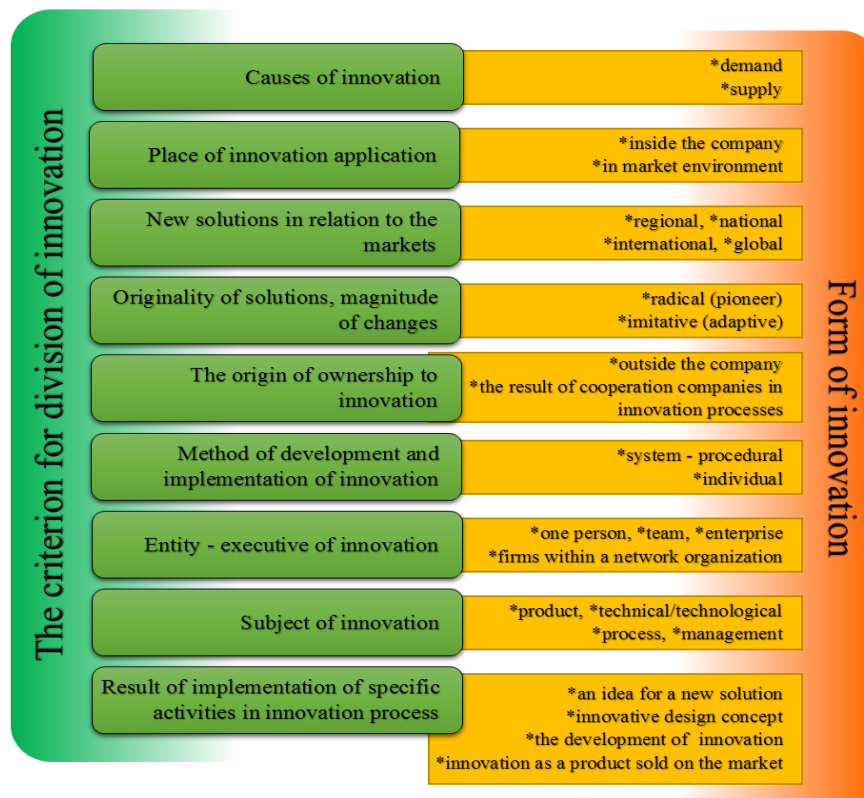
Schumpeter's definition in classical approach of capitalist economy concerned the land, production and capital, which was a kind of foundation for later emerging terms of innovation. An example of another theorist defines this issue is a Polish economist Prof. Joseph Pajestka, who believed that objects, product and technology operating in one environment can be innovative if they are adapted in a different environment (Pajestka, 1975). Ricky W. Griffin, in turn, sees innovation as a company commitment, inserted in the assimilation of new or existing product or service (Griffin, 1996). Enterprises which are striving for success at introducing innovations, should face with

the necessity of development of human capital investment. (Łęgowik-Świącik, Kuraś, 2014)

Classification of innovativeness

Innovation enriches knowledge and indicates the presence of something new, it can also initiate the creation of economic environment, which is associated with building or falling the companies. Innovation is a process relating to the functioning in its general meaning, and its benefits come from of an interactive learning system, so that it can acquire the knowledge and competences (Centrum Badań nad Edukacją i Innowacją, 2000). Innovations in theoretical sense are diverse in nature, in a practical sense clearly leads to the development of company.

Figure 1: Innovation types



Source: Own study based on M. Dolińska, *Innowacje w gospodarce opartej na wiedzy*, PWE, Warszawa 2010, p. 21.

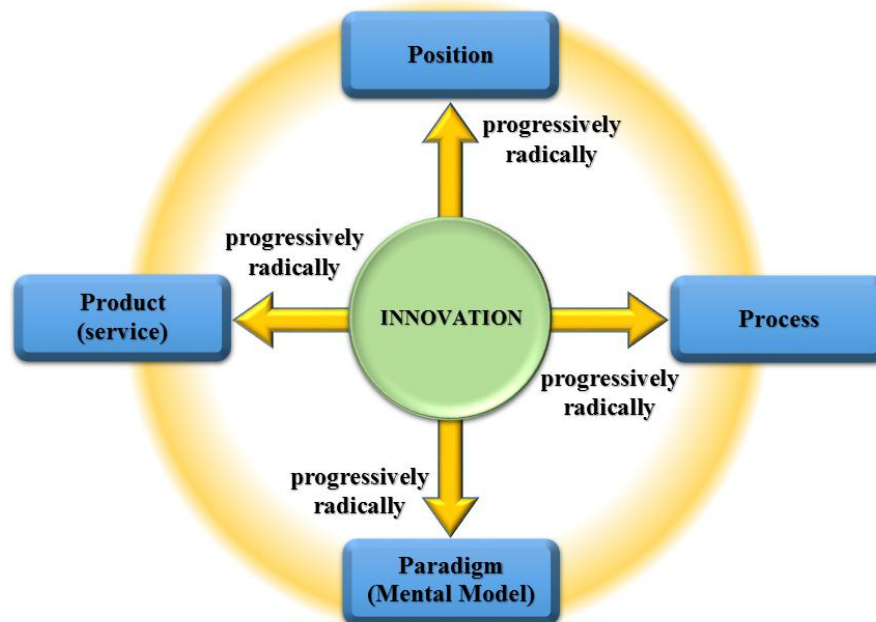
Factors responsible for the technological, economic and social progress, may refer to various areas, thus creating a division of innovation by different criteria, as shown the figure above. It is important to use an appropriate criterion to determine degree of innovation in the enterprise. In the perspective of strategic planning it provides a clear picture of enterprise in the scale of its future development (Wiśniewska-Sałek, 2013).

The innovative processes

The developmental area of the company refers to changes that may take different forms, (Fig. 1) divided into: product (change of the sale subject), process (change in production and distribution method), positioning (change of conditions in implementation of product/service) paradigm (change in enterprise functioning) (Francis, Bessant, 2005).

An example of "4P" innovation the in the context of radical and incremental changes from the point of view of what we can offer: in a systematic manner it could be improvement of the bulb performance, while in extreme terms, it will be a change per LED lighting. With regard to the manufacturing method an example in the mind of the precautionary is to increase the range of services e.g. at the brokerage office, in turn, an extreme move could be shares rotation via the Internet. Positioning can relate the micro-lending provided by Grameen Bank for the poorest population, which is called "fresh" activity at the "4P" innovative area. Whereas in the perspective of continuous procedure, it will be operated in the range of paradigm, such as IBM, which has expanded its activities to the sphere of consulting and services (Tidd, Bessant, 2011).

Figure 1: „4P” innovative plane



Source: Own study based on D. Francis, J. Bessant, *Targeting innovation and implications for capability developmnet, Technovation, Vol. 25, No 3/(2005) p.171-183.*

The variety of concepts, types, and general reasoning of innovativeness, caused that it was necessary to bring the methodological approach adopted in the methodology

research of the European Union innovativeness, to the measurement of innovative potential system in cross-sections of internal and external interactions of institutions, infrastructure and the environment.

Table 1: External determinants factors of innovation processes

Ability	Characteristics
Definition of current and future innovativeness needs	<ul style="list-style-type: none"> – product, process, organizational and economic innovations – the source of information are: the customers, service, collaborators, analysis, results of work R&D field
Designing program and its optimization	<ul style="list-style-type: none"> – development material, personnel and financial measures for actions taken independently – graphical presentation of material, organizational and economic effects with the time
Execution control of consecutive procedures	<ul style="list-style-type: none"> – appropriate personnel – technical measures and computer software disposition – possession of access into databases of external allies
Construction of innovative solutions	<ul style="list-style-type: none"> – trained personnel – using creative thinking techniques – having knowledge of design methods
Implementation of projects and measures for products and then to individual customers systems	<ul style="list-style-type: none"> – production process designed technologically and organizationally – implementation of a new production – implementation of new methods and technological/technical tools in production – participation in tests also for customers – adequate technical and organizational assistance from users regarding implementation
Enhancing the research and development information	<ul style="list-style-type: none"> – development of LAN – continuity of the connections in internal network system with employees and external institutions – technical communication means
Continuous improvement of employee potential	<ul style="list-style-type: none"> – personnel motivation which is suitably hired to the work profile – self-learning enterprise system and the consequent further training and participation in innovation networks – personnel expansion with specialists – proper selection of consulting firms and own experts
Guarantee of technical resources programming and prototyping	<ul style="list-style-type: none"> – systems such as: CAD, CAM, CAE – adequate equipment base and their adaptation for new tasks – newest equipment meets the standard requirements – possibility of using an experimental research results coming from market allies or external databases
Amount of financial resources matched to innovative activity	<ul style="list-style-type: none"> – proceeds for R&D from the company – the appropriate calculation of all costs types – acquiring external financing sources as a EU programs and government loans and credits

	– using tax benefits arising from the scientific research and innovation activities
Exploiting the employees and institution possibilities in the innovative way	– the development of down barriers to innovativeness
	– information work concerning the benefits of cooperation between entrepreneurs with academic and research institutions
	– marketing activities relating to the above information
	– developing and improving of the inventive activity
	– participation of top-level management in innovation activities in technical and organizational field

Source: Own study based on M. Dworczyk, R. Szlasa, *Zarządzanie innowacjami. Wpływ innowacji na wzrost konkurencyjności przedsiębiorstw*, Wyd. Politechniki Warszawskiej, Warszawa (2001) p.177-180.

External conditioning (Tab. 1) determining the innovativeness is the market, which gives the possibility to implement scientific and technical solutions. It also decides about the time and a way of innovation implementation, also points the direction of industry searching and the moment in which the product/service will be withdrawn from it and replaced with something new. The external environment consists not only from the market. The enterprise is also surrounded by customers, cooperators, competitors, and so entities excitatory of innovation process through technological and industrial activities. Another component of the operational environment are the institutions engaged in science and technology. They create inventions and important discoveries with potential application in various fields of economy. The last elements of the closer external environment are the institutions and organizations supporting/mediating in the innovation implementation. These include the science parks or entrepreneurship incubators, as well as local and regional environment ensuring economic climate with available infrastructure.

The factors determining the formation and diffusion of innovation in the economy make distal company environment which includes the institutional, organizational and informational solutions (an innovative system of a particular country) and the national innovation policy (Dziadkiewicz, 2009). The next determinants are the institutional and market conditions and the educational system. The first includes labor force capital accessibility, standardization and certification, as well as legal and tax system. Following defines a bunch of public and private educational institutions along with educational programs aimed at enhancing the professional qualifications to develop innovative abilities of the employees (Janasz, Koziół, 2007).

Enterprise innovative activity is conditioned by diversified structure of its links with sources of information, resources, news, technologies, practices, actions and the human and financial potential. Another interdependencies are merging an innovative enterprise with the other participants of the innovation system, and each links are dependent on the nature of the company and the market in which it prospers. Existing dependencies may differ with regard to source (with who or what the relationship

exists), cost (the value of investment required) and the level of mutual interaction, which is the direction of information transfer and level of interpersonal relationships. These relationships may also be a different nature, describing the internal, within the unit, or external operations and thus influenced by the way of organization definition. Initiatives that deal with the measurement of innovativeness should be focused on the innovation process (not only its effects) and featuring issues related to the potential, commitment and results of innovative activities. Determinants that creates an innovativeness in the context its inhibition or stimulation are the result of the innovation being initiative, taken by the company itself and other entities (innovative activity), together with their mutual potential, formed by resources and cash flows (Olso Manual, 2008).

Summary

In conclusion of theoretical approach of innovation it can be said that it is a wide range of operation and multidimensional concept. Presented concepts of innovation and its types have shown that it takes place in every action undertaken in the context of socio-economic activity in enterprises. Comprehensive coverage of innovativeness was presented on the 4P plane (position, process, paradigm, product), which allows to highlight the factors influencing the formation and diffusion of innovation among the enterprises operating on the market. Innovativeness is a very important part of enterprises development, it allows to use full potential of the company with the latest solutions and methods from each area of enterprise management.

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