

KNOWLEDGE DEVELOPMENT FOR INNOVATIVE ACTIVITY

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Abstract: Knowledge is decide about development of modern economy. every entrepreneur who can use resources create more added value than competitors. Many of as, mostly economists, know about special role of innovation as a key factor building the competitive position of enterprises. An obstacle in introducing innovation, either in terms of technology or products is most of all high cost of developing and implementing them. Lack of developed legal and institutional infrastructure which favors the implementation of new ideas causes that investing in new services and creating new innovations is risky. The article attempts to make people realize how important it is to develop knowledge in innovative activities.

Keywords: Internet of Things, innovations, Industry 4.0, innovative activity.

Introduction

Innovative activity it a most important thinks in the development of the economy, development of technics and technology. This type of activity is understood as an activity focused on increasing the tendency to create, implement and apply innovations to the daily activities of each enterprise. It is a complicated process, requiring significant financial outlays.

A developed and modern economy, development of enterprises, a knowledge-based society are invariably the most important thinks of functioning every country. Polish economy, after many years of experience does not fully achieve these objectives. Still, the most important challenge for the Polish economy is an attempt to building awareness and develop knowledge among the society as well as to research and implement research results study of innovative processes, without which the modern economy cannot function efficiently.

New products manifest themselves in a specific supply structure. Therefore, innovative activity is the sphere of human activity, without which the development of civilization is impossible. Choice forms of functioning of enterprises on the market is a complex process that requires specifying selection criteria for the many factors that will determine implementation specific strategies. The main aim of the article is an attempt to assess and analyze how important it is to develop knowledge in innovative activity and its impact on the creation and diffusion of innovation. The main assumption is the thesis that knowledge is currently the best foundation for development activity of entities on the market by increasing the level of innovation. The development and acquisition of knowledge among entrepreneurs and scientists is an area that stimulates socio-economic development, thus improving the competitive position of organizations operating on the market.

An indispensable condition for the implementation of shaped trends is the consolidation of entrepreneurial and innovative attitudes and the pursuit of these attitudes should be based on integrated knowledge development. An important task is observation of changes in the adaptation mechanism of various entities towards innovative activity understood as the tendency to introduce various forms of innovation in individual spheres of management.

One of the most important challenge for the Polish economy is an attempt to reduce excessive structural differences between Poland and highly industrialized countries, especially European. It is still necessary to build awareness and develop knowledge among the society as well as to research and implement research results of innovative processes, without which the modern economy cannot function efficiently. An indispensable condition for the implementation of shaped trends is the consolidation of entrepreneurial and innovative attitudes and the pursuit of these attitudes should be based on integrated knowledge development. An important task is observation of changes in the adaptation mechanism of various entities towards innovative activity understood as the tendency to introduce various forms of innovation in individual spheres of management. The analysis of this mechanism should answer the question, which and to what extent economic and social conditions are able to stimulate on the one hand, and restrict the innovation activity of enterprises on the other. There are many

economic and social determinants of innovative processes in enterprises. We have many economic and social determinants of innovative processes in enterprises.

Work on creating, assessing and implying innovation is a premise for determining development directions and changing key innovation diffusion programs. Industrial activity (or manufactural) should play a significant share in every economy, it should be an important force in implementing modern solutions. Enterprises surrounded by competition are forced to seek pragmatic and new solutions to survive in a dynamically changing environment. Large organizations, often with global reach, have the greatest chance of innovation.

Unfortunately, the structure of enterprises in Poland is dominated by micro and small entities with a small number of medium-sized enterprises. It is micro and small enterprises that form the basis of the Polish economy. They are the initiator of new jobs and an accelerator of new technologies development. It is well known that in order to survive and be competitive, small entities are forced to seek cooperation and cooperation with others. By creating larger place of enterprises of diverse nature we enable to flow of knowledge and information between enterprises, in which the complementarity of available and hidden knowledge, its mutual interactions are the basis for creating new (modern) solutions of a socio-economic nature. It should be noted that knowledge is the basic carrier of innovation.

Knowledge and innovations

We must remember that a knowledge is a most important thing in making innovation [Januszkiewicz, Cywiński, 2019, p. 37]. The increase in the role of knowledge is associated with the development of technology, integration of education with production and services, the growing scientific and technical potential, innovative enterprises, or the intensification of mutual interaction of knowledge on individual spheres of human life (Obrębski, 2002, p. 44). In addition to the necessity of implication of knowledge in the activities of each entity, there are a number of barriers that each organization must deal with.

These include systemic and political-legal solutions, phenomena related to the seasonality of demand or spatial geography. The development of business structures can contribute to activating the society to create an innovative environment that uses knowledge. Introducing innovation in the organization, involvement in individual stages of the innovation process is the result of several factors affecting both the organization and the entities operating in its structures. The positive attitude of entities to the processes of creating and implication of innovation occurs when the onfiguration of factors is such that the company wants, can and is

able to create and implement innovations with balanced economic efficiency [Obrębski 2002, p. 98). Factors stimulating the introduction of innovation can be found both inside the company and in its external environment. Many Author`s agree that determinants can occur on many levels than economic. We can often found the following determinants of innovation introduction by (Obrębski, 2002, p. 101):

- internal processes in the human capital of the organization such as motivations, intellectual and creative predispositions,
- socio-political climate,
- scientific and technical, economic, organizational and educational information system,
- legal and administrative standards,
- planning systems, market mechanism, prices, economic and calculation of the enterprise.

Looking from the perspective of the organization's functioning, economic factors are still the most important factors. A large role in business, in the context of creating and implementing innovation in business, is played by the market, which plays an inspiring and verifying role. The inspirational function of the market can be talked about only when the market decides, among others, about the need to apply a new solution, the direction of search and selection of the idea, the date of its introduction on the market, the scale of application or the moment of withdrawal of the product from production / market (if necessary) or alternatively, replace it with a new one. Systemic solutions, such as the financial system, credit, tax and monetary system are important for the culture of innovation, conducive to their creation and human creativity. In addition to the prevailing opinion, taking into account primarily economic factors should also be included (Januskiewicz and Cywiński, 2019, p.89):

- enterprises or organization flexibility,
- ability to read and forecast market behavior,
- size of the enterprise or organization,
- continuity of management and the idea that accompanies the creation of climate change and development,
- ready and motivation of management for make a risk,
- height of the market entry threshold.

Factors that are independent of the actions taken in the enterprise and affecting the climate of innovative activity include, among others (Januszkiewicz and Cywiński, 2019, p. 75):

- competitors on the market,
- market upward trends,
- pace of technical progress,
- economic situation,
- influence of the state on the economy.

Factors determining the creation and implementation of innovations can be considered because of the way they affect the entity's attitude to innovation, whether they shape the ability, skills and willingness of staff to implement innovation. One of the most important sources of incentives for implementing innovation is the results of own research and development works, supplemented with inventive and rationalizing activities, as well as foreign technical thought [Cywiński, 2019, p. 47]. The process of providing and selling products is based on innovative technologies. A complementary inspiration and another determinant is the systematic observation of what is happening in the markets, marketing research, presence at fairs, conferences and exhibitions [Pomykalski, 2001, p. 26]. The Internet and ICT (Internet and Communications Technology) are useful, in which subsequent entities test their capabilities, and its range on the market will only progress. ICT technologies have greatly facilitated access to information, both about market trends and the experience of others, but above all have become an opportunity to develop innovative skills among employees and potential innovators. Innovation policy propagated in OECD documents is understood as one of the economic policies, which covers the following areas [Frascati Manual, 2018, p. 49]:

- strengthening connections in the national innovation system,
- shaping and developing the capacity to innovate, both in the field of technics and technology and organization with education as well,
- optimal use of innovation as a basic factor of economic growth and increasing the number of sustainable jobs,
- making structural technical change, technological and quality change in industry,
- use of international cooperation and globalization processes in economy.

By implying the above statements, a belief is being built to effectively influence the development of innovation, a number of measures and elements should be used, such as [Janasz, 2005, p. 131]:

- caring for the development of education by educating at various levels,
- development of science through grants or national research programs,
- development of infrastructure supporting innovative activities, such as technology parks, technical and technological assistance networks, innovation centers or technology transfer centers,
- universal access to information by creating information centers and networks as well as libraries,
- creation and access to specialist consulting services for small and medium enterprises,
- easier access to financing of innovative enterprises through loans, tax or loan guarantees,
- legal regulation such as intellectual property protection or monopoly control.

The factors favoring the innovativeness of an enterprise certainly include various forms of innovation transfer resulting, among others, from international economic relations, such as [Penc, 2008, p. 67]:

- exchange of goods with foreign countries, because in best products is objectified scientific and technical thought,
- license export and import,
- exchange of technical documentation not covered by license agreements,
- rendering services to or by a foreign entity, which may include managerial contracts of franchise agreements,
- conducting research and development abroad, joint R&D projects with foreign enterprises, studying foreign literature,
- training personnel abroad or by foreign specialists, employing foreign employees as well as internships and apprenticeships or personal contacts with foreign specialists,
- various forms of cooperation in production with foreign partners, including production ordering, co-production, construction of complete facilities abroad,
- creation of joint enterprises,
- undertaking foreign direct investment.

Innovation and meeting customer needs

Changing customer requirements make it necessary to change the approach to the supply chain, regardless of whether they concern the traditional market or e-commerce. Regardless of whether we are dealing with drones, the Internet of Things (IoT), robotics, autonomous vehicles, the scope of ICT technologies in logistics is expanding. This phenomenon is particularly noticeable in the e-commerce industry. Most entities operating on the market, including those starting their market conquests, are present in the global Internet network. Problems may arise in the use of available Internet tools used by enterprises (Big Data, IoT or Industry Concept 4.0). The specificity of the industries makes it necessary to use available ICT (Internet and Communication Technology) tools in their activities. This is the cause of rapid changes in the market. On the other hand, this fact should motivate other entrepreneurs to impose available IT tools and solutions and to disseminate related innovations. Process efficiency increases, distribution channels shorten. The wide range is distributed to the customer in real time and sales can be made from anywhere in the world. The dynamic development of purchases results in the development of large logistics operators and other market participants (4PL/5PL).

Thinking about the process of planning and building a supply network is changing. Process efficiency, optimization and quality management are no longer a modern solution, but everyday practice. With the development of artificial intelligence, information processing services (cloud computing) are spreading. The market forces changes and innovations. This is due to increased consumption (despite declines in 2020) and the growing concentration of the population in cities [GUS, 2022]. According to the UN, in 2030 over 60% of the population will live in cities, and in 2050 already 70% [UN, 2022]. We are slowly seeing the emergence of a new world where machines and artificial intelligence ensure security of supply and convenience. The development of mobile technology (5G) enables the use of the network by a very large number of users and devices at the same time. Polish society is increasingly willing to buy goods via the Internet (73%), guided by convenience, wide range, price and flexibility [Gemius, 2022]. The e-commerce industry has faced many challenges. The dynamic development of e-commerce is influenced by the growing mobility and high popularity of mobile devices. The value of the entire e-commerce market in Poland, including on-line services, is constantly growing.

Innovation is driven by three elements - data, information and knowledge. Data becomes useful when you turn it into information and then into knowledge. The huge amount of data

received and the collection of information requires new technological and organizational solutions. Increasingly, there is a model of cooperation between a human and a computer, and then computers with each other in their own network (Model Industry 4.0). This means connecting machines, computers and software into an integrated network, controlling, among other things, production processes to improve human-integrated efficiency. The new revolution in the industry is not only changes in technology. We can look for the implementation of this concept in new ways of performing work and the role of man in industry [Januszkiewicz, 2019, p. 67]. Thanks to digitization, the machines gained greater efficiency, flexibility and precision, which in turn resulted in the implementation of automation. Planning and control systems have been developed to coordinate the operation of machinery and equipment in production. We are currently witnessing systems integration and networking. Digitally controlled machines are integrated with people on the Internet, using ICT solutions. Materials and finished products are always identifiable, they also have the ability to communicate with each other continuously, realizing the flow of information between machines and the production system and vice versa.

Conclusions

As far as possible, every enterprises should take all actions that are aimed at transferring scientific and technical – technological ideas into market success through a constant transfer of knowledge and information between organizations, especially knowledge acquired form R&D and transferred through interpersonal contacts at various levels. The conditions for the emergence of innovative processes may have a complex sociological and psychological nature, but also philosophical, historical, organizational or economic nature. Of course, they change over time, each of them may have a different meaning and impact, but they are undoubtedly dynamic and depend on factors that at a given moment have an impact adequate to the political and economic situation in the country.

The analysis of supply chain management in the arrangement of the fourth and fifth participant in the supply market (4PL, 5PL) shows that the consumer who more and more often makes purchases via the Internet is characterized by a wide range of access to information. The presented information on the specificity of the functioning of the market and its development trends show how the market is changing and how great is the need to adapt to the changing conditions on the market. The market forces the implementation of innovations, and the development and diffusion of knowledge is the only solution to this. This is evidenced by the number of users, the variety of companies and the huge amount of articles available. The market

is growing along with the development of ICT technology. This means that it can use everything related to the Internet, collect information about an individual customer and access their purchase history. Convincing a huge number of people in Poland and around the world to shop online over several decades is staggering. We observe and will observe the emergence of new technological, technical, communication or organizational solutions, the common factors of which will be knowledge and innovative activity.

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