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**SOURCES AND DETERMINANTS OF ENTERPRISES'
INNOVATIVENESS**

This paper raises the theoretical issues of innovation, so important for business practice. The main aim of the paper is to systematise the sources and determinants of innovation at companies, and to outline the role information plays in these processes. The authors discuss four basic categories of innovations: product, process, marketing and the organizational ones. The authors focus on the change in the understanding of innovations in a turbulent environment, under aggressive globalization and strong competition.

Keywords: enterprises; innovations; innovativeness.

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ДЖЕРЕЛА ТА ЧИННИКИ ІННОВАЦІЙНОСТІ ПІДПРИЄМСТВ

У статті розглянуто теоретичні аспекти поняття інноваційності, що мають особливе значення в бізнес-практиці. Систематизовано джерела та детермінанти інноваційності компаній, а також виявлено роль інформації в цих процесах. Розглянуто чотири основні категорії: інновації продукції, процесів, маркетингові та організаційні, оскільки саме вони відіграють особливу роль у функціонуванні компанії та її успішності на ринку. Увагу зосереджено на змінах в розумінні інновацій у турбулентному середовищі, в умовах агресивної глобалізації та значної конкуренції.

Ключові слова: підприємства; інновації; інноваційність.

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**ИСТОЧНИКИ И ФАКТОРЫ ИННОВАЦИОННОСТИ
ПРЕДПРИЯТИЙ**

В статье рассмотрены теоретические аспекты понятия инновационности, имеющие особое значение в бизнес-практике. Систематизованы источники и детерминанты инновационности компаний, а также выявлена роль информации в этих процессах. Рассмотрены четыре основные категории: инновации продукции, процессов, маркетинговые и организационные, поскольку именно они играют особую роль в функционировании компании и ее успешности на рынке. Внимание сосредоточено на изменениях в понимании инноваций в турбулентной среде, в условиях агрессивной глобализации и высокой конкуренции.

Ключевые слова: предприятия; инновации; инновационность.

Introduction. Innovativeness, as a separate category in economic sciences, was introduced in the first half of the 20th century by Austrian economic school. According to the thesis formulated by Schumpeter, innovativeness of enterprises determines economic development to a larger extent than capital (Schumpeter, 1960). Bielski claims that everyone who introduces new combinations of production factors is an entrepreneur-innovator (Bielski, 2000). Schumpeter's definition links innovations with a new combination of production factors, defining them as introduction of new goods, a new production method, opening up a new market, obtaining a new source of raw materials, or a new way of economic processes organisation.

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Schumpeter also distinguished such concepts as invention, innovation and imitation, which provided the right perspective for the phenomena whose effect in the market sense were innovations. This outstanding Austrian economist was also the author of an important concept in the context of innovations – the so-called creative destruction. He thought that long-term economic growth required continuous destruction of old structures and continuous creation of new, more effective ones. Creative destruction is not possible without innovations. It is an innovative activity that ensures the emergence of increasingly effective economic structures. Thus, destruction may be useful in economic context, provided that it is creative, i.e. it goes hand in hand with innovations, with improvements of economic processes. Competition triggered off by such processes has a positive impact on the dynamics of economic conditions.

Innovations: types, sources, factors and determinants. Academic literature provides various classifications of innovations, depending on their effect, location or model of their creation (Krawczyk-Sokolowska, 2012: 12–13).

An interesting criterion for dividing innovations based on the reason for their creation was proposed in (Weber, 1996: 470). Taking into account the natural process of changes in the environment of an enterprise, he divided innovations into routine and forced ones. Routine innovations are introduced by management. These are usually minor changes made to a product to ensure it is still commercially attractive. Forced innovations, on the other hand, are implemented by enterprises under the conditions of economic difficulties and are usually connected with an attempt to reduce costs.

We can identify 4 fundamental types of innovations. In this context, we can distinguish product, process, marketing and organisational innovations.

Product innovations refer to the introduction of goods or services that are new or significantly improved in terms of their features or applications. They involve product improvements with respect to technical aspects, materials, software, easiness of operation or other functional characteristics. Product innovations may use new knowledge or technology or be based on new applications or combinations of the existing knowledge and technology (Brzeska-Mikoda, 2009: 6).

Process innovations mainly refer to the implementation of a new or significantly improved production method, as well as a way of delivering or creating and providing services. They involve changes in technology, equipment or software, which can consist in the use of new equipment or software, new procedures or techniques employed to provide services (Brzeska-Mikoda, 2009: 8).

Marketing innovations refer to the implementation of a new marketing method which is an element of a new concept or strategy and is connected with significant changes to the design or construction of a product, its packaging, distribution, promotion or price strategy (Brzeska-Mikoda, 2009: 9).

Organisational innovations refer to the implementation of a new organisational method in the area of the principles governing enterprise operations, the organisation of the workplace or relations with the environment. The distinguishing feature of organisational innovation is the use of an organisational method that has not been previously employed at a given enterprise and results from strategic decisions taken by management (Brzozowska, 2013: 8–13). Implementation of an organisational innovation is often connected with the implementation of a process or product innovation in an enterprise (Brzeska-Mikoda, 2009: 12).

Contemporary literature distinguishes a whole range of techniques and tools designed to help generating ideas and allow enterprises seize existing chances or stimulate creativity of their employees. They include, among other things, the following: resource optimization; functional analysis; trend prediction; creative challenge; HIT matrix; SCAMPER; 6-3-5 Brainwriting; concept tree; random stimulus; provocation-and-movement.

Resource optimization consists of identification of all possible resources which can be used in a new solution (e.g., materials, time, space, information resources, natural and/or human resources). Resource optimization shows that a lot of innovations do not require investment into additional resources, because it is possible to use the already existing ones (Starostka-Patyk, 2013: 182–198).

Functional analysis requires the creation of a functional diagram that shows all flows within a system – both desired and undesired ones. This enables effective movements of resources, elimination of numerous errors and improvement of enterprise's innovativeness (Baran, Ostrowska and Pander, 2012: 93–95).

Trend prediction determines the direction in which individual systems develop. Although this technique may be labour-intensive in application, it prevents useless solutions from appearing or implementation of innovations at a wrong time.

Creative challenge is questioning the existing status quo while striving to identify new solutions. This concept is based on the three-stage E/R/A approach, where "E" (eliminate) gives the answer to the question of whether any element in the existing approach can be eliminated. Stage "R" (reasons) is dedicated to concentration on the reasons for applying the existing approach. Stage "A" (alternative) is focused on searching for alternatives to the existing approach. The E/R/A is particularly useful at the stage of generating ideas (Baran, Ostrowska and Pander, 2012: 93–95).

HIT matrix means comparing the characteristics of two apparently unrelated products or services to search for new ideas. It should be noted that new products/services are often a combination of the already existing features (Silverstein, Samuel and DeCarlo, 2013).

SCAMPER is the system of 8 blocks of questions referring to innovative activities for products or services under analysis (LH, 2011). Their first letters build the acronym SCAMPER: "S" (substitute) – substitution of part of a product or service with a different element, "C" (combine) – combination of elements of different products/services, "A" (adapt) – adaptation of a certain feature of a product/service, "M" (modify) – modification of a part of or the entire existing solution, "P" (put to other purposes) – putting the existing product/service to other purposes, "E" (eliminate) – elimination of a part of a product/service, "R" (reverse) – reversing the order in the area of production or process of service provision. The SCAMPER technique is most useful when a company has ideas it wants to develop and improve. It works well in the case of a market with intense competition.

6-3-5 Brainwriting is a technique that is a modification of classical brainstorming. Instead of presenting their ideas, the participants of a session write them down. The numbers 6-3-5 in the name of the method describe the process. Each of 6 participants writes down 3 ideas during 5 minutes. After this time, the participants exchange their worksheets and write down more ideas. The whole procedure is repeated until the worksheets with ideas perform a full round. Out of dozens of ideas

generated in this way, at least a few are innovative and worth considering (Stabryla, 2015: 84).

Concept tree is a graphical method supporting the process of developing ideas. It enables the specification of possible ways to bypass the existing barriers (Bunz, 2008: 50)

Random stimulus means releasing new ideas by using a stimulus that is not related to the project, such as: a picture, word or even some smell or sound. Such a stimulus is intended to induce participants to be unrestrained by conventional thinking (Rosenfeld, 2014: 237–242).

Provocation-and-movement is a method formulating a shocking statement to stimulate participants to think creatively. It questions the status quo and makes them imagine "what would be if". Provocation becomes a stimulus for new ideas.

Many of the abovementioned tools may contribute to the creation of innovations. Some of them can be used concurrently. They can even be intentionally combined, e.g. resource optimization and brainwriting, or creative challenge and provocation-and-movement.

The end of the 20th century brought fundamental changes to the environment of enterprises, i.e. new, incomparably fast and effective communication channels in the form of Internet connections and resources, mobile telephony etc. This allowed enterprises located in different places around the world get almost equal access to knowledge, potential partners, customers and suppliers. Incomparably greater access to information also impacts customers' awareness and their decisions. Widespread use of ICT (Przepelski, 2005) changed corporate cultures, creating new possibilities to develop strategies of enterprises. Nowadays, what is particularly important to every enterprise is reliable information received in time, the ability to quickly and properly interpret it (knowledge), in order to maintain or restore competitive advantage (Lis and Wojcik-Mazur, 2014). Cooperation between enterprises is based on information and knowledge sharing (Mesjasz-Lech, 2014). The economy of the 21st century is referred to as knowledge-based economy, and innovations in advanced technology and market globalisation are indicated as factors forcing change in the management of economic processes. In order to achieve success, enterprises have first of all to adapt themselves to quickly changing environment through active entrepreneurship and effective innovations (Przepelski, 2005). In times of increasingly fast changes, innovativeness has become a particularly desired characteristic of any economic entity.

Most generally, factors shaping innovativeness at enterprises can be divided into macroenvironment-related determinants, i.e. independent from or slightly dependent on an enterprise, and microenvironment-related determinants, those that are subject to the process of enterprise management and represent its internal resources. External factors influencing the creation of innovations include, among other things: conditions of socioeconomic and legal systems, overall development level of a given country, degree of economy's openness, investment opportunities, practice and principles of managing an economic policy, including innovation policy. Internal factors include, among other things: personality and experience of entrepreneurs, characteristics of enterprises' employees (ambitions, education), company's location and its market environment.

Information always plays a key role in the processes of creating innovations. Analysis of information sources enables the identification of 4 key areas important for enterprises innovativeness (Przepelski, 2005). Information can be of internal, market, institutional and other origin.

According to the literature on the subject, a set of desired factors conducive to the creation and implementation of innovations can be grouped into several areas (Przepelski, 2005):

- enterprise: development vision, business philosophy focused on change, internal communication, promotion of entrepreneurial behaviour, management's focus on innovative activity, selection of well-prepared and motivated staff, feeling of belonging, strong leadership, the ability to forecast the direction of the development of the industry and products, creativity, flexible adjustment of a project being implemented to changeable conditions of the environment, optimism, use of knowledge management tools;

- market environment: competitive pressure, entrepreneurial behaviour of business partners, observation of competitors' behaviour, customers' expectations, cooperation with suppliers and business partners, possibility of recruiting key employees, purchase of technology (know-how), industry reports, scientific and research centres;

- social and cultural environment: education level of the society, consumers' willingness to experiment, dominance of younger consumers in demographic structure, entrepreneurial culture in a region;

- public and legal environment: availability of sources for financing innovative projects, stable and transparent legal regulations, developed telecommunication infrastructure, tax incentives and advantages.

The development of IT, modern methods for managing an organisation and an increasing number of horizontal and vertical integrations between enterprises have contributed to the development of networking innovative models, which take into account the use of new technologies (especially IT) in the creation of innovations. These models treat innovative process in a very specialised and individualised way with respect to the needs of a particular enterprise (Stabryla and Markus, 2012).

However, while examining the issue of innovativeness, it is important to note that for today's entrepreneur the main determinant of business activity effectiveness is economic gain, maintaining profitability and position in relation to local competitors. Expected gain, profitability and competitiveness may exist for different levels of innovativeness (Skowron-Grabowska, 2013). The most ambitious ideas (due to high implementation costs) are often in contradiction with the postulate of keeping business profitable for a few years. Bendyk (2013) notes that the problem lies in the techniques used to measure the condition and profitability of enterprises. Before the Great Crisis of the 1930s, the calculation was simple: it was the amount of money left after subtracting costs from gross receipts that counted. In the period between the 1930s and 1950s, the doctrine changed and the condition of enterprises started to be measured by means of new indicators: ROA (return on assets), ROE (return on capital employed), IRR (internal rate of return) etc. These measurement techniques were developed in the time when access to capital was limited. Today, these measures of corporate efficiency reward decisions that ensure quick returns and the highest possi-

ble profitability of capital in a short period of time. This, in turn, discourages investment in solutions that have to "mature" for years, but are more likely to contribute to ground-breaking innovations. This paradox in the development of innovations requires a multifaceted examination of the areas of innovativeness, both with reference to individual enterprises, their organisations, whole economies and the context of their legal and market environments.

Concluding the theoretical part, in the view of the objective set, it should be noted that the authors' position on innovations and the ways of their creation in enterprises has been justified and indicates systematic changes directly connected with the emergence of new concepts and methods that perceive the process of innovations evolution within production and services rendering in an increasingly multifaceted way. The discussion conducted by the authors allows the formulation of a paradigm indicating that progressive predilections in innovativeness refer both to the process of creating artefacts and changes in enterprise structure. New configurations of innovations require new capabilities from enterprises and systematic implementation of an active policy that stimulates innovations.

Conclusions. The character of innovations in today's world is changing, which is particularly evident in economically advanced countries. The latest surveys conducted by the OECD show that compared with the past today's innovations are created thanks to the participation of a larger number of participants and due to a mixture and fusion of more knowledge fields (Zadura-Lichota, 2013). Moreover, they are created within more diversified mechanisms than earlier and take place within an increasingly diversified environment. Global trends show that in innovative activity more pressure is placed today on the decentralisation of project management, flexibility of organisation, autonomy of staff, stimulation of creativity, mutual trust building, communication and leadership. Human factor (mostly through know-how) is playing a more important role compared to "hardware" factors. The role of eco-innovations and innovations in the public sector is also increasing.

Customers' needs are the basic point of reference for innovative activity of every enterprise. It is these needs that motivate entrepreneurs to introduce their offers to the market and adapt them to market expectations and preferences. Thus, enterprises functioning depends on the ability to respond to changes occurring in the environment. An inherent element of adaptation to changing conditions of functioning is the implementation of innovations, which determine the pace and the directions for development and are at the same time a factor of domestic and international competition. Thanks to innovativeness, general effectiveness of enterprises increases and the synergy between their individual elements takes on a new dimension. It should also be noted that innovations impact customers' tastes and preferences.

Innovations are a necessity. This is especially obvious in electronic, automotive and arms industries (where we observe a continuous race), but it also refers, to a less or greater extent, to every enterprise and every market-oriented organisation.

Today's world provides considerable evidence of the relativity of any progress, confirming the rightness of the Red Queen hypothesis known from ecology. Competition for limited resources forces directional evolutionary changes both in the nature and economy: in order to retain the same place, it is necessary to keep up with changing environment (Dacko and Dacko, 2009). Some innovators are sometimes

even able to stay ahead of this environment. They, according to Mistewicz (2011), describe and create new reality. In contrast, they who cannot improve their activity and implement innovations, usually stay behind and disappear. The laws of the nature and the market show clear similarity in this respect.

Nowadays, being an innovative enterprise is becoming a widespread necessity. The presented here techniques and tools supporting creativity are an important step towards innovations implementation.

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