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Meaning of Sustainable Development in Innovation Management in Enterprises

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Abstract: According to the Europe 2020 Strategy, the European's countries development should be based on three interrelated priorities: smart, sustainable and inclusive growth. All this priorities should be based on the increasing role of knowledge and innovation as the driving forces of future sustainable growth. The aim of this article is not to consider these categories separately, but their combination which allowed to present the possibilities and advantages for enterprises, resulting from the innovative activity directed at the sustainable development, using the sustainable management and sustainable production.

Keywords: sustainable development, innovation management, sustainable management

JEL codes: Q1, Q5, L23, L31, O31

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1. Introduction

Over the recent years, interest has been growing in the concept of enterprise management based on conscious action oriented not only on financial gain, but also on broadly understood social and ecological development. This results from an increasingly popular conviction that taking initiatives as regards sustainable development can contribute to an increase in reliability and - in consequence - to a growth in competitiveness of enterprises, particularly on the international and global market,

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where good business practices are regarded highly. In this context, the importance increases of innovation management directed at creation and implementation of ecological innovations contributing to the sustainable development. Striving for sustainable development of enterprises on one hand and increasing the innovativeness on the other is largely in accordance with the trends of the current EU policy. The effect of the implementation of the "Europe 2020" Strategy is to be an economy based on knowledge and innovation, with low emissions, promoting eco-friendly technologies, managing its resources economically, creating new "green" jobs and at the same time taking care of social cohesion. This is so as the "Europe 2020".

Strategy covers three co-related priorities:

- smart growth: development of economy based on knowledge and innovation,
- sustainable development: support for resource-efficient, more eco-friendly and more competitive economy,
- development favoring social inclusion: support for economy with a high employment level and providing social and territorial cohesion.

Smart growth based on knowledge and innovation requires improvement in the access to the financing of scientific research and innovation in Europe and more effective processing of innovative ideas for new products (Kijek and Kasztelan 2013). What is useful in this respect is the creation of new systems of innovation management in enterprises. Sustainable development, on the other hand, means new challenges and orientation towards more responsible management. In turn, the most important element of "Innovation Union" which is one of seven leading initiatives in the strategy "Europe 2020" is creation of so-called innovative partnerships between the public and private sector. The priority areas where the European Committee intends to encourage to public-private cooperation include climate changes, energetic efficiency, healthy lifestyle, intelligent cities and mobility, rational water consumption, raw materials and farming in line with the principles of the sustainable development. These strategic EU documents indicate important challenges for modern enterprises which should pursue to create and implement innovations more and more focused on implementing ecological innovations correspondent to the sustainable development principles (Doranova et al. 2012). This article attempts to show the problems connected with the sustainable development in the aspect of innovation management and respond the question: in what way does the sustainable development influence the management of innovative activity? Therefore, the aim of this article is not to consider these categories separately,

but their combination in order to present the possibilities and advantages for enterprises, resulting from the innovative activity directed at the sustainable development, using the sustainable management, sustainable production. The authors of this article intend to connect the notion of sustainable development with innovation. Concluding, the most important aim of this article is opportunities and benefits identification resulting for the company from innovation activate, oriented on sustainable development. The research methodology was based on theoretical and quantities methods based on the case study. Analysis based on the case study approach focused on identification the benefits and effects of innovative activity for sustainable development an the example of company intentional chosen.

2. Sustainable development in the context of modern enterprise management

In the subject literature there are many definitions of the notion of sustainable development. The notion of “sustainability” in Polish literature is translated as durability, balance, stability, but most often, the notion of sustainable development is used which appears in many documents. “Sustainable development” means, according to Poskrobko (2007), a sustainable, permanent (stable) and self-supporting development. Whereas, “sustainability” means the need to receive and permanent maintenance of best management effects, both in a quantitative and qualitative sense. Regardless of particular understanding the concept of sustainable development, all views include its basic message, indicating the necessity of considering three orders: environmental, economic and social. At the same time highlighting that by the assumed synergy of economic, environmental and social aspects, one creates conditions for sustainable development to be safe and beneficial for a man, environment and economy as well as not become a progress brake, but its stimulator. Speeding up the activities in the scope of sustainability is particularly important in reference to enterprises due to the fact that they use most of the world non-renewable resources and are in large extent responsible for contaminated environment. It requires certain transformation towards sustainable management on the part of enterprises, which is connected with focusing them not only on economic aims, but also social and ecological aims (Pabian, 2015). In reference to enterprises, sustainable development is often identified with Corporate Social Responsibility. According to Penc (2005), managing modern enterprise should be socially responsible, which means that its actions should be in line with social rationality of economic actions, performed in an ethical way,

without transferring one's own costs on the society and environment. Therefore, enterprises, if they want to secure constant activity, must place different aims, not only economical, marketing, social, but also ecological connected with economical use of resources, decreasing pollutant emission, introduction of "clean" technologies and "ecological" products, removal of waste, use of recycling. Enterprises must go through a serious metamorphosis: walk away from a narrow understanding of their role as a source of multiplication of shareholders benefits in order to serve all stakeholders and achieve with them a sensible consensus. It requires an enterprise to take on a completely new philosophy of management where the community of enterprise interests and employees is the basis of future successes on the market. The reflection of this is moral and ethical conduct both towards employees and the entire community for the benefit of which it operates (Penc, 2005). The need to change the nature of modern organisations leads to modification of the management paradigm towards ecological management (eco-management). Ecologisation of management is performed by a range of activities performed at the level of enterprise leading to the improvement of environmental parameters of organisation functioning and, in consequence, to inclusion of environmental protection postulate in all its fields of functioning (Matejun, 2008). Such activities include: application of environmental management systems, implementation of systems ensuring quality and environmental management, performance of purer production projects, implementation of pro-ecological innovations, i.e. changes in production techniques and technology lessening negative influence of production processes on the environment (Matejun, 2008). Environmental management became common as a way of performance of the concept of sustainable development at the level of enterprises. Environmental management system is defined as a part of a general management system used to develop and implement its environmental policy and manage its environmental aspects (PARP, 2011).

3. The essence of innovation management in the aspect of sustainable development

The concept of sustainable development has larger and larger influence on the behaviour and innovative activities performed by enterprises that result from, e.g. EU strategical documents. Therefore, the necessity to implement effective innovation management systems is visible as well as directing enterprises to implement the principles of sustainable development, i.e. sustainable management and understanding that everyone is a part of the ecosystem that is responsible for it

(Fussler and James, 1996). Reading prof. Alexandro Sosa, Executive Director Global Environment Management Initiative “enterprises can significantly contribute to solving global ecological and social challenges by investing in innovations and better use of renewable sources of energy; transfer of knowledge and technology as well as creating compatible products”(Klosok-Bazan, 2010).

Therefore, innovations are in the centre of the problems connected with performance of the idea of sustainable development and are an important element empowering the pro-ecological economy (PARP, 2011). Matejun (2009) states that ecological innovations at the level of enterprise should be treated as tools supporting the performance of the sustainable development strategy. They play an important role in the process of minimalizing negative influence of the enterprise activity on the surrounding, on the other hand, eco-friendly technologies contribute to the development of entrepreneurship (PARP, 2008). Innovations are also the base for enterprise competitive behaviour, assuming that the main determinant for making strategic and operational decisions is orientation towards eco-development.

According to Woźniak, Trinkka and Bacal, eco-innovations constitute a transformation of traditional economics paradigm towards sustainable development, with maintenance of competitive functioning conditions (Woźniak et al. 2004). Whereas, sustainable innovations are a relatively new notion - originating from the notion of sustainable development, and are defined as new or modified processes, methods, practices, systems and products having a positive impact regarding their environmental, economic and social effects (Kasztelan and Kijek, 2015). According to the authors of this article, sustainable innovations will have an essential impact on development of enterprises in the nearest decades. Not only economics and ecology, but also the social aspect will impact the company’s competitiveness on the market. New trends have also arose, promoting corporate social responsibility, that have already been effectively implemented in large companies, and small and medium enterprises are increasingly frequently willing to follow this path. Samuel A. Di Pizza, CEO of PwC LLP says that “*Eco-efficiency and awareness of social and economic impact of business on the surrounding are key business factors in the 21st century. The 19th century commenced the large scale industrial production, the 20th century transformed it into applied science and thought its control employing a keyboard and computer screen. The 21st century will carry these assets into maturity through science of integration of all types of*

enterprises - production and service-oriented - with the need for natural environment and social entrepreneurship” (Klosok-Bazan, 2010).

4. Management of innovative activity in the aspect of sustainable development - case studies

In order to achieve the presented aim of the study, the research methodology consisting in theory-cognitive studies and qualitative studies based on the case study method was adopted. The company selection was made in the purposeful manner, considering such criteria as:

- company size (one medium-size and one big company);
- technology specification;
- ecological awareness.

4.1 Example of a large enterprise

An example of a company oriented to a great extent on innovative activity and relying on sustainable development is Bosch (Report Bosch, 2015). The astonishing number of over 5 400 patent applications in 2015 allows the company to take the leading position on the most important global markets. An important goal of Bosch is supply of technologies that help solving the existing ecological problems. The company invests 50% of its research and development budget in pro-ecological technologies, thus generating profits at the level of 1/3 of all profits from sale. The company conducts activities aimed at sustainable development, connected with sustainable management, sustainable production, green headquarters. Within the scope of environmental management, Bosch acts with the aim of minimisation of impact on the environment of its own activity as well as continuous improvement of environmental protection. For this purpose, the company implemented the environmental management system according to standard ISO 14001 in all 242 facilities around the world. The reduction targets of the company were decrease by 2020 of CO₂ emission (in relation to value added) by 20 per cent in comparison to year 2007 as well as improvement of power efficiency by 20%. In view of sustainable production, the company tries to use natural resources in a responsible manner, continuously decreasing energy consumption in the company's locations. Bosch also takes care of green headquarters through employment of renewable energy, environmentally-friendly construction and efficient use of natural resources that are to contribute to further reduction of CO₂ emission in Bosh facility locations.

4.2. Examples of SME functioning in Polish conditions - Clean Business Club

Transformation from traditional to more sustainable economics with concurrent maintenance of competitive functioning conditions can be observed also in small and medium enterprises functioning on the Polish market. Initially, the SME companies were very cautious towards this change, perceiving all actions for the benefit of sustainable development as unnecessary cost generation. However, over time it has been proven that this type of activity, despite the unquestionable company image aspect, can bring measurable economic benefits. One of the program promoting this type of approaches is the Clean Business Club Program. The underlying assumption of the Program is the conviction that environmental protection is, first and foremost, an opportunity to improve competitiveness of small and medium enterprises, and the negative impact of the company on the natural environment requires from poor management of resources and entails unnecessary costs and economic losses. This can be counteracted by introduction of new innovative technological solutions, improvements in the production and management processes, implanting the new economic value culture among the employees as well as through development of more aware attitudes of the employees and consumers. The objective of the program support for small and medium enterprises in conducting pro-ecological activities inside the companies - e.g. such that contribute to decrease of costs of production, thus improving competitiveness on the market; providing incentives for the companies to engage in pro-ecological actions outside the company, especially in the closest surrounding to the facility, place of residence of the employees and the most important sale markets as well as creation of opportunities for the companies to engage in long-term projects the objective of which is protection of the environment and local communities in cooperation with the local government, social organizations and other sectors of social and economic life. The idea promoted by the non-governmental organization - Environmental Partnership Foundation, gained support in years 2006-2013 from the Union funds, allowing to diagnose the situation in almost 200 companies from the SME sector. Many of these companies implemented substantial changes in their production process within the scope of innovative activity, and the effects of these changes were measurable both in relation to economic and ecological effects (Chyla et al. 2010). An example of such actions can be the simple solutions applied in multiple tourism industry companies. Hotels and guesthouses associated in the Clean Business Club have significantly reduced water consumption in their facilities through

employment of faucet aerators. For example, a hotel offering 70 beds saved ca. 550 m³ of water annually. For all companies associated in the Clean Business Clubs, these values reached over 50 000 m³ in the monitored year. According to the Program assumptions, the first step to change of the company management towards a more sustainable direction is reliably performed monitoring. The foundation for companies associated in the Clean Business Clubs prepared an innovative Internet tool - "Environment Manager" which, in addition to possible monitoring of utility consumption in the given company, allows for the so-called "benchmarking", i.e. comparison of obtained results with other companies that have a similar business profile. Concurrently, this tool allowed for reliable information gathering in relation to the ecological and economic effects of the enterprise management change. An interesting example of an innovative solution resulting from performance of an ecological audit is a company from the construction trade that used rainfall waters collected from the surfaces of production floor roofs for concrete production. The unquestionable ecological effect obtained as a result of this action allowed this company to gain a measurable economic effect in the form of reduced payments for drainage of rainfall waters to the sewerage system as well as reduced bills for water purchase. An unquestionable example of sustainable innovation the economic effects of which indicate clearly that this method of management can improve enterprise competitiveness. Another example of solutions developed within the framework of activities of the Clean Business Program is innovation/technology proposed to small bakeries. The waste heat from the flue gases discharged to the environment from the chimneys was partially recovered by means of heat exchangers. The recovered heat was used to heat up water intended for social purposes and washing devices in the production process. The ecological effect in the form of reduction of consumption of energy from primary sources, resulting in reduction of carbon dioxide emission, was also characterized by a measurable economic effect. All described examples have also an unquestionable social aspect of development of positive ecological awareness of persons working in these enterprises. Based on development of this awareness, a very interesting social innovation was implemented in one of the companies from the furniture industry that participated in the Clean Business Program, consisting in establishment of the so-called "Family Fund". All revenues of the company connected with functioning of waste management were also allocated to this fund. It is a clear message: "dear employee, sort the wastes, because the earned money return to you". The presented examples are essential since they regard SMEs. None of these companies had the ISO 14 001 certified environmental management system,

but each of them adopted their own management strategy based on the sustainable development strategy. Performance of this strategy would not be possible without implementation of sustainable innovations that have become the driving force of this undertaking.

5. Conclusion

Innovation management in the aspect of sustainable development requires clearly determined objectives that may include:

- increase of the number of implemented technologies that help solving ecological problems and protecting the environment,
- decrease, prevention or elimination of the negative impact of the enterprise on the natural environment through creation of ideas and implementation of ecological sustainable innovations having a positive impact on environmental, economic and social phenomena,
- support for the implemented sustainable development strategy,
- increase of outlays for research and development activity within the scope of ecological innovations that help protecting the environment and saving resources,
- increase of share of profits from sale of ecological innovations, decrease of activity costs and improvement of economic results,
- development and formation of the enterprise's competitive advantage,
- development of entrepreneurship through environmentally-friendly technologies,
- entering new markets or increase of share on the markets of on-going operation,
- improvement of the enterprise's image in the surrounding and improved ecological awareness of the employees.

As the example of presented companies shows, the importance of sustainable development in the process of innovation implementation and management is very important. A substantial role in intensifying the implementation of "sustainable innovation" in company should be played by the policy which influences the shaping of ecological/sustainable awareness in entrepreneurs and which – with use of many instruments – may result in a markedly higher number of innovations in entire enterprise sector. In consequence, notable benefits may be generated not only to environment, but also for the society and economy.

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Znaczenie zrównoważonego rozwoju w zarządzaniu innowacjami w przedsiębiorstwie

Streszczenie

Zgodnie ze strategią Europa 2020, rozwój krajów europejskich powinien opierać się na trzech powiązanych ze sobą priorytetach: inteligentnym, zrównoważonym i sprzyjającym włączeniu społecznemu wzrostowi. Z kolei wszystkie w/w priorytety powinny czerpać z wiedzy i innowacji jako sił napędowych przyszłego wzrostu. W niniejszym artykule podjęto próbę ukazania zagadnień zrównoważonego rozwoju w aspekcie zarządzania innowacjami i odpowiedzi na pytanie: w jaki sposób zrównoważony rozwój wpływa na zarządzanie działalnością innowacyjną? Celem artykułu nie jest rozpatrywanie tych kategorii oddzielnie, ale ich połączenie, co pozwoliło na zaprezentowanie możliwości i korzyści dla przedsiębiorstw wynikające z działalności innowacyjnej ukierunkowanej na zrównoważony rozwój, wykorzystujących zrównoważone zarządzanie, zrównoważoną produkcję.

Słowa kluczowe: zrównoważony rozwój, zarządzanie innowacjami, zarządzanie zrównoważone.