

The innovative activity of Polish enterprises

Działalność innowacyjna polskich przedsiębiorstw

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Abstract: Authors present chosen issues related to the activities of companies and its innovative solutions in the industrial and service sectors. Paper presents results of research data analysis with using data coming from the Central Statistical Office. The object of the research analysis was the number and the volume of financial expenditures of Polish enterprises on innovative activity what was the basis for the conclusion on the development directions of the enterprises innovative activity.

Streszczenie: Autorzy przedstawiają wybrane zagadnienia związane z działalnością przedsiębiorstw i ich innowacyjnych rozwiązań w sektorze przemysłowym i usługowym. Przedstawiono wyniki analizy danych pochodzących z Głównego Urzędu Statystycznego. Przedmiotem analizy w artykule były nakłady finansowe polskich przedsiębiorstw na działalność innowacyjną, co było podstawą do wskazania kierunków rozwoju innowacyjnych działań przedsiębiorstw.

Key words: innovation, innovative enterprise, financial expenditures

Słowa kluczowe: innowacja, przedsiębiorstw innowacyjne, nakłady finansowe

1. Introduction

Rapidly changing business environment forces contemporary enterprises to develop continuous improvement strategies. Elaboration of the activity directions and goals is difficult task that is characterized by uncertainty, as a result of rapid technological progress. First of all, the changing technologically environment forces enterprises to undertake innovative activity. If the innovation is embedded in the company's strategy, employees can effectively carry out their activities.

According to Joseph A. Schumpeter, who first introduced the concept of innovation to economic science in 1911, innovation means creating fundamental or radical changes, including the transformation of a new idea or invention into market product or process [1]. This definition reveals that innovation is something unique, and the changes introduced into innovation having continuous character are linked with imitation. According to Schumpeter, innovation is a new product, a new process of production or a new organization.

The next definition of the innovation was proposed by Michael E. Porter, according to which the innovation is a continuum of changes that are both modifications of existing solutions (products, processes and practices), as well as new solutions built from the foundations that are completely foreign to the company, and industry. Creating innovations, according to the theory of M.E. Porter, gives a competitive advantage today organizations, because innovations make it possible to compete by using completely new technology or new ways of proceeding [2].

The innovation consists of introduction of new solutions in various business areas, for example in the area of technological studies, making and implementing management decisions or organization of the business processes. Innovative activities are all scientific, technical, organizational, which actually lead, or are intended to lead to innovation. Some of these actions themselves are innovative, while others are not new, but are necessary for the innovation implementing. A common feature of an innovation is the fact of its implementing. Innovative activities can be very varied in nature depending on the specifics of the company. Some companies are defined by creating innovative projects such as a new product, others will make continuous improvements in its processes and activities. Both companies can be considered innovative, but innovation can rely on the implementation of a significant change or several smaller ones which together will constitute a significant change in the company [3,4].

The innovative and active company is the company that in the analysed period introduced at least one product innovation, process or implement in this period, at least one innovation project, which has been interrupted, abandoned during the period, or not until the end of this period of time the company innovative in terms of product innovation and the process is the company that in the analysed period introduced to the market at least one product innovation or process. Innovative enterprise in the field of product and process innovations is the company that in the analysed period introduced to the market at least one product innovation or process [3-5]. There are different types of innovations like: product innovation, process innovation, marketing innovation and organizational innovation.

A process innovation is the implementation of new or significantly improved methods of production, distribution and support activity in terms of products and services. Process innovations include new or significantly improved methods for the creation and provision of services. Process innovations also cover new or significantly improved techniques, equipment and software in auxiliary activities, such as procurement, accounting, IT support and maintenance [3,4].

Product innovation is the introduction of a product or service that is new or significantly improved with respect to its characteristics of applications. Product innovations in services are based on the introduction of significant improvements in the way services, adding new features or characteristics to existing services and the introduction of entirely new services [4].

Innovation activities are determined as the scientific, technological, organisational, financial and commercial steps that are intended to lead the implementation of technologically new or improved products and processes. Some may be innovative in their own rights, others are not novel but they are necessary for implementation [3]. There are some highly important goals of innovative and non-innovative enterprises (Fig. 1), that notes the high importance percentage of the increase in turnover for innovative (60.0%) and non-innovative enterprises (48.0%).

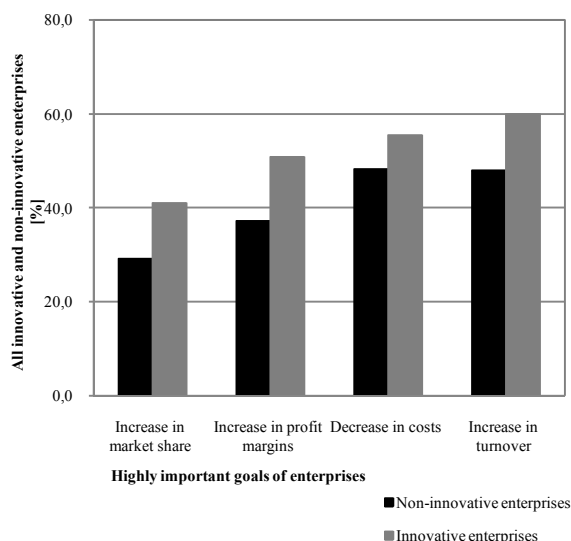


Fig.1. Highly important goals in innovative and non-innovative enterprises in Europe(2010 - 2012) - based on Eurostat (online data code: inn_cis8_type)

It should be stated, that “decrease in costs” is the much more important reason for implementing innovations for non-innovative enterprises (48,2%) than “the increase in turnover” (48.0%).

2. Experimental

The obligation of providing the enterprise statistical data is based on Article 30 Section 3 of the Act on the public statistics passed on 29 June in 1995 (Dz. U. of 2012. pos. 591) and the Council of Ministers on the program of statistical surveys for 2014 (Dz. U. item. 1159) passed on 9 August 2013. Thanks to this law regulation there is ability to track statistics all types of information related to the widely understood business activities by Central Statistical Office in Poland. National economy entities employing more than 9 persons shall report statistical mandatory, most often in studies of full, for the whole of the group of entities that meet the specified criteria in the law. In the case of sample survey there

is no possibility of eliminating individuals at any stage of the study because of the sample size and method of selection of subjects allowing proper evaluation of the results. Consequently, neither the Central Statistical Office, nor any statistical office does not have the possibility to exempt any economic operator from the obligation to report.

To identify companies that invest in innovation and type of the economy sectors are the most innovative, there is a need to review enterprises’ reports sent to Central Statistical Office in Poland. The report on the activity of innovative enterprises is based on the international questionnaire developed by the EU OECD. This questionnaire is divided into 13 departments. Information included in the questionnaire consists of basic information about the company, its business, conducted through the data investments, implementation of new technologies on activities for innovative solutions to the financial data obtained through innovation, as well as what are the investment plans for the future. Only collecting and analysis of the questionnaire allows determining the state of innovation of the company.

3. Research results and discussion

One of the main indicators used for assessment of innovations is connected with financial expenditures on business activities financing. Funds spent by the enterprise for this purpose are varied according to the type of innovation and sources of funding. Expenditures on innovation activities were measured as expenses of the enterprise in a given year spent on the innovation activities carried out in the past three years [6].

Industrial and service enterprises spent largest expenditures on fixed assets, most of which was earmarked for the purchase of machinery and technical equipment, tools, instruments and equipment and R & D activities in 2015. Due to the type of enterprise activity, the largest expenditure on innovative activities in 2015 were noted in industrial companies, what accounted for almost 1/6 of expenditure on innovation activities. The largest investments in innovative activity in service sector in 2015 were noted by enterprise from the sector of information and communication. Table 1 shows the expenditure on innovative activities in large enterprises with a number of employees more than 49 (values are given in million PLN).

Table 1. Expenditures on innovation activities in entities with the number of employees above 49 by innovation activities in 2014 and 2015 - own elaboration based on GUS, Nauka i technika w 2015

Years	Total	B+R activity	Purchase of external knowledge	Capital expenditures on fixed assets	Personnel training related to innovation activities
<i>Industrial enterprises</i>					
2014	21363.5	4415.5	220.4	16688.9	38.7
2015	27443.1	4838.3	242.8	22299.6	62.4
<i>Enterprises of the service sector</i>					
2014	7669.6	2611.1	194.4	4813.8	50.3
2015	8884.3	3803.2	280.6	4660.2	140.3

Expenditures on innovation activity can also be considered because of the funding source. There are distinguished following funding of expenditures on innovative activity of enterprises: own, bank loans, from venture capital funds, received from the state budget, obtained from foreign (non-refundable) [5,7].

The main source of funding for innovative activities in 2015 were own funds of companies. The least frequently used source of financing industrial enterprises and service were funds from venture capital. Table 2 shows outlays on innovative activity by source of funding (values are given in million PLN).

Table 2. Expenditures on innovation activities in entities with the number of employees above 49 by financing source in 2014 and 2015 (own elaboration based on GUS, Nauka i technika w 2015)

Years	Total	Funds - own sources	Funds received from the state budget	Funds obtained from abroad	Bank loans
<i>Industrial enterprises</i>					
2014	22544.3	16268.7	362.5	188.8	1939.4
2015	28920.7	18397.9	526.0	1528.0	3140.6
<i>Enterprises of the service sector</i>					
2014	10790.6	7338.6	185.4	1607.4	1200.7
2015	11855.5	8724.3	152.1	1949.2	738.6

Innovative activity of Polish enterprises in the research period 2013-2015 shows that in industrial enterprises and enterprises of the service sector participated more in the process innovation implementing than in the product innovation implementing. Figure 2 shows the innovative Polish enterprises in 2013-2015 by type of innovation.

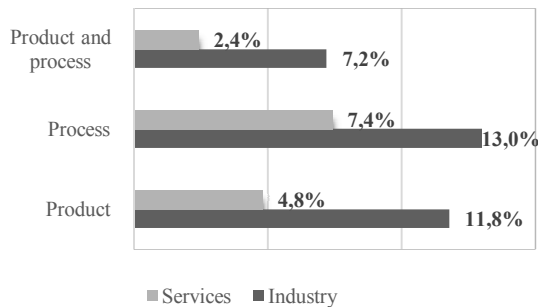


Fig.2. Innovative enterprises in the years 2013-2015 by type of innovation (own elaboration based on GUS, Nauka i technika w 2015)

Industrial enterprises noted the highest percentage of the process (13.0%) and product (11.8%) innovations as the service sector enterprises but the number of process and product innova-

tions was much smaller than in the case of industry in analysed research period.

4. Conclusions

Summing up the issues presented in the paper it should be clearly stated that the expenditure on innovative activities are growing regardless of the sector, and a greater share of own funds, increase or expenditure on training. The largest expenditure on staff training related to innovation activities have been noted by the service sector, which in 2015 exceeded 140 million PLN.

In the period 2013-2015 innovative enterprises indicate that industrial companies and service sector enterprises have introduced more process innovations than product innovations, what was related to seeking of production costs cutting possibilities.

Innovation activities indicators are used to create various strategies and programmes supporting creating innovative activity in Polish enterprises.

One of the main axis of the innovative activity stimulating in Polish enterprises is nowadays supporting the education activity in enterprises (both industrial and service) with regard to enhancing the knowledge development and workers skills. Social potential is perceived here as the driven factor that create positive conditions for the innovative activity in the enterprise.

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