INNOVATION AS A FACTOR OF COMPETITIVENESS OF SMALL AND MEDIUM – SIZED ENTERPRISES

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Abstract: Innovation is a fundamental way of preserving and developing position of an enterprise in a very dynamic, occasionally even unpredictable market. It is understood as introduction of new products to a production process or improvement of existing products. The principal objective of innovative actions undertaken by enterprises is to expand their product ranges, improve their quality, and increase the market share or competitiveness of an enterprise. This paper is intended to evaluate and analyse the effect of innovation on competitive standards of Polish enterprises. Statistical analysis is employed and relevant literature is reviewed.

Keywords: enterprises, innovation, competitiveness

1 Introduction

Innovation increasingly affects strength and competitiveness of enterprises. The ability to innovate is largely the foundation for gaining competitive edge in the market. Innovative businesses develop innovative markets, change structures of existing markets and destroy sources of revenue for earlier innovative businesses. A set of new technologies promotes technological changes, creates new jobs, and generates economic growth [Audretsch, 1995, pp. 441-457, Bartelsman, 2004].

Rates and directions of technology changes are determined by distribution and allocation of resources. In this context, access to capital plays a key role in enabling innovation [Dosi, 1990, pp. 299-319]. High barriers (including financial) to investors may arise from great costs of innovative investments and long periods of time between research and development work and commercialisation of its results. As a possible consequence, innovative firms collapse when faced with numbers of insurmountable obstacles

Regrettably, innovation of Polish enterprises remains relatively low. Persistence of such a situation can have significant adverse effects on innovation of Polish enterprises in future.

The question arises, therefore, of Polish SMEs' innovation and competitiveness. It is the goal of this paper to assess and analyse the impact of innovation on competitiveness of Polish businesses. To this end, literature and results concerning innovation and competitiveness are reviewed and the authors' research is then referred to a survey by the Public Opinion Research Centre and compared to concepts posited by the literature.

2 The concept and nature of innovation

Innovativeness, understood as the ability to create innovative spaces capable of generating and diffusing innovation, plays a major role in operations and development of contemporary enterprises. Innovation is explained as a process of a creative utilisation of knowledge, transformation of knowledge possessed by an organisation or obtained from outside into new products, services or processes [Cavagnoli, 2011, p. 111].

The concept of innovation first entered economic sciences in 1911. A number of definitions are proposed in the literature, the most famous being that by J. Schumpeter, who saw the point of innovation in using production resources in novel ways and thus in freeing them from current applications. Additionally, he regarded innovation as [Schumpeter, 1939, p. 84]:

 Launching of a new commodity or a commodity type that consumers have not had contact with before.

- Introduction of a new production method as yet untested in a given industry sector.
- Opening of a new market where an industry of a given country has not been present, regardless of whether the market has existed or not.
- Finding a new source of raw materials or intermediate products regardless of whether it has existed before or must be created.
- New organisation of an industry, e.g. creation of a monopoly.
- This approach is broad as it comprises technical, technological, marketing and organisational aspects.

Specialist literature offers numerous definitions of innovation, formulated both by theorists of economics and other scientific disciplines and by specialists - practitioners of business and management. It should be noted, however, that innovation remains hard to explicate and involves such notions as creativity, novelty or change [Sieradzka, 2013, p. 2729].

Innovation means a unique tool of entrepreneurship that provides resources with new opportunities for creating goods [Drucker, 2010]. This is improvement and development of existing production, operation and service technologies, introduction of new solutions to organisation and management, improvement and development of infrastructure, especially as it relates to collection, processing and supply of information. These are goods, services or ideas perceived as new, even if existing for long [Kotler, 1999, pp.15-28]. Innovation is a series of events which should ultimately, by implementation of a new solution, bring benefits to an organisation [Tidd, Bessant, 2009, p. 19].

The latest OECD [Oslo Manual] and Eurostat publications define innovation as: implementation of a new or significantly improved product (commodity or service), process, a new marketing or organisation method in business practice, in a workplace and external relations. Benefits from implementation of innovations are captured within an enterprise, which is therefore the centre of the innovation process. Thus, innovation policies must affect an enterprise, its conduct and operations. There is a variety of paths towards innovation. It may become an invention or a new approach to business, or improvement of an enterprise management system by implementing controls such as e.g. internal audit, which contributes to improvement and streamlining of the management system, and consequently to improvement of an enterprise's performance [Lament, 2011, pp. 166-186, Lament, 2013, pp. 247-255].

3 Determinants of innovation

The difference of innovation from routine activities of an enterprise is based on four pillars: innovativeness, complexity, risk and potential conflict [Peter, 2011, p. 47]. Innovative activities are characterised by a broad variety of activities and complicated cause-and-effect relationships.

Innovation dynamics of an enterprise, understood as intensity of innovative activities, are a result of macro-conditions connected to the so-called national innovation system (including priorities and instruments of innovation policies), maturity of an industry, etc., as well as micro-conditions relating to a given enterprise and its market environment (including enterprise size, its legal organisation, business profile, market standing, etc.).

These conditions determine the ultimate ability and tendency to innovate. They also cause that new products must be launched in the market highly cost-effectively and very fast. Innovations in an enterprise cannot be accidental – they should be analysed and evaluated on a systematic basis [Lohmann, 2010, p. 3].

Those enterprises that exhibit optimum feedback between potential and adequate motivations for development changes will

have the best conditions conducive to a rapid pace of innovative activities [Lubimow-Burzyńska, Marczuk, 2007].

Specialist literature proposes two types of classifications of innovation determinants, based on different criteria [Janasz, Kozioł, 2007, p.8]:

- external and internal determinants;
- materialised and non-materialised determinants.

Internal (endogenous) factors operate inside an enterprise and relate to its tangible and intangible resources. Views differ, however, concerning detailed composition of internal determinants of innovativeness [Bozic, Radas, 2009, pp. 438-450].

Table 1. Internal factors of enterprise innovation

Direct factors	Indirect factors
Accumulated human capital resources Accumulated knowledge resources, measured as spending on research and staffing with research personnel Materialised knowledge resources in the form of plant and equipment purchased and buildings Non-materialised knowledge resources in the form of licences and patents acquired External knowledge resources assimilated as positive knowledge externalities from the environment and via cooperation with external organisations Commercial resources Organisational resources	Financial resources of an enterprise Debt of an enterprise Size of an enterprise

Source: the authors' own compilation based on: [A. Wziątek-Kubiak, E. Balcerowicz, 2009, pp. 18-19].

External determinants of innovation, on the other hand, come from national and international environment of an enterprise and its resources. These determinants are therefore defined by an environment in which an enterprise operates, including [Wziątek-Kubiak, Balcerowicz, 2009, p.19]:

- Broadly defined institutional conditions (thus, not only entities but also rules determined by the existing legislation and inherited principles of operation), including policies of states and local authorities.
- Actions of other entities (including foreign suppliers and joint ventures) in the same geographical area and sector as an enterprise.
- Cooperation with market players enterprises, research institutions, state and private, local and central institutions, etc.
- Behaviour of consumers and other market players.
- Innovation determinants are also divided according to the criterion of their materialisation. Non-material determinants are known as knowledge or intellectual resources (Table 2)

Table 2. Determinants of innovation according to the criterion of materialisation

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Materialised factors of innovation	Non-materialised factors of innovation
Machinery and equipment used in	Patents, licence
the production process	 Databases
 Materials and intermediate 	 Research
products	Human capital
 Telecommunications and IT infrastructure 	 Commercial resources reflecting perception of a firm
	 All organisational processes
	integrating units engaged in
	innovative activities and other parts
	of an enterprise

Source: the authors' own compilation based on: [A. Wziątek-Kubiak, E. Balcerowicz, 2009, pp. 20-21].

A range of studies link innovation determinants to the innovation potential of an enterprise, of which the latter actually takes advantage. The potential is seen as a multi-dimensional framework encompassing product, process, market, strategic and behavioural innovation [Wang, Achmed, 2004, pp.303-313]. An interesting approach to cultural aspects of the innovation

potential is offered by C.B. Dobni, who distinguishes the intention to innovate, innovation infrastructure, market orientation and environment for implementing innovations [Dobni, 2008, pp.540-541].

Size of an enterprise appears as a major factor of enterprise innovation, particularly since opposing views of the matter are advanced: of high innovativeness of small businesses and, conversely, great innovativeness of large enterprises. A review of relevant literature on the subject confirms the company size, commonly measured with numbers of staff, is examined also in the context of innovation of especially manufacturing enterprises. H. Forsman and H. Rantanen, who undertake an extensive review of the literature, state the results concerning relationships between the broadly-defined development of innovation and business size do not produce any decisive conclusions. They cite a variety of results that differ from the received opinions, e.g. relate some research that concludes small and large companies are more innovative than medium-sized enterprises [Forsman, H. Rantanen, 2011, p. 28].

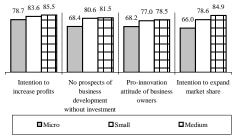
4 Innovation of SMEs

Market factors related to changes of consumer preferences, manufacturing and technological progress, and intensifying competition have considerable influence on levels of enterprise innovation. Regrettably, factors restricting innovative activities of enterprises operate in economies as well. A national fiscal system is the fundamental barrier [Svidroňová, 2014, pp. 344 – 353].

Based on the Report 'Polish SMEs on the way to modernity. A categorisation by size', basic reasons for and obstacles to innovation can be determined. The survey was conducted by the Public Opinion Research Centre on a cross-national sample of 1500 active private enterprises from 26 April to 1 August 2013. Businesses in all 16 regions and employing between 2 and 249 people were queried. Data in this publication suggest:

- The intention to improve profits, lack of a potential for business development without investing in innovation, proinnovative attitudes of owners, and the will to increase market share were the most commonly stated reasons for implementing innovations.
- The intention to improve profits was indicated as the key reason for implementing innovation by 80% SMEs. Medium-sized businesses displayed most choices of this kind (86%) and micro-firms the fewest 79%.
- Medium-sized businesses had most indications for all the remaining reasons for implementing innovations. The lowest share normally corresponded to the smallest firms. This means that far more factors (other than the four listed in the survey) are important for decisions to implement innovations made by this segment.
- The difference between indications by medium-sized and micro businesses was the most dramatic with regard to the intention to increase market share. 85% medium-sized and 66% small entrepreneurs selected this factor as the main reason for innovating. Thus, medium-sized companies were much more interested in improving their market standing than micro-firms, the latter being often minor market players.

Fig. 1. Reasons for implementing innovations



Source: The authors' own compilation based on [Raport, 2013, p. 39]

In 2013, 51% SMEs declared they had introduced innovations to their businesses in 2010-2012. Product innovations were cited most frequently (implemented by 35% firms established before 2013). Process innovations accounted for a minimum share – introduced by merely 22% enterprises.

Fig 2. Types of innovations implemented in 2010-2012



Source: The authors' own compilation based on [Raport, 2013, p.37].

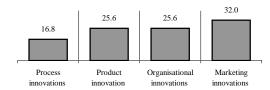
Medium-sized firms were distinct leaders of all innovation types. Nearly 60% introduced product and organisational innovations and almost a half predicted implementation of marketing and process innovations. Micro-enterprises had fewest affirmative indications in each group of innovations. In 2010-2012, as many as 73% of such businesses failed to implement any process innovation, 69% – organisational or marketing innovation, and 61% - product innovations [Raport, 2013, p. 36].

These authors carried out their own survey among a group of enterprises operating in the Mazovian region in October 2014. Respondents were interviewed by means of email surveys. The survey questionnaire (research tool) was distributed among 200 enterprises. In parallel, phone calls were made to invite to take part in the survey and to monitor its progress. In effect, 48 correctly filled questionnaires were returned concerning 2010-2014, which corresponds to feedback of 24.0%.

The survey was conducted among private enterprises, i.e. businesses owned by self-employed individuals and domestic companies.

Marketing innovations can be noted to prevail among those introduced. They averaged 32.0% in 2010-2014. Medium-sized enterprises implemented the most (approx. 53%) innovations of this kind. Entities with up to 9 workers showed the poorest performance, on the other hand. It is clear that fewest businesses taking part in the national survey implemented process innovations and the same is true of results generated by the authors. This can be caused by limited or absent financial resources for introduction of costly changes to methods of manufacturing or organisation.

Fig. 3. Types of innovations implemented in 2010-2014



Source: The authors' own research.

Our research implies spending to purchase machinery and equipment of similar parameters dominated in the entire period, growing by 4.0 percentage points. Enterprises restricted buying machinery for the sake of new technologies due to high prices. On average, expenditure on state-of-the-art machinery was 54.5% lower than the spending to purchase machinery of similar parameters. Investments targeted at environment protection deserve special attention. They exhibit a growth trend, constituting 13.6% of expenditure at the end of October 2014. Research and development spending is not and is not expected to

be the central area of investment by SMEs in the face of the low scales of production and high costs of such research. The authors' results do suggest, however, that Polish entrepreneurs, though still to a limited extent (7.0% on average), understand the need of such investments to improve competitiveness of their businesses.

Table 3. Types of investments by the enterprises surveyed in 2010-2014 (%)

Item	2010	2011	2012	2013	2014
Machinery, equipment of similar parameters	14.2	15.4	20.0	15.8	18.2
State-of-the-art machinery, equipment	7.1	7.8	13.3	8.3	9.1
Licences, patents	-	-	6.7	11.5	9.5
Environment protection	11.4	13.0	13.3	10.5	13.6
Research into new products	7.5	7.7	6.3	9.4	4.5
Improvement of product quality	6.2	-	-	4.9	8.9
Access to the internet	7.1	8.2	13.5	9.6	9.2
Modernisation of office infrastructure	6.9	15.3	13.5	10.1	13.4
Introduction of new products/ change of product packaging	14.2	7.8	7.2	5.2	9.0

Source: The authors' own research.

5 Innovation and competitiveness of polish enterprises

The process of globalisation, growing competition and emergence of knowledge society all contribute to social, economic and technological changes. Innovation facilitates the process of adjustment to these changes.

Innovation is today the key condition of enterprise survival and development (the driving force of development). It is the fundamental means to gaining and maintenance of the competitive edge, a guarantee of a stable market position. It plays the role of a major instrument of competitive rivalry, i.e. aggressive actions involving 'penetration into' a market and defensive actions to protect an existing business from threats posed by current and potential competitors.

The market economy, via its immanent competition mechanism, provides natural stimulations to innovate, since this is by introducing innovation that an enterprise is capable of [Duda, Wolak-Tuzimek, 2014, pp. 213-216]:

- Improving and modernising its manufacturing processes, productivity and quality of labour;
- Better adapting to requirements of its environment and adequately developing competitiveness of its products;
- Liquidating barriers and improving efficiency and effectiveness of its resource allocation;
- Improving work organisation and methods, and conditions of safety at work;
- Replacing living labour with improved organisation and productivity of work.
- Innovation has become a special resource as it enables enterprising actions for effective allocation of material, financial and organisational resources actually and potentially in place and optimum configuration of competitive advantages.

Innovation occupies a special place among the factors conditioning competitiveness of enterprises. It decides not only the rate and directions of economic development but also largely determines forms and structure of global cooperation of enterprises. Thus, it is a factor determining competitiveness of enterprises in the context of globalisation.

The survey conducted by the Public Opinion Research Centre lets one note the diminishing importance of pricing as the factor building the competitive edge (a fall by 36.5 percentage points), as well as a rising significance of product quality (22.5 percentage points) and quality of customer service (5.8 percentage points). These tendencies prove enterprises correctly perceive the market, since buyers are increasingly guided by

quality not prices of products when making their decisions to purchase.

Table 4. Factors constituting competitive advantage of SME in the market

Item	2004	2005	2006	2007	2008	2011
Pricing of products/ services	51.9	57.6	64.3	57.3	52.0	15.4
Quality of products/ services	20.9	18.7	15.2	21.7	26.8	43.4
Quality of customer service/ continuing customer relations	9.5	9.6	5.9	5.6	5.5	15.3
Narrow specialisation, specialist knowledge and skills	5.8	6.2	4.2	4.3	5.2	8.3
Ability to adjust products/ services to customer requirements	5.6	4.7	5.5	2.9	3.8	9.8
Novel, innovative nature of products/ services	1.8	1.0	0.6	0.9	0.2	2.4

Source: The authors' own compilation on the basis of [Monitoring, 2013, p.67]

Analysis of innovation of enterprises in Poland continues to affirm the conclusion of low and even declining innovation standards of these enterprises. In 2008, merely 0.2% of businesses competed by means of innovative nature of their products. Three years later, the ratio rose by 2.2 percentage points to reach the highest level (2.4%) in the entire period under discussion. Our own results appear to point to a dwindling importance of price (by 6.8 percentage points) and a growing role of product and service quality (by 9.2 percentage points). An identical regularity is confirmed by results of the national survey.

Table 5. Sources of enterprises' competitive advantage in 2010-2014 (%)

2011 (70)					
Item	2010	2011	2012	2013	2014
Price of products/ services	33.3	27.3	24.1	25.0	26.5
Quality of products/ services	39.1	45.4	43.7	47.4	48.3
Innovativeness of products	6.7	8.2	5.4	6.2	6.2
Originality of products	4.3	2.6	2.6	2.5	2.6
Management staff	3.7	3.1	3.2	3.0	1.8
Other	12.9	13.4	21.0	15.9	14.6

Source: The authors' own research.

A limited impact of product innovativeness and originality on competitiveness of enterprises can be observed. A similar dependence emerges from the CBOS survey. It should be pointed out, though, that enterprises operating in the Mazovian region competed by means of innovativeness and originality of their products to a greater extent. These indicators equalled 6.5% and 2.9% on average.

This low standard of innovation should be attributed to attitudes and strategic choices of enterprise management. Searching for and raising financial capital continue as the prevailing strategic objectives. Enterprises avoid actions which are capital-consuming, risky, and bring benefits delayed in time. Investments into research and development are certainly one of those. In addition, as the centrally planned economy collapsed, specialist institutes that used to support enterprises in the field of state-of-the-art, e.g. technological knowledge, vanished from the market. This was exacerbated by loosening ties of cooperation with the world of science. Poland's joining the European Union showed that Polish enterprises lack confidence to compete in international and global markets.

5 Conclusions

Issues of enterprise innovation and competitiveness are subjects of numerous discussions, both among scientific and business practitioners. Enterprises implementing innovations are often said to be far more profitable that those which do not spend on innovating. In effect, businesses introducing innovations should

be more competitive in the market. Observations of this kind made these authors compare empirical results with the propositions offered by specialist literature.

The survey conducted by the Public Opinion Research Centre implies Polish SMEs are normally driven to innovate by: economic motivations, that is, the intention to raise their profits or market share; and by pro-innovative attitudes of entrepreneurs and the latter's perception of the dependence between development and innovativeness of their business. This holds true for all the enterprise gropings, both micro, small and medium-sized.

In 2013, 51% SMEs declared they had introduced innovations to their firms in 2010-2012. Product innovations were the most common (35%), with process innovations enjoying minimum popularity with entrepreneurs - implemented by merely 22%. Enterprises active in the Mazovian region also most seldom invested in process innovations (16.8%), with marketing innovations being the most popular (32.0%).

Polish SMEs had pursued low-price strategies, which do not foster innovation, until 2010. The share of enterprises competing by means of quality can be seen to rise only since 2011. The surveys conducted by both the Public Opinion Research Centre and by these authors point to a diminishing role of product pricing and a growing role of quality as the factor laying foundations for an enterprise's competitive edge, which should bolster innovativeness of enterprises.

Regrettably, enterprises operating both in Mazovia and in the rest of Poland competed by means of product innovation and originality or with know-how to limited extents.

Innovativeness of enterprises should enhance their competitiveness. The economic theory suggests a close dependence between those two factors. However, the surveys conducted by both the Public Opinion Research Centre and by these authors demonstrate the role of product innovation and originality in building competitive edge of Mazovian and Polish SMEs is minor. Until recently pricing and then quality of products and services have been the fundamental competitive factors. This may be a reason for a low standard of innovation and thereby of competitiveness of Polish SMEs.

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Primary Paper Section: A

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