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Evaluating innovations in small and medium enterprises in Slovakia

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Abstract

To strengthen innovation activities is one of the main task of small and medium enterprises (SME) nowadays. It is also one of the priorities formulated in the strategy of building knowledge based economy in Slovakia. The aim of the article is to evaluate innovations in SMEs sector in Slovakia. Attention will be given to the main factors determining innovation activities in SMEs in Slovakia and to the innovativeness which is viewed as one of the prerequisites for successful innovation activity in small and medium enterprises. The paper was elaborated as a part of VEGA project 1/0654/11 “Innovative SME as a part of knowledge based economy in the Slovak Republic”.

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1. Introduction

The global business environment is changing very quickly. To the most important changes in the business sector belong trade liberalization and movement of financial capital, information and communication technological processes, changes in international division of labour and international trade, a huge concentration of capital connected with qualitative and quantitative changes in the size as well as in a character of enterprises. Strategic answer to all challenges resulting from changes in global business environment can be only development of economy based on innovations, knowledge and educated people (Mellahi, Frynas & Finlay, 2005).

Innovation is meaningful, dynamic, developing process, which result is positive change oriented on improving of transformation process in enterprises and better satisfying of customer needs (Andriopoulos & Dawson, 2010).

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OECD definition describes an innovation as a restoration and widening of products and markets portfolio, as a new designing, manufacturing and distributing methods, implementation of changes in work organization and labor force skills, etc. Innovation is the introduction to the practice in the enterprise a new or significantly improved solutions for the product (goods or services), process, marketing or organization. The essence of innovation is the implementation of innovations into practice. Implementation of the new product, new marketing methods or new organization means its application in the current functioning of the enterprise.

Present approach to innovations prefers that innovation is a key word for entrepreneur; emphasizes global approach to innovations as a philosophy (way of managing of enterprises), which influences all parts of transformation process in enterprise (marketing, research and development, planning, manufacturing, managing, etc.) (Bessant & Tidd, 2009). The ability to compete in innovations plays very important role as a factor of their competitiveness.

The aim of the article is to give the view on innovation activities in small and medium enterprises (SME) sector in Slovakia. The article is divided into two parts. In the first part of article is analysed and evaluated situation in innovation activities conducted by small and medium enterprises in Slovakia, identified are main barriers to develop innovation activities, formulated are some recommendations how to overcome these barriers. In second part of the article is presented the importance of innovativeness, which is viewed as one of the prerequisites for successful innovation activity in small and medium enterprises. The paper is elaborated as a part of VEGA project 1/0654/11 “Innovative small and medium enterprises as a part of knowledge based economy in the Slovak Republic”.

2. Innovation activities in Slovak small and medium enterprises

Current economy tends to be characterized as a new, global and knowledge-based economy. The new, global economy is the economy of knowledge and ideas, where innovative ideas and technologies fully integrated in services and products became a key to generation of new working positions and higher life standard (Frappaolo, 2006). Only those businesses that are dynamic are able to respond to the market demand swiftly, and are capable of research and development of new products, innovations and technological changes.

The strategic objectives of making innovation one of the main instruments in developing the knowledge economy, ensuring high economic growth of the Slovak Republic and catching up with the most advanced EU economics, are included into the “Innovation Strategy of the Slovak Republic until 2013” and the “Innovation Policy of the Slovak Republic for 2011–2013”.

In spite of all declarations to support research, development and innovation, there is still low level of investments into research and development in Slovakia. According to the European Innovation Scoreboard (EIS) 2010, Slovakia has internationally ranked among countries with the low innovation performance, standing at only 66 % of the EU average. We have ranked as 21st among the EU27 in terms of innovation performance and belong to the group of the so-called moderate innovators. Falling behind has several major causes – among other things, it is due to low public and private expenditure in research and development (Lesáková, 2013). Average expenditure in the EU27 stands at 1.82% of GDP, whereas in Slovakia it is only 0.63% of GDP in 2010, with public funds accounting for 55% of the total expenditure in science and re-search.

Innovation activities in Slovak SME are supported primarily by those business entities, which are motivated by pressure of competition, necessity to develop and implement new technologies, to make production more effective, to penetrate to new markets, or react to changes of business environment (Lesáková, 2012).

There exist no doubts about the benefits of innovations in all businesses. For businesses and the economy, innovation is a prerequisite for obtaining a favorable position in future global economy. This is an issue of particular importance for Slovak SME.

With the development of innovation processes in all types of enterprises, it is evident the growing role of innovations also in small and medium enterprises. Many examples confirm that small and medium enterprises create a larger space for innovation, because they are much more flexible in comparison to large-scale enterprises. In spite of all above mentioned advantages, small and medium enterprises have also some handicaps – many of them don't own research capacities and face many financial problems (Storey, 1997).

Between the size of enterprises and their innovation activities is a high correlation. In large enterprises is the proportion of innovation activities higher according to small ones. In Slovakia is the proportion of innovation activities in large enterprises according to small enterprises twice higher (Table 1). The share of enterprises with

innovation activity in total number of enterprises has declined in the year 2010 in all types of enterprises. There are several reasons for decline. The main reason given by SME is the lack of capital, particularly venture capital, which concerns particularly the business sphere. Although the situation has recently improved, the capital markets in Slovakia continue to be underdeveloped. The persisting problems concerning availability of external capital are indicated also by the fact that SME innovate primarily using their own funds. There are also other barriers in SMEs sector (the barriers will be indicated later on).

Table 1. Share of enterprises with innovation activity in total number of enterprises by their size (in %).

Indicator 1	2004	2006	2008	2010
All enterprises	21.1	22.7	33.6	32.8
Small enterprises	14.9	17.4	29.3	26.7
Medium enterprises	32.7	31.8	46.6	41.3
Large enterprises	57.4	56.6	67.9	64.3

Source. Statistical Yearbook of the SR, 2012

Important indicator giving the view on innovation activities by type of innovation is share of enterprises with innovation activity in total number of enterprises by type of innovations in Slovakia (Table 2).

Table 2. Share of enterprises with innovation activity in total number of enterprises by type of innovation (in %).

Indicator 2	2004	2006	2008	2010
All kind of innovations *	21.1	22.7	33.6	32.8
Technological innovations	21.1	22.7	19.9	25.2
Product innovation only	3.7	5.0	3.8	6.1
Process innovation only	7.1	8.1	6.5	7.4
Product and process innovation	9.2	8.6	8.6	11.1
Ongoing or abandoned innovation activities only	1.1	1.0	1.0	0.5
Non-technological innovations	10.3	15.1	13.7	7.6
Without innovation activity		77.3	66.4	67.2

* Non-technological innovations were not included into innovation activity up to the year 2006

Source. Statistical Yearbook of the SR, 2012

Positive is viewed the growth in number of enterprises implementing the technological innovations (25.2 %) especially in automobile industry and machinery industry. While product innovations enable to reach the competitive advantage through changes in the product/services which an enterprise offers, processes innovations have the tendency to rationalize the production through changes in the ways in which product/services are created and delivered. The share of enterprises with innovation activity on total number of enterprises has increased from the year 2004 up to the year 2010 in service sector from 17.9% up to 35.2% (Table 3). Nevertheless, the share of enterprises with innovation activities could not be taken as sufficient.

Table 3. Share of enterprises with innovation activity on total number of enterprises in industry and services.

Indicator 3	2004	2006	2008	2010
Industry	26.9	26.8	37.0	35.9
Services	17.9	22.0	35.1	35.2

Source. Statistical Yearbook of the SR, 2012

In the year 2011 we have conducted at our faculty research oriented on the state of innovation activities in small and medium enterprises in Slovakia as well as on identification of main barriers to develop innovation activities in SME. Research was conducted on the sample of 857 small and medium enterprises (60% industrial enterprises, 40% service enterprises). Results of the research confirmed, that only 256 SME (29%) implemented some of the innovation activity. From these 256 small and medium enterprises 39% of enterprises have improved technology of production, 14% of SMEs have developed and implement quite new product (mostly from industry production) and 33% of SMEs have innovated their product/service. As the most important contribution from implementation innovation activities SMEs have identified: raise of turnover (69%), lower costs of production (34%) and raise of exports (11%).

As the main barriers to develop innovation activities by small and medium enterprises were identified:

1. Small and medium enterprises in Slovakia give as the main barrier to develop innovation activities *lack of financial sources*. The results of above mentioned survey confirm that most of innovation activities were financed by their own financial sources. The lack of both public and private financial sources is the main weakness to fund innovation. Starting this year is the link between SME and the R&D system assisted by new innovative co-financing schemes oriented on specific problems of the SME's, which were up till present not fully focused on commercial use of science, while this should be the main criterion in the allocation of funds. The new limited company Slovak Guarantee and Development Fund together with the European Investment Fund runs a holding fund by means of which financial engineering instruments started to be implemented in Slovakia under the JEREMIE initiative. It is estimated that financial support in the form of bank guarantees, in-direct loans and venture capital may be provided in this year up to some 400 entities. These entities should primarily include small innovative companies with strong growth prospects which have problems to fund their expansion and innovation activities.
2. As a factor of insufficient innovativeness in small and medium enterprises was identified *law awareness* about the impact of innovations on their economy and competitiveness. In other words, most of the companies in Slovakia do not realize or underestimate the importance of innovations in today's global economy. This fact involves fear that small and medium enterprises don't perceive innovations as a competitive advantage. In other words: it's necessary to develop the innovation awareness in Slovak small and medium enterprises. Special attention has to be given to human resources for innovation. Fulfillment of this task requires professionally trained, educated and creative human resources. A priority area of the innovation strategy therefore must be the education and gaining experience and knowledge concerning applied research and new innovation methods that can be implemented in the business sphere. It is also important to develop effective and efficient communication on the topic of innovations.
3. Small and medium enterprises have identified as one of the barriers for innovation the *lack of innovation infrastructure*. Only a small part of small and medium enterprises possesses sufficient capacities as well as know-how for realization of all activities of innovative process, therefore it is needed to fill this gap with services of specialized consulting organizations. The aim is to create effective system of specialized consulting services for support of innovations. It will be also helpful to complete and extend existing infrastructure for support of innovations to the same level as those of leading European countries. It contains mainly technological incubators, technological and innovation centers and scientific parks. And important is also support of existing network of supporting organizations such as RPIC (Regional Business Innovation Centre), BIC (Business Innovation Centre), CPK (Centre of first contact) and others.
4. The positive examples from EU countries confirm, that the participation of small and medium enterprises in *networks and clusters, support of partnership's* building is the way, how to involve small and medium enterprises into innovation activities. Innovation process of a higher level calls for much higher improvement of interaction

between small and medium enterprises, research institutions and universities and for creation of various effective networks and partnerships. Some positive examples in Slovakia (from commerce, services, automobile industry, machinery industry, wood industry) confirm the advantages of this progressive form of organization.

It can be stated, that a systematic approach to innovation activities in small and medium enterprises calls for (Jáč, Rydvalová, & Žižka, 2005):

- generating ideas and permanent accumulation of all impulses which could lead to innovations,
- creative human resources,
- ability to judge the reality of innovation ideas,
- effective team work,
- ability to manage innovation projects,
- cooperation with external institutions (universities, research institutes, consulting agencies),
- ability to judge the risk,
- ability to possess the right courage and spirit,
- motivating all workers,
- implementing systematic education.

In today's entrepreneurial practice innovations must be natural part of any entrepreneurship. Permanent and regular innovation is becoming a competitive necessity; to be successful in the future requires interrupting conventions. There is a time of changes and the only way how enterprise can be successful is to accept these changes, adapt to them and utilize them.

3. Innovativeness in activities of small and medium enterprises

When managers talk about the need of changes in an enterprise, they usually mean encouraging the innovativeness of the employees. Innovativeness means creativity, the ability to come up with new thoughts, ideas and a unique way of combining or connecting. Small and medium enterprise that encourages innovativeness creates preconditions for new procedures and solutions. Accordingly, we understand the term innovative management as the management whose methods and techniques of managing are based on accentuating innovativeness, i.e. encouraging new, creative solutions. This requires some creativity of human potential in SME, implementations of new, progressive methods and techniques of personnel development, implementation of knowledge management, as well as pro-innovative firm's behaviour. Every improved, changed or new solution is a result of an innovative and creative approach (Cameron & Geen, 2006).

Being creative means seeing ideas or objects in a different context, either by recognizing their inherent potential to be used in a different way, or by putting previously unconnected ideas together to create something completely new.

Employees' interest to develop innovation activities requires a certain level of pro-innovative culture in a firm, where employees are involved into the process of business policy formulating and are challenged to submit new innovative ideas.

Managements in Slovak small and medium enterprises are looking for the best management practices in Europe and worldwide. Our managers (mainly of middle and older age) are a bit disadvantaged in comparison with their colleagues abroad, as they must train alongside their working career and have little time for development of their capabilities and characteristics. In a relatively short time they must master the contents of a lifelong preparation of Westerns managers.

The system "Innovativeness action", which was developed by Consultations and Training Centre of Creativity and Innovation in Canada, serves as a support of organizations innovativeness by applying creative potential of human resources (Adair, 2009). It aims to create new products, new production procedures, new markets and new strategies in order not to stay ahead of competition. The system uses creative process to transform the knowledge of organization's employees to the knowledge with added value. It consists of five steps:

1. *The structure and program of voluntary participation with an aim to develop, support and assess initiative and creativity.*

It is evident, that developing the innovative environment in SME calls for the distinctive quality of leadership, coupled with management knowledge and abilities. Innovative organizations do not happen by chance. They are the end products of good leadership and management. The essence lies in getting the balance right between freedom and order, between the anatomy of the parts and the integrity of the world.

The innovative organization is the reverse image of bureaucracy: flat rather than pyramidal; decentralized decision making and developed responsibility; informal instead of formal; emphasis on lateral as well as vertical interaction; rules kept to a minimum; positive about appropriate and properly calculated risks (Adair, 2009).

One way how to harvest new ideas is to introduce what could be called innovative systems, notably Suggestion Schemes and Quality Circles, which are designed to encourage and harvest ideas at work.

A leadership team that is eager for innovation is much more likely to enjoy a successful and profitable Suggestion Scheme. The Suggestion Scheme should be as simple as possible. The more complicated and bureaucratic it becomes, the less effective it will be. Suggestion scheme is the innovative system that is highly individualistic. By contrast, Quality Circles do employ team creativity. For a Quality Circle is a group of 4 to 12 people coming from the same work area, performing similar work, who voluntarily meet on a regular basis to identify, investigate, analyze and solve their own work-related problems. The Circle presents solutions to management and is usually involved in implementing and later monitoring them. Each Circle has a team leader. Within an organization the groups are supported and coordinated by a facilitator. Quality Circles have flourished best in Japan (the Japanese are usually much more creative in groups than as individuals).

2. *Develop organizational culture and positive environment for creativity development in the organization.*

Personal qualities, the attitudes and skills of leaders in organizations stand out as a group of vitally important factors in innovation. Be they supervisors or first-line managers, middle managers or executive directors, the leaders of an enterprise can do a great deal to encourage creativity.

The top leadership team needs to show visibly that they are committed to the strategy of innovations. Their weight and influence is necessary to overcome the barriers and resistance to useful change which innovators often encounter. The top management team should seek ways of making their commitment to positive and useful change visible to all concerned.

Building innovative organization is a long-term perspective. Flexibility is the key quality to the truly innovative organization. The flexible person, team or organization is capable of responding or confirming to changing or new situation. That places a high premium on communication. In organizational terms it means to create an entrepreneurial and matrix-type management structure while preserving the efficient monitoring system.

It is virtually impossible to innovate without accepting an element of risk.

Management commitment, a long-term perspective, responsiveness to change and acceptance of risk are all contributors to the right culture or climate in which new ideas can arise and significant changes implemented.

Innovative organizations encourage participation in decision making, problem solving and creative thinking. They have policies or guidelines rather than rules, keeping the latter to the maximum. They have good communications, more by word of mouth than by memo or letter.

Team creativity cannot be organized, but there are structures how to encourage it. The ethos of a group or organization is obviously important. The right climate will encourage people to express ideas, however half-formed. Members are able to discipline themselves in order to suspend judgment. They listen for ideas. They build and improve on one another's contributions. In other words, the conversation in that organization is positive, confident but realistic, and essentially constructive. Criticism is necessary too, because it is a vital ingredient in effective thinking (Newell, Robertson, & Scarbrogh, 2009).

3. *Develop a diagnostic tool that would enable the assessment of the performance in creativity and innovation.*

It means that the special system how to assess the performance in creativity and innovation is implemented.

Without systems and proper controls sensibly applied, there can be no organization worthy of name. It requires leadership and management to achieve productive order without sacrificing freedom and creativity. Developing the diagnostic tool to assess the performance in creativity it should be taken into accounts that:

- Creative people tend to be more open and flexible than their less creative neighbors. They bring a freshness of mind to problems. They have usually exhibited the courage to be different and to think for themselves. They are comparatively more self-motivated and often addicted to their work.
- Creative people stand in special need of encouragement and appreciation. The recognition of the value or worth of their contribution is especially important to them, particularly if it comes from those whose opinions they respect.
- A creative person tends to be most effective if allowed to choose the area of work, and the problems or opportunities within that area, which arouses deep interest.
- Creative people need conversation with colleagues in order to think, not for social intercourse. Organizational structure should facilitate these formal and informal interactions.
- Creative people respond well to an organization which encourages them to take calculated risks.

The above conditions become motivational in conjunction with the inner interests and drivers of creative individuals. The quality of an innovative organization depends ultimately and largely upon the quality of the employed people. Creative leadership means the kind of leadership that encourages, stimulates and guides the process of innovation from beginning to end. The challenge of innovation is largely the challenge of leading creative people (Adair, 2009).

4. Think of, develop, implement and assess a training program focused on development of creative potential of individuals.

To operate an innovative organization with a culture of team creativity does presuppose a trained and educated workforce. Apart from technical training, everyone today needs training in the skills and techniques of effective thinking: analyzing, imaging (using the brainstorming technique), valuing, and how the mind works – especially the positive part played by the unconscious mind in restructuring problems and providing solutions (Lesáková, 2011).

A broader education is also to be encouraged, for an innovative organization is by definition also a learning organization.

5. Introduce reward system (financial or other) designated for employees that contribute significantly to the efforts in creativity development in the organization.

There are various more or less important but still significant factors which matter to the creative individual, such as its tolerance of a degree of unconformity, the opportunity to work alone as opposed to always being a member of a group and the level of financial reward.

There are many examples how the right implemented reward system can support the employee's effort in creativity development in the organization.

It can be stated, that the central aspect of innovative management is a human being as a unique personality with his/her own development, with a need to learn and pass on the knowledge, a man producing values, who is creative, able to understand the necessity of change and is willing to adapt to it. Sensible managers support innovative ideas that can form a base and space for new opportunities. It is obvious that an effort to innovate (in the broadest sense of word) should be inherent in every small and medium enterprise.

4. Conclusions

Slovak Republic as a small country has to build their own prosperity and competitiveness especially through the

ability to acquire and to implement new knowledge into the new products, processes, technologies and services.

Small and medium enterprises are forced to make innovations, because they are under permanent pressure of competitors at the market. From this point of view the ability to compete in innovations plays very important role as a factor of their competitiveness.

Today more than ever, economic growth and progress requires the promotion of innovation and the development of proper tools to that end. Support must target the areas of efficient system for innovation development, high-quality human resources and efficient tools for innovation. All these areas represent the main priorities of the innovation policy of the Slovak Republic for 2011-2013.

The contemporaneous financial and economic crisis has impact on all areas of business activities and results in problems with free accessible financial sources which are needed to finance investments, especially innovations. Despite the crisis there is just the time to support innovativeness, education and to use all accessible financial sources on innovation activities in order to raise their competitiveness and thereafter also competitiveness of the whole Slovak economy.

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