



PROPOSAL OF THE EVALUATION SYSTEM OF PREPAREDNESS OF BUSINESSES FOR IMPLEMENTATION OF AN INNOVATION STRATEGY

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Abstract. Development and implementation of innovation strategy requires increased attention of the businesses. Rather than the business acceding to its implementation needs to know the current status of work in innovation and the key elements that will be crucial in this process. The aim of this paper is based on the analysis of literary sources and carried out research on the proposal of the evaluation system of preparedness of businesses for implementation of an innovation strategy. The proposal describes different levels of preparedness, the basic evaluation methodology and evaluation procedure. The paper brings the main results of the authors who conducted research on a sample of 462 respondents to show the current situation in the Slovak businesses in the use of innovation strategy. A survey used the following methods: comparative method, qualitative evaluation, and method of structured and semi-structured interviews, observation methods, method of document analysis (a method of content analysis) and the questionnaire method.

Keywords: innovation, innovation strategy, evaluation system, innovative management, innovation potential, business, research.

JEL Classification: O31, O32.

ĮMONIŲ PASIRENGIMO ĮGYVENDINTI INOVACIJŲ STRATEGIJĄ VERTINIMO SISTEMA

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Santrauka. Inovacijų strategijos plėtojimas ir įgyvendinimas reikalauja išskirtinio įmonių vadovų dėmesio. Prieš priimant sprendimą įgyvendinti tokią strategiją, racionalu žinoti esamos veiklos būklę inovacijų srityje ir pagrindinius elementus, sukuriamus tokiame procese. Straipsnio tikslas – remiantis literatūros šaltinių analize ir atliktu tyrimu, pateikti sistemą, padedančią įvertinti įmonių pasirengimą įgyvendinti inovacijų strategiją. Siūlomi įvairūs pasirengimo lygiai, vertinimo metodika ir vertinimo tvarka. Straipsnyje pateikti esminiai 462 respondentų imties tyrimo rezultatai, siekiant atskleisti esamą Slovakijos įmonių situaciją įgyvendinant inovacijų strategiją. Tyrimo metodai: lyginamoji analizė, kokybinis vertinimas, struktūrizuotas ir iš dalies struktūrizuotas interviu, stebėjimas, dokumentų analizė (turinio analizė), klausimyno metodas.

Reikšminiai žodžiai: inovacija, inovacijų strategija, vertinimo sistema, inovatyvus valdymas, inovacijų potencialas, verslas, tyrimas.

1. Introduction

In the current period marked by the economic crisis impacts, the innovations play an important role. Successful can only be those businesses that invest their funds into innovation and research. It is necessary to manage innovation activities in the business. The innovative strategy is the basic tool that determines the innovation direction of the business. Innovation strategy is based on business strategy and strategic goals (West, Farr 1990).

In order to be successful in implementing the innovation strategy and realize it in the business, there is a need to recognize the achievements in the areas affecting the innovation strategy. Every business is located at a different level of preparedness in implementing innovative strategies in the business. It is therefore necessary to identify the current level of preparedness to detect weaknesses and make recommendations for improvement. It is necessary to have created an appropriate methodology for assessing the readiness of the business to implement innovation strategies.

Innovation strategy is a management concept, consisting of many internal and external activities that enhance the innovative potential of the business. It is necessary to stress the importance and role of actors affecting the formation of an innovation strategy. These are the business employees, managers, as well as customers.

2. Objective and methodology

The main aim of the paper is to acquire new knowledge in the field of innovation management focusing on the area of innovation strategies and highlight the possibility of creating an evaluation of preparedness of the business for implementation of innovation strategy. Proposal of the levels of preparedness of business for implementation of innovative strategies in the business can significantly help to identify weaknesses of a business in this area and identify space for further improvement. The proposed system is intended to serve as a control tool during the implementation of innovation strategy in the business. The aim is to give business managers a tool for self-valuation. The management gets the evaluation of the levels of business readiness for the implementation of innovation strategy. Solution of the examined issues in the paper requires the use of several methods depending on the character of each part of the solution.

For the acquisition and collection of information the following methods were used: method of analysis of documents (when analyzing current and historical data relevant to the issue), questionnaire method and the method of semi-structured interviews (data collection in empirical research), method of observation (visiting businesses).

For the information processing mainly two methods were used: method of quantitative assessment (formation

of statistical averages, percentages, application of statistical tests and other statistical methods) and the comparative method (when comparing data obtained from the relevant empirical research and the collation of data from the analysis of secondary sources).

To solve the problem, methods of induction, deduction, synthesis (in developing evaluation system of preparedness of business for the application of innovation and strategy and formulation of different levels of readiness), abstraction and modelling were used.

3. The current state of dealing with the issue

Among the professional public there is currently a debate about definition of innovation strategy and allocation of areas of their operation. Kováč (2007) sees innovation strategy as determining long-term fundamental business goals and determines the activities and resources for achieving these goals. Orientation of goals is focused on timely response to changes in signalling of need of innovations. The above-mentioned variability of innovation strategy is highlighted by Zaušková (2006). Innovation strategy is often called in the scientific literature such as e.g. scientific and technical, development-innovation or research and development strategy. Zaušková (2006) gives some attention to the fact that the scope of the adjective (in the context of innovation strategy) may be wider, respectively narrower.

There are a few definitions of an innovation strategy in the literature, but each of these cover only a section of the overall role of an innovation strategy.

Wide variability of the notion of innovation strategy can be documented by the following claims. Katz, Du Preez and Schutte (2010) understood an innovation strategy as:

- an incremental, functional, predetermined plan governing the allocation of resource to different types of innovations in order to achieve a company's overall corporate strategic objectives and,
- a decision framework guiding a company about when and how it should selectively abandon the past and/or change its corporate strategy and objectives in order to focus on the business of the future.

According to Gilbert (1994) innovation strategy determines to what degree and in what way a firm attempts to use innovation to execute its business strategy and improve its performance. Also, Tidd *et al.* (2007) are inclined to believe and claim that innovation strategy helps to understand what, why and when to carry out innovation activities. Kováč (2007) takes a different view. According to him, we need to look at an innovation strategy as at the introduction products of new generations or technologies developed at intervals, which interrupt the period of relative stability. He also highlights, that innovations bring a jump in productiv-

ity and market share. Strecker (2009) perceives innovation strategy as the sum of strategic choices a firm makes regarding its innovation activity. He reminds, that innovation goals (ends) are not included – only means. Innovation strategy is considered as a firm's wide cross-functional meta-strategy. Dodgson, Gann and Salter (2008) point out the importance of innovation in meeting the business objectives, and gain competitive advantage when they state that the innovation strategy:

- helps firms decide, in a cumulative and sustainable manner, about the type of innovation that best match corporate objectives,
- guides decisions on how resources are to be used to meet a firm's objectives for innovation and thereby deliver value and build competitive advantage.

Based on a thorough analysis of domestic and foreign literature, we can proceed to the following definitions of innovation strategy:

“Innovation strategy is innovative direction of business approach to the choice of objectives, methods and ways to fully utilize and develop the innovative potential of the business. This is the direction given of its boundary, which determines the potential of innovative strategies” (Lendel, Varmus 2011).

Based on the analysis of domestic and foreign literature, we can also conclude that the innovation strategy is significantly affected by the five basic (key) elements. It can be written in the form of function with five variables that affect the implementation and actual realization of innovation strategy:

$$I_S = f(I_M, I_{PS}, L_T, P_C, O_S),$$

where

I_S – Innovation strategy;

I_M – Innovation management;

I_{PS} – Innovative potential of strategy;

L_T – Lateral thinking;

P_C – Pro-innovation climate;

O_S – Organizational structure.

Innovation strategy given five key elements can be understood as a comprehensive strategy based on the initiative and innovative management, relying on its innovative potential, using as a main tool the lateral thinking and acting in a pro-innovation climate, supported by appropriate organizational structure.

The focus of interest of the innovation strategy is innovation and effective work with them. The output of the innovation strategy is created value, which makes the company more competitive, it opens up new possibilities for the implementation (of the market, processes, procedures, work, etc.). It mainly consists of knowledge (more in Frappaolo 2006).

The first important factor influencing the innovation strategy is the *innovative management*. Its mission is to create a working environment that encourages innovative

atmosphere. This means, above all, confidence in the management of innovation, ensuring effective communication and leadership to teamwork.

This element is understood as systems management support for innovation: innovative practices, methods and resources management, management styles and initiatives leading to improvement and greater use of innovation in the enterprise. Ranks are also expert knowledge and systems that are designed to ensure effective work with knowledge and innovation-related data. This requires the management to invest in the information systems for ensuring the free flow of information in the enterprise. It will be able to present needed ideas on the unusual places and provoke the management to combine the fragments of information (Zaušková 2006: 33). Important and irreplaceable role in the implementation process and subsequent realization of innovative strategies is allocated to managers. It is them who determine the business goals and create enterprise policies, from which innovation activities in the company are derived. Management through effective and innovative strategy directly affects the management of innovation and innovative business activities (Hittmár 2006).

The second element identified as the *innovative potential of the strategy* represents a degree of innovation strategy, which would be attained in the optimal utilization of all sources of innovation strategy. The level of innovation potential strategy depends on the level and quality of the components of the innovative resources of the strategy.

As *Innovation sources of strategy*, we understand innovative opportunities, skills, knowledge, experience, invention and innovation, which the firm has available, or is able to obtain in time.

The third important element of innovation strategy is *lateral thinking*. The innovation strategy must be supported by appropriate lateral thinking, which enables them to use innovative potential of the company in innovation area and its innovation activities. Lateral thinking is looking for new ways of looking at the problem rather than to proceed according to the selected logical steps (Sloane 2003: 7). This is a set of approaches and techniques designed to find radical new approaches to solving the problem (Bono 1993). Lateral thinking is based on creative thinking, which is characterized by the use of appropriate approaches to address a variety of techniques for addressing strategic tasks (Zaušková 2006: 90).

Lateral thinking offers a wide range of non-traditional practices, methods and techniques. Its main feature is that the detection of a single view of the case focuses on the next. It is about to generate alternative solutions and generate ideas. Another feature is the way of procedures. Unusual solution procedure is based on the fact that lateral thinking in certain phases makes a jump as opposed to vertical thinking, which proceeds logically from one point to the next point (Bono 1998).

The key elements of the innovation strategy also include pro-innovation climate (environment), which significantly affects the implementation and realization of innovation strategy. Pro-innovation climate is characterized by change, learning, flexibility, creativity and development. It significantly influences the creating of innovative strategies and its implementation. On the other hand, it should be noted that innovation strategy affects the content of corporate culture (Šimková 2006).

The last identified key element is the organizational structure. Application of the innovation strategy, which is a manifestation of implementation of innovation and it is usually linked to changes in organizational structures. Innovation processes require new demands for changes in existing structures. Bartok and Ješka (2006) indicate the following typical structures:

- A new department for new product.
- A new business division.
- An independent business unit.
- Concrete cooperation.
- Innovation is provided by sister company.

4. Proposal of levels of preparedness of business for implementation of the innovation strategy

Tidd *et al.* (2007) and Lesáková (2010) believe that, based on research in organizations with existing systems support / development of innovation it is possible to identify certain stages on the path to building a successful innovative organization. Tidd *et al.* (2007) argue that each of these stages takes time and there is no guarantee that the organization gets to the next level (Fig. 1).

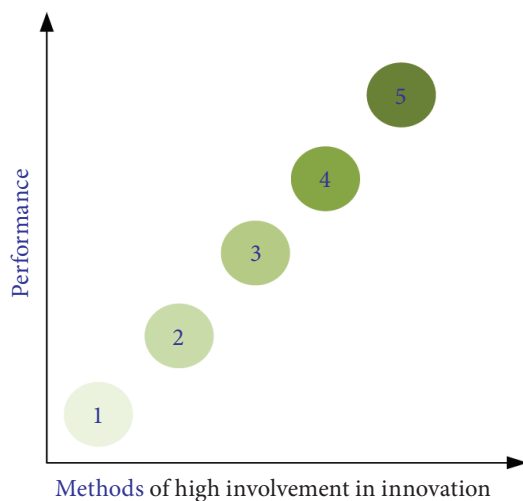


Fig. 1. Five levels of building an innovative model with high involvement

Source: Tidd *et al.* (2007)

Table 1 shows the typical characteristics of the different levels of involvement of business in innovation that is provided by Tidd *et al.* (2007). He distinguishes five basic levels from the unconscious involvement of business in innovation to the highest level of full, high involvement in innovation. In this case he said about learning organizations.

Every business is located at a different level of preparedness in implementing innovative strategies in business. When creating different levels of preparedness of business, we started from the breakdown according to Tidd *et al.* (2007). However, other data sources were scientific works of foreign authors working in the field of innovation management, knowledge management and learning organizations.

Also, the basis for creating different levels were results obtained in our own research to diagnose the level of application of innovation strategies in businesses operating in Slovakia, interviews with their senior managers, as well as discussions with experts at universities and colleges in Slovakia and Czech Republic aimed at the field of innovations.

On the basis of carried out research we propose five-speed breakdown levels of preparedness of enterprise to implementation and realization of innovative strategies:

- Chaotic level.
- Insufficient level.
- Acceptable level.
- High level.
- Excellent level.

Chaotic level of preparedness is responsible for the company which has not a primary interest in working with innovation and generate innovative activities. Management has no specific idea about the work of innovation in the enterprise. An enterprise does not register inventions and innovative opportunities. The company follows the usual routes and doesn't develop new initiatives. Often it does not work through communication in the enterprise and management staff does not know the vision of the future of the company. This level also features an unsatisfactory organizational structure.

The insufficient level of preparedness is responsible for the company, which can be seen beginning the efforts to work with innovation. The management has got a specific idea, but that is not included in long-term business plans. Invention and innovation opportunities are already registered, but without a consistent approach. Employees aim to meet the specified tasks. This level is characterized by an organizational structure with a lack of information flow security.

The acceptable level of preparedness is responsible for the company that meets the minimum level for the implementation of innovation strategy. The management of innovation

Table 1. Stages of development of high involvement in innovation

Stage of development (level)	Typical characteristics
Unawares involvement	Occasional problem solving Lack of effort or formal structures Occasional afflux of activities of intermittently idle The dominant is the model of problem-solving of specialist Short-term benefits No strategic impact
Structured involvement	Formal attempts to create and sustain high-involvement Use a formal process for problem solving The use of participatory Training in the basic instruments for involvement Structured processing system suggestion Reward system Often a parallel system to normal operations
Involvement oriented to goals	All from the level 2 + formal implementation of strategic goals Monitoring and measurement of generated innovation towards these goals Linear control system
Proactive involvement	All from the level 3 + responsibility for the mechanism, timing, etc. are transferred to the realization unit Internally managed connection (not externally controlled) The high level of experimentation
Full high involvement in innovation - Learning organization	High involvement in innovation is the predominant way of working Automatic collection and sharing of knowledge Each is actively involved in the innovation process Incremental and radical innovations

Source: Tidd et al. (2007)

involves the long-term plans and committing to the necessary resources for their search. New innovative ideas are recorded in the company. Employees try to find a solution otherwise. In organizational structure there are still problems in the sphere of secure corporate communication.

The high level of preparedness is responsible for the company, which is on track to become the top innovator. Management supports the work of innovation and determines the future direction of innovation. The company will keep reliable records on the state of inventions, innovative opportunities and innovation. Employees make full use of their imagination and creativity (Blašková 2010). Within the organizational structure the company works as a secure flow of information, as well as effective corporate communication.

Excellent level preparedness is responsible for the company which can be moved to a group of top innovators and in some key elements of an innovation strategy achieves the best values. Innovation management fully supports the work of innovation and is actively engaged in the process of employees. In the enterprise there is a sophisticated system of work with innovations, including their records. Lateral thinking is most often applied to solve the problems. Pro-innovation corporate culture and organizational structure create a favourable environment for further progress in the field of business innovation.

5. Proposal of the evaluation system of preparedness of businesses for implementation of an innovation strategy

The current state of the key elements of an innovation strategy may lead to the conclusion that to reduce the risk of failure of its implementation it is necessary to first change the status of some key elements and then proceed to implement innovative strategies in the enterprise.

This is a proposal of point evaluation system of preparedness of the business for implementation of an innovation strategy. Implementation success and implementation of innovation strategy is largely determined by several factors, which we describe in greater detail (innovation management, innovative potential of strategy, lateral thinking, pro-innovation climate, organizational structure). These key elements of innovation strategy are reflected in five major areas:

- The area of the state of implementation of innovative methods, sources, forms and management tools.
- Field work with invention, innovation opportunities, innovation and knowledge.
- Field work with traditional methods, procedures and techniques of thought.
- The area of the state of environment conducive to innovation.

– The area of the state's organizational structure.

Each area can be expressed in *matrix*. The matrix describes the status of the area of the key elements, it expresses the score of each status and provides a listing of the main risks arising from the status of the area. The scores assigned to each status are used to calculate the level of preparedness to the implementation of innovative strategies in the business, resulting from a described area.

Matrix of the state of implementation of innovative methods, sources, forms and management tools

This matrix (Table 2) follows the existence and use of innovative methods, sources, forms and management tools in the enterprise. These are basic areas of innovation management. The existence of the use of innovative forms, tools, resources and management techniques greatly affect the successful implementation of innovation strategy. By contrast the low utilization rate of innovation management, or even lack of some of its tools and methods that greatly affect the course of implementation of innovation strategy in the enterprise. Innovation strategy will be based on long-term vision and objectives are not supported.

Matrix of field work with invention, innovation opportunities, innovation and knowledge

This matrix (Table 3) monitors the company's ability to work with invention, innovation opportunities, innovation, know-

ledge and information on a centralized register. Degree of centralization affects the success of the implementation of innovative strategies within the company. If there are inventions, innovation opportunities, innovations and knowledge of central registration, the risk of failure of the implementation of innovation strategy is very low.

Matrix of field work with traditional methods, procedures and techniques of thought

This matrix (Table 4) deals with the ability to solve business problems in non-traditional innovation methods, procedures and techniques of thought. It is the application of lateral thinking. If there is more to generate alternatives and review, the risk of failure of the implementation of innovation strategy is very low.

Matrix of the state of the environment of innovation

This matrix (Table 5) looks at and evaluates the level of a supportive environment for innovation. This environment is composed mainly of corporate culture and employees. If a company provides pro-innovation climate, the risk of failure of the implementation of innovative strategies in business is very low. Conversely, if in the enterprise there is an environment that does not support the creation and management of innovation, the initiative in implementing the innovation strategy is doomed to failure.

Table 2. Matrix of the status of implementation of innovative methods, sources, forms and management tools

Status	Points	Main risks
Management has no specific idea about the work of innovation in the enterprise, includes ways to achieve it	0	Innovation strategy does not allow work to innovation Innovation strategy is contrary to the perceptions of management
The management has got a specific idea, but that is not included in long-term business plans	1	Innovation strategy will not support long-term goals of innovation Innovation Strategy will be carried out unrestrained, without a coherent long-term vision
The management of innovation involves the long-term plans and commitment to the necessary human and financial resources for their search	4	Innovation strategy is contrary to the perceptions of management Innovation strategy does not respond to current opportunities and threats to innovation
Management has a vision to work with innovation in the long term. Regularly meets to assess the initial situation and determines the future direction of innovation	7	Innovation strategy will be realized without the support of employees
Management has an exact idea of working with innovation, which is reflected in long-term plans, supported by human and financial resources. Management actively communicates with staff and involves them in shaping innovation strategy	12	

Source: own elaboration

Table 3. Matrix of the work of invention, innovation opportunities, innovation and knowledge

Status	Points	Main risks
Invention and innovation opportunities are not registered	0	It is not base Innovation strategy will not support the information required in the innovation process
Invention and innovation opportunities are not recorded conceptually	2	Innovation strategy in some areas cannot support the necessary information
New innovative ideas are recorded and developed through creative techniques	5	Innovation strategy is to use only part of their innovation potential
The company shall keep reliable records on the state of inventions, innovation and opportunities for innovation (implementation, backup ...)	8	The risk of inconsistency of information
When there is a complaint about innovation (idea), everyone knows how to deal with it, i.e., there is a sophisticated system of work with their innovations including recording	13	

Source: own elaboration

Table 4. Matrix of the work of non-traditional methods, procedures and techniques of thought

Status	Points	Main risks
The company is holding up rather good roads, doesn't like inventing something new	0	There is nothing on which we can build an innovation strategy Innovation strategy has not greater importance
Employees after completion of specified tasks are not any more interested in a topic	1	Innovation strategy will have limited space for their development The lack of innovation challenges
Employees undertake trying to find solutions other than now	3	Limited use of non-traditional tools, techniques and methods of thinking
Employees with their imagination and creativity regularly contribute to the strengthening of competitiveness	6	The use of lateral thinking only in specific areas
Employees like inventing something new and find a solution often using unconventional methods, often at work think that it is not possible to solve the problem in a different way than before	10	

Source: own elaboration

Table 5. Matrix of the status of a supportive environment for innovation

Status	Points	Main risks
Communication does not work, the employees don't know about the future vision of the company management	0	There is no plan where to place innovation strategy The environment will act negatively in relation to the innovation strategy
Employees are familiar only with their precise roles (do not know the strategic objectives of the company)	2	Minimum commitment of employees to innovation
Pro-innovation corporate culture with an appropriate set of motivation program	7	

Source: own elaboration

The matrix of state of organizational structure

This matrix (Table 6) deals with assessing the suitability of the organizational structure for business purposes in the work of innovation. Attention is focused on three main areas. It is the area of secure information flow within the organizational structure, achieving effective communications within the corporate organizational structure and implementation of innovations in the organizational structure to support easier and faster work with innovation in the enterprise since the margin of the three areas will depend on successful implementation of innovative strategies within the company.

The value of points, as well as the formulation of state and resulting in the main risks is a matter for debate in broad scientific domestic and foreign community.

There is a relationship between the level of readiness of enterprise to implement innovative strategies and scoring areas of its key elements. For this reason the enterprise can

eliminate those risks, and successfully implement innovative strategies, the number of points with a minimum acceptable level. According to the status and the number of assigned points to them, we made comparative tables on the basis of which we determine the current level of preparedness of the business. Each level is assigned a point interval (Table 7). If a business fails in minimum acceptable levels, then it should consider whether it would be better to first improve those areas, thereby reducing the risk of failure in the implementation of innovative business strategies.

The proposed comparative table is based on the fact that the sum of points for best status of the area of key elements of an innovation strategy is 53 points (in the case of the first area it is about 12 points, second -13 points, third- 10 points, 7 points of the fourth and fifth, the last- 11 points).

As the enterprise is based on the number of points located on a different level than excellent, then they have the opportunity for the development of innovation and transfer to a higher level.

Table 6. Matrix of the state's organizational structure

Status	Points	Main risks
Poor organizational structure	0	There is nothing on which we can build an innovation Innovation strategy is not effective use of information flow and business communication
Organizational Structure with lack of security of information flows	1	Innovation strategy does not respond to the stimuli
The organizational structure of fully secure information flows, but that does not support effective corporate communication	4	Innovation strategy is not linked to all participants The emergence of the difficulties of reconciling innovation activities
A functioning organizational structure (to ensure efficient information flow and corporate communication)	7	Some innovative activities will be given insufficient attention
Pro-innovation organizational structure fully taking into account the work with innovation	11	

Source: own elaboration

Table 7. The proposed comparative table to determine the level of preparedness

Level	Point interval
Chaotic level	0–19
Insufficient level	20–28
Acceptable level	29–41
High level	42–48
Excellent level	49–53

Source: own elaboration

6. Empirical research – application of the proposed evaluation system of preparedness in business

We carried out research from May 2009 to February 2011. Our primary task was to obtain and interpret information about the level of preparedness and the use of innovative strategies in the medium and large businesses operating in the Slovak Republic.

The target groups were *medium and large businesses* operating in Slovakia. Research object (the final respondents) was managers of high and middle level management of these businesses. The sample size was 348 respondents (medium and large) for the desired 95% of confidence interval and maximum permissible error of 5%. Since the research involved 462 respondents, the sample is considered representative.

For objectification and better explanatory ability of the research we addressed medium and large businesses. Research involved 462 of the medium (87.01%) and large (12.99%) businesses operating in Slovakia.

In the research we have identified the following main conclusions:

- Among the innovative activities that most of the businesses deal with is in particular the internal research and development (50.65%), obtaining of modern machinery, equipment, computer hardware and software (45.24%) and training for innovative activity (38.53%).
- The biggest problem is the correct understanding of the fundamentals of innovation strategy, which is only average. Correct understanding of the fundamentals of the innovation strategy is referred to only by 12.34% of respondents, who agree with the opinion that this is innovative direction of the business with the goal to exploit and develop its innovative potential.
- 35.5% of respondents said that the innovation strategy of their business is fully utilized, which we consider as a positive development.
- 17.75% of respondents did not deal with the issue of innovation strategy.
- Businesses that have applied innovative strategy seek to improve especially in achieving the goals of market position, working with information and knowledge efficiency.
- 32.9% of respondents regularly review the innovation strategy.
- Only 41.13% of respondents record all the innovative ideas and use them if necessary in contrast to 18.83% of respondents who do not record the innovative ideas.
- 46.97% of businesses identified as a major problem for using innovation strategy in the business the lack of necessary funds. Other problems include the low level of employee motivation (31.60%), technical and organizational complexity (31.60%), lack of appropriate environment

conducive to development of innovation (30.52%) and insufficient use of available resources (24.03%). As the smallest problem the managers considered the lack of trust between management and other departments (12.77%), lack of information about technologies and markets (9.96%) and lack of qualified personnel (only 2.60%).

- Qualitative test of independence confirmed that there is a relationship (dependence) between the application of the dominant business concept and the degree of preparedness for medium and large businesses to use innovation strategy.

The research was focused on the detection level of preparedness of medium and large businesses operating in Slovakia for the use of innovation strategy. Managers had available evaluation form, in which they should evaluate activities in the field of innovation within the marked areas of matrices that most closely match the actual situation. The evaluation form was completed by 380 businesses.

We obtained the number of points that reflect the current state of preparedness of businesses to implementation of innovation strategy. To determine the level of preparedness, we used a comparative table. The following table expresses a clear way to point intervals required for the inclusion of business in one of five levels of preparedness. Now it includes the obtained results.

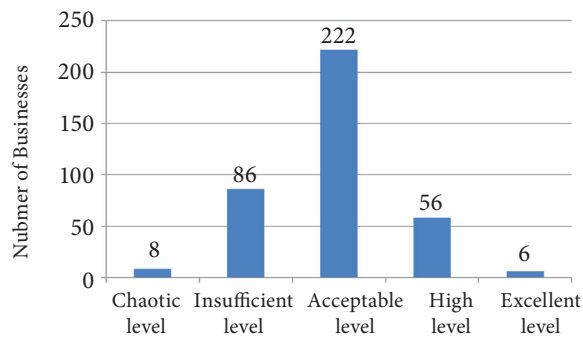
As shown in Figure 2, most businesses are located at an acceptable level (up 58.42%). We see this as a positive fact and a good basis for further activities of businesses in implementing an innovation strategy. On the other hand, we see as negative that the essential part of businesses is located at the chaotic (8 businesses – 2.11%) and insufficient (86 businesses – 22.63%) levels. These businesses must revise their current marketing and innovation policy. Managers of these businesses are recommended:

- develop a work plan for innovation in the business marketing, including how to achieve it,
- overhaul of corporate strategy in order to include product and process innovations,
- the allocation of sufficient resources (human and financial) to innovate and search,
- introduction of a transparent record of innovative initiatives, ideas and innovation,
- introduction of a transparent record of marketing knowledge of workers and ensure their mutual sharing,
- use non-traditional methods of thinking,
- the establishment of pro-innovation climate for the development of innovative ideas, creating space for open discussion of innovative ideas and work in teams,
- increasing interest in innovation management and innovation strategy,
- develop a suitable incentive program to encourage marketers to deliver new, innovative ideas and initiatives.

Table 8. Level of preparedness of businesses for the implementation of innovation strategy according to the comparative table

Level	Point interval	Number of businesses	
		Absolute values	Relative values
Chaotic	0–19	8	2.11%
Insufficient	20–28	86	22.63%
Acceptable	29–41	222	58.42%
High	42–48	58	15.26%
Excellent	49–53	6	1.58%

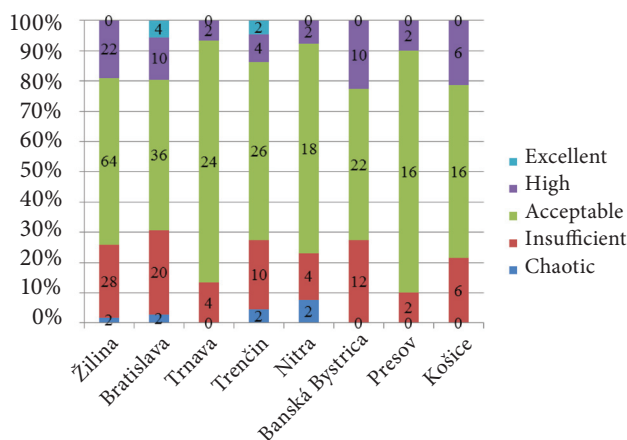
Source: own elaboration

**Fig. 2.** Achieved level of preparedness for implementation of innovation strategy

Source: own research

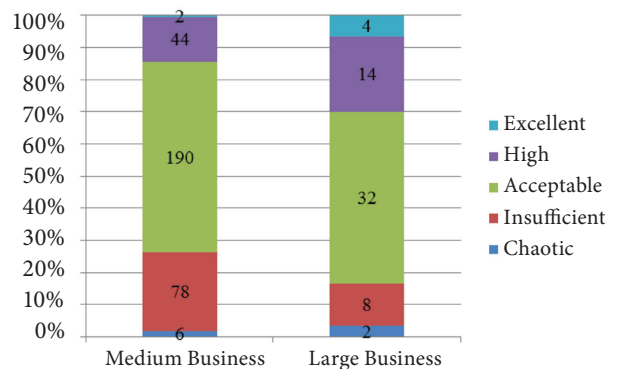
15.26% of businesses reported a high level of preparedness to implement innovation strategy and six businesses achieved an excellent level of preparedness (Table 8).

In terms of segmentation of businesses according to their place of action, i.e. by region (Fig. 3) we can conclude that best results are reported from Trnava and Prešov region. In contrast, the worst results were obtained in Žilina and Banská Bystrica. In general, we can conclude that different regions show a relatively similar structure of preparedness to implement innovation strategy.

**Fig. 3.** The level of preparedness of businesses by region

Source: own research

Figure 4 shows that the dividing of businesses into different levels depending on their size is relatively different. The situation for medium-sized businesses shows worse results than large businesses. We conclude that in the case of medium-sized businesses the acceptable level is of 59.38% of businesses, the insufficient level of 24.37% and 1.87% businesses are at chaotic level. 13.75% of businesses achieve the high level and excellent only 0.63% businesses. In the case of large businesses we can point out that high level is achieved by 23.34% of businesses and excellent level by 6.67% of the businesses. On the other hand, only 13.33% of businesses achieve the insufficient level.

**Fig. 4.** Level of preparedness of businesses for the implementation of innovation strategy by size of the business

Source: own research

7. Discussion

For the purposes of assessing the level of preparedness of businesses for the implementation of the innovation strategy, we developed a detailed methodology that can be a tool for further evaluation in other conducted research. On the other hand, we realize that this is a methodology which we developed based on our experience and especially thorough analysis and synthesis of knowledge in the area of the innovation strategy derived from domestic and foreign scientific literature. Therefore, the characters can be subjective. For the next application it will require the

verification in the form of public debate and wide professional experience in innovation, marketing and management. For this purpose in the future we plan to speak with experts at universities and colleges in particular of Poland, Lithuania, Austria and Germany. The correctness of the selected level can be checked also by conducting a more detailed empirical research.

Research results obtained form the basis for creating the content of matrices, and determination of scoring. Most interviews with top managers helped to obtain a more comprehensive view of the implementation of innovation strategy, to identify key areas affecting the creation of conditions (opportunities) for its implementation and realization in the business, forming the basis of individual matrices.

In developing and elaborating the proposed system, we issued the system of evaluation of CRM innovation from author Kopřiva (2001). This system is based on the different levels of customer relationship management, the author uses a similar evaluation system by matrices (see Kopřiva 2001). Difference scoring in the following matrices makes provision for the importance factor, which is reflected proportionately in relation to its contribution to the overall preparedness of the business for the implementation of innovative strategies. The different levels of preparedness have been designed to clearly name the different developmental statuses in reaching the highest levels of implementation of innovation strategy. A similar approach can be seen even in case of the maturity levels form model CMM (Capability Maturity Model), which emerged in the Software Engineering Institute Carnegie Mellon University, Pittsburgh at the beginning of the nineties of last century (Gartner 2001).

Methodology developed represents a valuable tool for business managers in the implementation and subsequent application of innovative strategies. It can also be as a tool for self-assessment. Management gets the evaluation of the level of readiness to implement innovation strategies in the business, identify weaknesses in the business in this area and reveals the scope for further improvement. Using the proposed methodology, we see also in the form of a control tool during the implementation of innovation strategy. The aim of the business marketing should be the continuous product improvement, transfer of new ideas, vision and emotion into them and enter them into the market as yet unopened areas where they develop to meet new customer needs. For this purpose, it will help the innovation strategy. For its successful implementation at least an acceptable level is needed that ensures use of its key elements.

8. Conclusion

At present, most of businesses are aware of the significance and importance of innovation strategy. Almost every business is forced to approach to innovation, not just

products and services, but most processes as well (Soviar 2009). Business just through innovation strategy is capable of responding promptly to signalling changes in the needs for innovation.

When designing the evaluation of preparedness for the implementation of innovation strategy in the business, theory of strategic management and innovation management was used. On the basis of the analysis (literature, empirical research) we obtained the facts that helped to design an evaluation system and point out problem areas that affect the readiness of business for the implementation of innovation strategy. The collected theoretical aspects related to innovation strategy and the results of empirical research allowed us to establish the comprehensive proposal on a readiness assessment and implementation of innovation strategy. Analysis of domestic and foreign literature highlighted the lack of a comprehensive evaluation system for readiness of the business for the implementation of innovation strategy. The authors in most cases are dealing only with different levels of description, respectively stating involvement of business in innovation (more Tidd *et al.* 2007) and Lesáková 2010). Created rating system takes into account these findings (levels) and also based on an assessment of current status of key elements of the innovation strategy through the score.

Solution of the problem in the paper was focused on proposal of evaluation system of preparedness of businesses for implementation of innovation strategy. The decisive result is the developed methodology of readiness assessment of business applied in the Slovak businesses. Developed methodology is for the senior managers, not only as a control tool, but primarily as a tool for self-evaluation, which highlights the weaknesses of the business in terms of innovation and reveals space for improvement.

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References

- Bartók, M.; Ješka, A. 2006. Procesy riadenia a implementácie inovácií vo firemných podmienkach, in *Transfer Inovácií* vol. 9. SJF, TU v Košiciach, 222–224. ISBN 80-80-73-703-0 (in Slovak).
- Blašková, M. 2010. Creative proactive-concluding theory of motivating, *Verlas: teorija ir praktika* [Business: Theory and Practice] 11(1): 39–48.
<http://dx.doi.org/10.3846/btp.2010.05>
- Bono, E. 1998. *Lateral Thinking: a Textbook of Creativity: the Use of Lateral Thinking*. Penguin. ISBN 9780140284492.
- Bono, E. 1993. *Serious Creativity: Using the Power of Lateral Thinking to Create New Ideas*. HarperBusiness. ISBN 978-0887306358.

- Dodgson, M.; Gann, D.; Salter, A. 2008. *The Management of Technological Innovation: Strategy and Practice*. 2nd edition. Oxford University Press.
- Frappaolo, C. 2006. *Knowledge Management*. Chichester: Capstone Publishing Ltd. ISBN 1-841112-705-1.
- Gilbert, J. T. 1994. Choosing an innovation strategy: theory and practice, *Business Horizons* November–December: 16–22. [http://dx.doi.org/10.1016/S0007-6813\(05\)80240-X](http://dx.doi.org/10.1016/S0007-6813(05)80240-X)
- Hittmár, Š. 2006. *Manažment*. Žilina: EDIS – vydavateľstvo ŽU. ISBN 80-8070-558-5 (in Slovak).
- Katz, B. R.; Du Preez, N. D.; Schutte, C. S. L. 2010. *Definition and Role of an Innovation Strategy* [online], [cited 02 January 2011]. Available from Internet: <http://www.saiie.co.za/ocs/index.php/saiie/SAIIE10/paper/view/119/72>
- Kopřiva, P. 2001. CRM? A není to riskantní? Metoda predikce rizika neúspěchu inovace CRM, in *9th International Conference Systems Integration*. Praha (in Czech).
- Kováč, M. 2007. *Tvorba a riadenie inovácií*. Košice: Technická univerzita v Košiciach. 121 p. ISBN 80-8073-690-1 (in Slovak).
- Lendel, V.; Varmus, M. 2011. Creation and implementation of the innovation strategy in the enterprise, *Journal Economics and Management* 16: 819–825.
- Lesáková, L. 2010. *Kľúčové atribúty úspešných inovatívnych organizácií*. Banská Bystrica: DALI-BB s.r.o. ISBN 978-80-89090-65-5 (in Slovak).
- Measure IT. Advice, Trends, Opinions and Analysis from Gartner Measurement. Special edition. Capability Maturity Model. 2001. *Gartner* [online], [cited 05 September 2010]. Available from Internet: http://www.e-strategy.ubc.ca/___shared/assets/MeasureIT-GartnersCMMmodel2840.pdf
- Šimková, H. 2006. Inovačný potenciál podniku – oblasť stratégie, in *Národná a regionálna ekonomika VI*. Ekonomická fakulta TU v Košiciach, 400–403. ISBN 80-8073-721-5 (in Slovak).
- Sloane, P. 2003. *The Leader's Guide to Lateral Thinking Skills: Powerful Problem-solving Techniques to Ignite Your Team's Potential*. Nordwolk: Clays Ltd. ISBN 0-7494-4002-3.
- Soviar, J. 2009. Cluster initiatives in Žilina region (Slovak Republic), *Economics and Management* 14: 528–534.
- Strecker, N. 2009. *Innovation Strategy and Firm Performance: an Empirical Study of Publicly Listed Firms*. Gabler Verlag.
- Tidd, J.; Bessant, J.; Pavitt, K. 2007. *Řízení inovací. Zavádění technologických, tržních a organizačních změn*. Brno: Computer Press. 549 p. ISBN 978-80-251-1466-7 (in Czech).
- West, M. A.; Farr, J. L. 1990. Innovation at work, in *Innovation and Creativity at work: Psychological and Organizational Strategies*. Chichester: Willey, 3–13.
- Zaušková, A. 2006. *Riadenie inovácií*. Zvolen: TU vo Zvolene. 220 p. ISBN 80-228-1634-5 (in Slovak).

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