

USING OF DYNAMIC STRATEGY MODEL IN INNOVATION PROCESS

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Abstract

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This paper incorporates a new scenario method which can use for formulate innovation strategy. The purpose of scenario is not to identify the most likely future, but to create a map of uncertainty – to acknowledge and examine the visible and hidden forces that directed toward the unknown future of a firm. Scenarios are used for capture a range of possibilities, good and bad, expected and surprising. They are designed to stretch our thinking about emerging changes and the opportunities and threats that may occur in the future. Scenario allows us to weigh our choices more carefully when making short-term and long-term strategic decisions.

strategy, innovation process, dynamic strategy, scenario

The reality of today brings frequent changes in the external environment of firms. The company in the Czech Republic doesn't expect to changes to business environment. Business entities are responding to those changes in different ways. Changes may present new opportunities but also threaten the very existence of the company. Management must therefore be ready for external changes, and must be able to anticipate, recognize, understand, and explore the interrelationship between causes and consequences. Already today, management have to make decisions about future things, activities, creation and the use of all their resources. In the forefront of interest is a new form of management and thus is an innovative management, whose main activity is the rational management of innovation process. The entrepreneurs should be able to respond promptly to the changing needs of end customers and the manufacturers. For this reason, it is important that the company creates an innovation strategy in addition to created business strategy.

Comparison of business and innovation strategy

"The tenet of corporate strategy lies in creating tomorrow's competitive advantages, but faster than competitors can imitate this in our enterprise of

today." Unfortunately, very often the managers of enterprises encounter the view that the creation of strategy is required. On the contrary, it becomes a burden, preventing flexible respond to current changes. After all, just one of the characteristics of corporate governance is putting great emphasis on intuition and improvisation managers for creating strategic planning. Although business model innovations are decisive for a company's long-term success or failure, they are still used compared to product innovations. Their execution is imperfectly supported, and their organizational accountability is insufficiently regulated. The strategy can be defined as all the measures of technical, economic, organizational and optimal decisions are taken in a period of time within a company, to achieve effective and profitable activities (Porter, 1991). In the current domestic and foreign professional literature we can find several definitions of innovation process, for example: (Lendl, 2010): Innovation strategy is innovate business approach to the choice of objectives, methods and ways to fully utilize and develop to innovative potential of the enterprise. This is direction of its boundary, which determines potential of innovative strategies.

The essence of strategy is to create an infrastructure that supports continuous innovation. Systematic implementation of innovation is based on purposeful search changes and the systematic

analysis of options. For businesses, it is important to understand the process of innovation, because the understanding affects how innovation is trying to be implemented and managed. To achieve innovation strategy is important for the company to achieve a high innovation level in the following areas of business management and (Švejda, Pittner, 2004): technical and technological level, including research and development, economic level, including financial resources, sales and marketing level, level of logistics, human resources and management.

If we focus on innovation as a practice in the development and introduction of new products, technologies, methods of management and administration in business process innovation is the implementation of flux. These changes bring manufacturers competitive advantage and help them to improve their competitive position in the market.

According to (Rylková, 2011): among factors that are pushing the growing needs of innovative activities, including:

- The shortening life cycles of products, so you need to constantly develop new and better.
- Technological advances (nanotechnology) – are the new opportunities for companies.
- Severe market globalization, the emergence of new competitive threats – missed opportunity becomes a threat to the enterprise.
- Difficulty customers (customer wants the product cheaply, efficiently, as quickly as possible).
- Global environmental issue.

Management companies should regularly evaluate the effectiveness of existing innovation strategy – comprehensive, may not be limited to the economic results, because those do not tell anything about successful future. Top management must realize that even excellent strategy loses its effectiveness over time and the four basic reasons are:

- Competitors often mimic successful strategy dominant entity.
- Competitors typically come with a successful business strategy.
- Competitive advantages of companies are gradually depleted in most customers' needs, which are primarily focused strategy.
- The power producer is gradually surpassed the power of customers and suppliers.

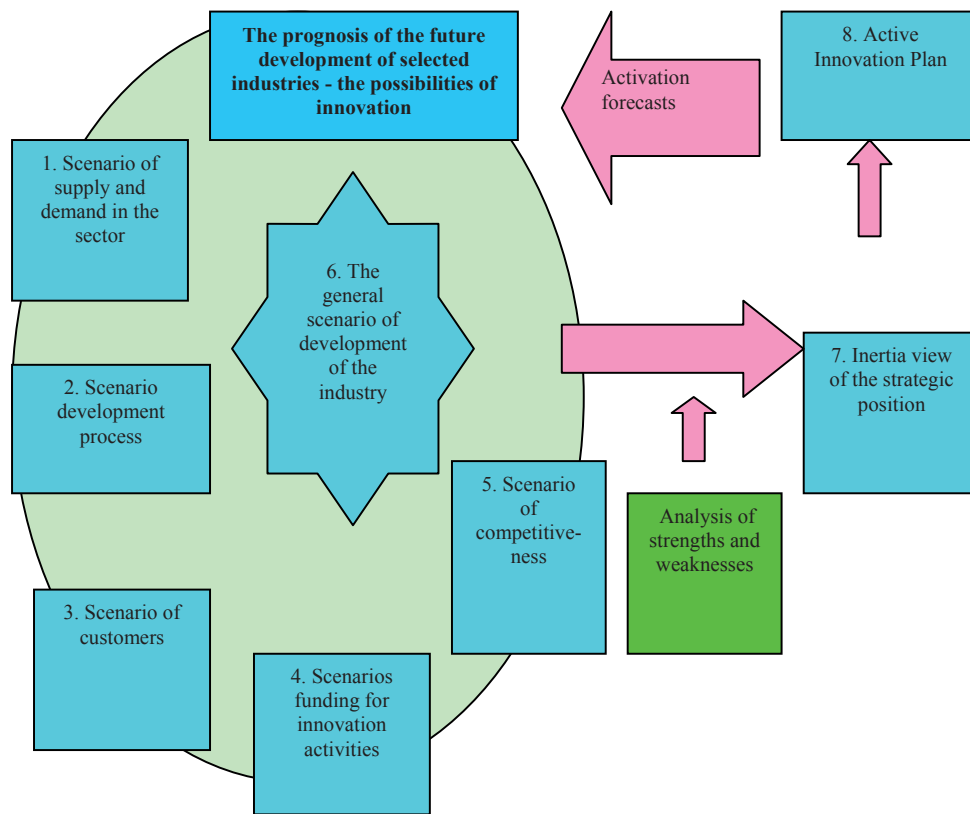
Managing in turbulent environments can be performed intuitively (administrative model of decision-making), which probably is applied by most organizations, but the recommendation is to use more sophisticated methods, such as scenario planning, which is based on the identification and significant influences that affect enterprise from the external environment. One method that is based on the scenarios is a method called Dynamic strategic consideration. This method uses sub-scenario forecasts for the further development of selected industries, and the creation of scenarios focuses on

the key factors that could affect the company in the future.

METHODS

Systematic innovation management is the biggest trend in the management of innovation. Currently, there are many innovation management methods that help drive innovation throughout the system and are not focused on just one sub-process. Examples include methods of TOC, TRIZ, Six Sigma and Gates. It is possible to come across methods WOIS, Creax and many others. However, these methods are not often used in Czech companies. At present, most enterprises are applied in the creation of strategic plans SWOT analysis. When applying this method, it is usually based on the strengths and weaknesses of the company and to a lesser extent, the emphasis is on the potential threats that the company may encounter in the future. For the fast and comprehensive orientation in the overall future development of company and for creating a specific vision is suitable a new method called "dynamic strategic consideration" (hereinafter referred to as DSB), authored by Ivan Fišer (2007). This method has been applied so far only for the creation of business strategy, but after consultation with the author and, after minor adjustments, it could apply to other sectors. The method is suitable for creating forecast for the future development of the sector. This resulting forecast could be used to create a successful innovation strategy. Scenario techniques are a powerful method for analyzing future building on two main principles, systems and future open thinking. A scenario can be defined as generally intelligible description of possible situation in the future, based on a complex network of influence factors. The scenario is created starting from the company's current situation, where major influence factors are defined as key factors within the scenario field analysis. In the next step, the scenario prognostic is used to suggest possible changes in these factors in the future. The scenario transfer summarizes different projections of the key factors in their specifications to create different scenarios.

Method DSB has total of eight consecutive scenarios (see Fig. 1). The first five steps are called sub-scenarios. In each of these scenarios described, all the factors can positively or negatively influence the future development of the industry in which the firm operates. In the first scenario it is important to evaluate what selected area or sector offers, and what the customers in the market demand. The important prerequisite for innovation understands customer needs and requirements into transferring his "speech maker." This company can be achieved e.g. by using QFD (Quality Function Development), which is systematic procedure for the transfer of (developing) customers in the technical documentation (design and technology) for products, services and processes (Macurová, 2008).



1: *Dynamic strategy balance* (Source: FIŠERA, I., *Moderní řízení*, 4, 30–33 s. 2007, ISSN 0026-8720)

DSB method differs from the SWOT analysis. Firstly it discusses potential opportunities and threats, and therefore it is necessary for this method to set the questions and hypotheses of what could negatively affect the activity of this sector such as globalization, the process of European integration, foreign competition etc. The factors mentioned above are then described in more detail in the second scenario and the scenario is the development of the innovation process. The innovation process develops innovative initial complaint in subsequent stages of the process that must be transformed into competitive advantages of the new product – its high quality, reasonable prices and good timing of its entry into the market. The third scenario is focused on the development of territorial allocation of customers. This scenario should capture the development and deployment of key prospective customers, but also suppliers, further deployment operations, particularly in manufacturing and services, and the location of territorial allocation. Currently, the primary goal of innovation is supposed to be the creation of value for customer. This customer is not only a customer in the sense of buyer but it goes about creation of value for customers who are defined in a wide context. It means that it is the value for both, for external as well as for internal customers. In this connection, if the value is inflected than this value should be measured. (Tabas, J., Beranová, M., Polák J., 2012). Following scenario deals with the financing of innovative

activities that for the firm usually represents big investment. In particular, radical innovations are costly for companies and highly risky. This scenario should capture all the possibilities and forms of financing that can be obtained and used to finance innovative activities of public financial support in developing programs to support activities related to the future development of selected sectors in the region. Funding for innovation activities from private sources is for firms usually between 1–5% of sales. Funding together with business angels or venture capital companies is not as frequent for small and medium-sized enterprises because companies cannot attract and convince investors on their business plan. The fifth scenario deals with the development of competitiveness. Its contents should be to evaluate the competitiveness of the sector on the development of its potential (human resources, economic potential, infrastructure, etc.). In this scenario should be use comparative analysis of competing firms both domestic and foreign. From these premises and sub-scenarios is formed comprehensive development scenario for chosen sector, to help assess the current position in the market. Based on previous analyses, are defined important assumptions and factors that may affect its future development.

To create a general scenario you can use the method whose authors are (Gierszewska, Chmielewski, Kozłowski and Skarzynski, 1997). This method can be used to create a general scenario,

which may take the form of optimistic, pessimistic, realistic and surprising scenarios. The process of creating is as follows:

1. Identification of significant factors from individual scenarios.

2. Evaluation of three basic trends of development of selected factors: growth, stabilization and decrease, in terms of: size of the impact on the company – it is using a subjective point scale ranging from –5 points to +5, –5 and a highly negative effects of high impact and +5 positive,

I: *The input data for the scenarios*

Area	Factors affecting the innovative activities of the company	Development a trend	Influence	Probability of occurrence
Development of a market	Requirement customers	growth	+5	0.7
		stability	+3	0.1
		decrease	–5	0.2
	Competition	growth	–3	0.3
		stability	+2	0.5
		decrease	+5	0.2
Development process	Speed of technological change	growth	+4	0.7
		stability	+1	0.1
		decrease	–5	0.2
	Substitution technology	growth	+3	0.7
		stability	+2	0.2
		decrease	–4	0.1
Financial expenses of a business	Expenditure capital	growth	+3	0.6
		stability	+3	0.1
		decrease	–5	0.3
	Expenditure on education and training	growth	+3	0.4
		stability	+2	0.3
		decrease	–5	0.3
Financial stability of a company	The economic power of the undertaking	growth	+4	0.6
		stability	+2	0.3
		decrease	–4	0.1
	Financial resources	growth	+3	0.6
		stability	+1	0.2
		decrease	–5	0.2

II: *Scenario for the future*

Area	Factors	Scenario							
		optimistic		pessimistic		realistic		surprising	
		verbally	points	verbally	points	verbally	points	verbally	points
I.	Requirement customers	growth	+5	decrease	–5	growth	+5	stability	+2
	Competition	decrease	+5	growth	–3	stability	+3	growth	–3
	The average size of the impact		+5		–4		+4		–2.5
II.	Speed of technological change	growth	+4	decrease	–5	growth	+4	decrease	–5
	Substitution technology	growth	+3	decrease	–4	growth	+3	stability	+2
	The average size of the impact		+3,5		–4,5		+3,5		–3,5
III.	Expenditure capital	growth	+3	decrease	–5	decrease	–5	growth	+3
	Expenditure on education and training	growth	+3	decrease	–5	stability	+2	decrease	–5
	The average size of the impact		+3		–5		–3,5		–4
IV.	The economic power of the undertaking	growth	+4	decrease	–4	stability	+2	growth	+4
	Financial resources	growth	+3	decrease	–5	growth	+3	decrease	–5
	The average size of the impact		+3,5		–4,5		+2,5		–3,5

the probability of occurrence in the range from 0 to 1, where 1 indicates that the factor will appear with 100% certainty.

3. Create four scenarios of future development of enterprise:
 - **Optimistic scenario** – occurs with selection of trend with the largest positive influence on an undertaking,
 - **pessimistic scenario** – is made up of trends with the biggest negative influence on an undertaking,
 - **realistic scenario** – consists of the trends that have big probability occurrence,
 - **Surprise scenario** – contains trends with the least probability of occurrence.
4. The calculation of the average effect in each area using the arithmetic mean, which represents the size of the impact factors of the area.

Difference between the optimistic and pessimistic scenario give a view the variability or the stability of the sector depending on the development area. When is the larger the span, the greater the variability of the sector and the more attention must be paid to the development of a strategy sector. Conversely narrow span means that any change in a given area will have a factor of relatively the same impact on the enterprise. From this perspective, we can say, that in the example is critical area to development of market. Unfortunately, other areas are also characterized by high degree of variability depending on developments the area. In the optimistic and realistic scenario are outweighing the positive areas to business – opportunities. Future version strategy should be focused on their utilization. On the contrary, in the pessimistic and in the surprising scenarios are outweighing threats and corresponding options strategies should include measures to eliminate them. It is appropriate in good time to estimate the effects of selected scenario, which again will be passed to all actors involved in the creation of strategy. In this scenario is the general description of the strategic position of the sector and will be include all the strengths

and weaknesses based on all previous results of analyses. The strategic plan, this should include the priority objectives that will lead to achieving the development of selected sectors.

DISCUSSION

For example DSB method is appropriate to apply in spin-off or start up companies. Dynamic equilibrium is applicable to both technical and non-technical fields. A significant advantage of dynamic strategic balance is in the interconnection of the individual elements of the natural logical framework. In addition, it allows strategic decision makers to acquire new information and experiences to change an existing strategic balance sheet quickly and cost-effectively.

Among the significant side-effects of the application of this method (Fišera, 2007) states the following:

- significant shift towards strategic thinking in a global context,
- permanent alertness and enhance creativity, strategic team,
- continuous and efficient creation of strategic information support,
- decisions about the region and in some region,
- Strong motivation and strengthen the activities of all participants involved in the development strategy.

At the end of this post I would like to emphasize that the creation of an appropriate strategic plan is needed not only to choose an appropriate strategic method, but also create a good team of workers to be involved in its processing. Also important is the cooperation between the universities, research centres and businesses of the region, because it may significantly contribute their suggestions and recommendations for the development of selected sector. The method of dynamic strategic balance have to help develop a strategic plan contributes to the strategic thinking of all those involved in the creation of scenarios.

SUMMARY

Company owner or manager must have set a vision of the company where wants to going, what direction they will take with their business activities. The management company involved in the management realizes that the fulfilment of the vision is necessary to know how best to estimate the evolution of the market and business conditions and, accordingly, set long-term goals and ways to achieve them. Part of the corporate strategy and objectives is included in innovation, which attempts to fulfil, and is based on that creates innovative strategy that will be implemented in the company. Innovative strategy includes development process, which begins with the added value for the customer and ends with the evaluation of the perceived effectiveness of innovation from the perspective of the creator. Creation and implementation of innovation strategies are the basic activities of the company management. Every type of innovative activity brings with it different requirements for the organization of business processes. In practice, one can find different methods that are used to create innovative strategies. In this paper, a method introduced of Dynamic strategic was consideration which is not yet used in business so often used as a method of SWOT and because of the ignorance of this method. The method is based on the basis of sub-scenarios, which together form a comprehensive scenario that shows the view of an inertial position of the field in the market. The advantage of this method is that it emphasizes the dynamic future-oriented thinking.

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