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## Management of Innovation Processes in Company

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### Abstract

Management of innovation processes in company is the field of innovation management which is still not enough researched and applied in practice. Managers in companies often do not know about modern techniques and design tools for creating innovation processes and also as about the possibility of their effective usage for management and effective usage in decision-making conditions. The purpose of this study is following a detailed analysis of literature and realized research to create a model of innovation processes management in the company. There were used different methods by solving the defined problem, for example: content analysis - the study of documents, synthesis, comparative analysis, process analysis, statistical analysis, modeling, programming, empirical research methods and others.

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### 1. Introduction

The main aim of the paper is to acquire new knowledge in the field of innovation management that are focusing on the area of innovation processes and highlight the possibility of managing of innovation processes in business. The proposed model is intended to serve as a control tool during achieving of performance of innovation processes in company. The aim is to give business managers a tool for innovation processes management.

In order to address the points in question, as set by this article, it was necessary to use several methods, depending on and fitting to the character of the individual parts of the solution. In order to accumulate necessary data, we used the method of document analysis (for analysis of current as well as historical data about the topic), a

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questionnaire method and a method of semi-structured interview (gathering data in an empirical research) and a method of observation (used during visits of selected companies). The methods used for further data processing were induction, deduction, synthesis, abstraction and modelling.

## 2. The Current State of Dealing with the Issue

Innovation process can be considered on the base of scientific literature analysis as an organized and controlled sequence of activities where inputs in form of innovation ideas are transformed into outputs in form of innovations. It is a process of recognizing customer needs and innovation opportunities, generating innovation ideas and their elaboration, work with information and knowledge regarding innovation, realization of innovation activities and ensuring successful extension of innovation among customers.

Since new customer needs are created based on extension and usage of new product, an innovation process can be understood as a repeating process. Furthermore the number of innovation processes is not limited. Innovation process has also a built-in mechanism of learning, i.e. a mechanism evaluation of incurred failures and deviation in each phases of the innovation process.

Mechanism is supported by feedback in each phases of the process. This mechanism is also supported by its openness which allows the company to adopting innovation ideas, necessary licenses for research and development from the external environment. In the case of non-utilization own innovation solutions, it should to offer these solution to other companies, in the base of license.

On the base of the detailed analysis of the various approaches to the innovation process management in the company by various authors as well as the evaluation of the practical approaches can proceed to the systematization of lessons learned. This is a summary of the main benefits of different innovation process models that provide resources for the creation of a comprehensive model for the innovation process management. (Table 1).

Table 1. Benefits of different models of innovation processes.

Author(s)	Emphasis	Fortification
Imai et al. (1985)	Functional Integration	Integrated innovation process
Rothwell (1994)	Electronic data processing	Information assurance of innovation process
Dvořák et al. (2006)	Feedback & Creative activity	Cross connection of innovation process
Vlček (2011), Mol & Birkinshaw (2006)	Needs Dissatisfaction with status „quo“	Needs / dissatisfaction as the main launcher for innovation process
Bernstein & Singh (2006)	Manifestation of management (control element)	Organization of the innovation process for site management
Tidd et al. (2007)	Timing & learning	Innovation process base on a continual improvement
Skokan (2004)	Systematic approach Role of environment	Innovation system (national, regional) Local innovation process
Chesbrough (2003)	Level of openness	Bounded (closed) Unbounded (open)

## 3. Situation in Slovak enterprises – results of the empirical research

Between October 2012 and January 2014 we conducted a research, with the primary goal to gather and interpret information about the level of use of innovation processes management in the environment of Slovak enterprises. In total, 321 managers of small, medium and large enterprises took part in the research, from companies active in Slovak republic.

Most businesses (257/80.06 %) generate innovative ideas to the identified customer requirements. However, a large number of businesses (186/57.96 %) do not take a proactive approach to generating innovative ideas and create

them just in case there is a problem already. Ideas are generated randomly according to 29 businesses (9.03 %) and they are not created at all in 19 businesses (5.92 %).

Innovative ideas are not being recorded by any information system in more than 61.28% of the companies in Slovakia. Out of the 28.96% that do use information systems, about 75.23 % have created their own information system. In addition, in Slovakia, 16.72% of companies are using a system to record ideas that is provided by firm Salesforce.com.

#### 4. Management of innovation processes in company

Management of innovation processes in company is a real problem, which are managers of the company faced. Number of factors participates in its provision, from theoretical concepts, through model solutions to practical applications. The biggest or the most significant problem can be seen in an absence of unified, or complex and at the same time transparent management innovation processes model in company. It can be said, based on the results from realized research, that on the present many companies try to manage their innovation activities and processes intuitively. However, companies must often solve various problems caused by their unpreparedness to manage innovation processes. A requirement to create a comprehensive and transparent innovation processes model, which would be a significant aid for managers, resulted from interviews with several representatives of companies within realized research. The benefits from this model would appreciate not only managers, but also customers, because their communication with company related to preparation and assurance of products and services by fulfilling customers' requirements and needs. This can lead to the elimination of a number of problems both from companies and its customers.

A management innovation processes model in company (Figure 1) was designed on the basis of views of various authors dealing with the issue of creating a model for managing innovation processes in the company and also after careful analysis of mentioned approaches to the development of innovative processes. Solution is based on a management of innovation portfolio model according to Hamel (2002). His definition of innovation has two approaches. First it represents competences that need to be built, and second it is a process that needs to be implemented in company. Therefore is model made up from two main parts, specifically:

- *innovation process,*
- *innovation competences.*

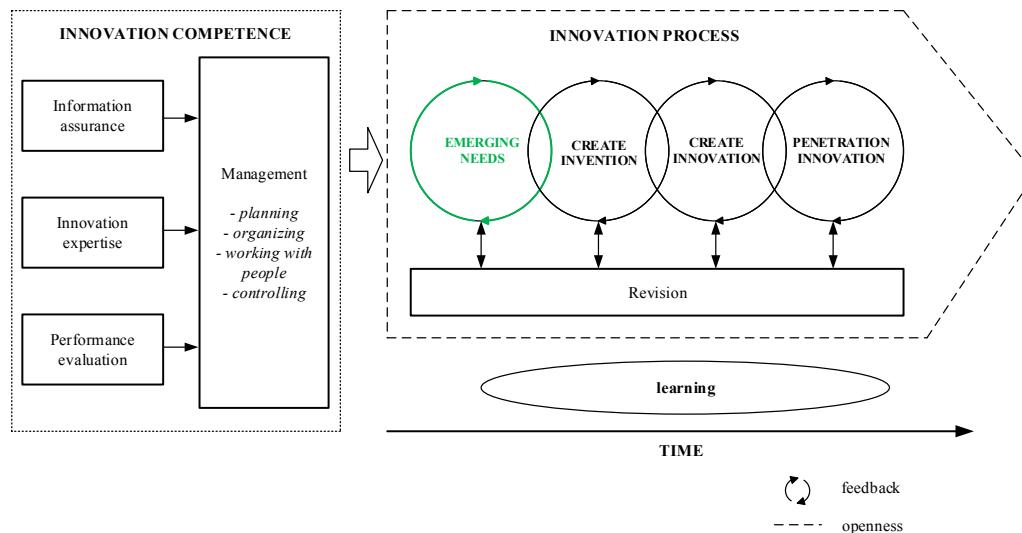


Fig. 1. Management innovation processes model in company.

*Innovation process* is a sequence of activities aimed at creation and implementation of innovation. It includes activities related to generating innovative ideas, their evaluation, creation of innovation and ensuring its spreading among customers. A transparent model of the innovation process was developed to better understand its single phases. It is based on the basic model by Zaušková and Loučanová (2008). However, it is enhanced by identified key elements. Specifically, it is about adding the first phase of the innovation process aimed at *creating the need, or dissatisfaction with the status "quo"*. Need, or dissatisfaction is perceived as the main trigger of the innovation process. This fact was highlighted by authors Vlček (2011), Mol and Birkinshaw (2006). Furthermore, in the innovation process is regarded the degree of openness, of which importance noticed Chesbrough (2003). It is a boundless innovation process that allows flexible work with innovative ideas, which come to the company both from the internal and from external environment. Company can offer unused innovative ideas to other businesses by licensing, and vice versa, if necessary, it may acquire innovative ideas from external environment. Next element is *feedback*, which is highlighted in the innovation process. It allows to overcome problems accrued in the various stages of the innovation process. This is an approach proposed by Dvořák (2006) in a form of chain links in the innovation process. Innovation process takes into account also the element of *learning*, which should contribute to a continuous improvement of the process. Tidd (2007) considers learning as a critical point in the management of innovation. Company can learn through the procedure in the innovation process and thus improve its management methods.

According to Hammel (2002) innovation competence are understood as a tools which allows company to use in innovation process management innovation tools, supported communication and information technology, management processes and appropriately to establish criteria for measuring the success of the individual phases of innovation projects:

- *innovation expertise,*
- *information security,*
- *management (planning, organizing, leading people, control),*
- *evaluation of the level of innovation processes management and innovation performance.*

On the base of the proper usage of various management functions (planning, organizing, leading people and controlling) the innovation process should be effectively managed. The communication is important role in this process. An essential foundation for the successful management of innovation processes in the company can be considered an effective system of information security innovation processes. Another innovation competence is innovation expertise. It is necessary that the company management is supports the creative human potential. This means that employees how to fully use their skills and capabilities to ensure the innovation process.

In order the innovation processes should be managed effectively it is necessary to report some results in fields which affect to the management of innovation processes. Every company has a different level of management of innovation processes. Therefore, it is necessary to identify in the first step the current level of innovation process management in the company, then discover weaknesses and make recommendations for their improvement. It is necessary to build up an appropriate methodology for evaluating the innovation process management in the company.

## 5. Discussion

Management of innovation processes in the company is a challenging task for managers of the company. There can be a lot of causes of innovation process management failures and they have a different character. For example, there may be a lack of innovation expertise, failure to secure the flow of information in a company, insufficient training and motivation of employees, etc. Reasons of innovation process management failure affect several actors. Firstly, it is about managers in case of the lack of innovation activities in the company, company employees who are passive in participation in the innovation process and customers who are not interested in providing some added value.

Management of innovation processes cannot be implemented intuitively only on the base of evolution of the situation. It is a complex process with a lot of aspects: the state of innovation potential, constructed IT infrastructure, evaluation system of employees and organization arrangement. Effective management of innovation processes should identify weaknesses (gaps) and take measures to eliminate them. It should also be able to bring information

related to innovation to responsible persons. Company should be prepared to face some risks that can occur and cause failure of the implemented innovative projects. If the company identify risk soon and prepare for them, then there can be increased the probability of successful innovation process management in the company.

The following recommendations should help to reduce the occurrence risk of identified problems. It should help to company managers in the management of innovation processes as well as prevention of the occurrence of problem situations. Managers of businesses may be recommending: (Lendel and Varmus, 2014).

- *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,*
- *the establishment of pro-innovation climate for the development of innovative ideas, creating space for open discussion of innovative ideas and work in teams,*
- *create a mechanism for selection of appropriate innovative ideas in order to avoid duplication and loss of innovative ideas.*

## 6. Conclusion

The design of model of innovation process management in company is possible to consider as a main result of analysis. In the solving of defined problem were identified key innovation competencies (innovation expertise, information security, management and performance evaluation) and main difficulties of innovation process management in terms of Slovak companies (empirical research realized by authors). Valued results of this study are also formulated recommendations how to correctly manage innovation processes in a company.

As a main conclusions can be mentioned: Management in company is important in the field of innovation processes management. A key assumption for the successful realization of the innovation processes is the existence of a supportive environment for innovation creation. For managers can be recommended to implement and use the system of self-evaluation of innovation processes in company.

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