

ESTABLISHING CONTINUOUS INNOVATION PROCESSES IN SMES: METHODOLOGY

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Abstract

The paper introduces literature review and methodology, which will lead to subsequent development of a software tool assisting small and medium-sized enterprises in establishing continuous innovation process. The aim of the methodology is to facilitate innovation management techniques for SME, to raise awareness of SMEs of innovations and motivate them to adopt innovation processes into their daily business routine. The paper highlights factors of personal traits of SME owners and managers such as self-motivation, self-determination and willingness to change, which are crucial for suggesting, developing and implementing any innovation efforts within a company.

Keywords: *Innovation process, SMEs, self-motivation.*

JEL classification: *M10, L21, L26*

1 Introduction

There can be seen big innovation development in companies recently (Koudelková, 2013). According to Heřman & Horová (2013), the term innovation is derived from the latin word “innovare”, which they translate as to renew. Vlček

(2011) translates the same expression as a change leading to something new. From this we can deduce that neither this translation nor the definition of innovation will be uniform as the term innovation as well as all terms derived from it have constantly been developing.

Novák (2016) considers innovation “renovation and enlargement of the range of products and services, related markets, creation of new methods of production, delivery and distribution as well as introduction of changes in management, labor organization, conditions and qualifications of workers.

Innovation is linked with a new idea, which is usually the primary impulse for a change. Many obstacles may occur when introducing a change. These may make the whole process more complicated or even longer, which means innovation may influence the operation of a company in a positive as well as a negative way. It would be nice to have only positive results but unfortunately things do not always end up like this. If a company does not evaluate the situation properly and starts introducing wrong innovation, it can experience serious consequences e.g. production decline, drop of customers’ interest or increase of costs. That is why each decision dealing with innovation should be carefully considered.

One of the main goals of running a business is to get advantages of competition. This can be reached on supposition that creativity and positive attitude towards changes in all areas are included in the process of continuous changes. According to Florida (2002), changes occur even in the management process; business blends with innovation and culture in the society as well as in the company itself. The field in which company managers would welcome help from the side of universities and researchers is how to differentiate individual ideas, select the high-quality ones that have high probability of success in the future, and continue in their further development. (Von Stamm, 2008)

Small and medium-size enterprises are an important part of economy, nevertheless we cannot ignore that one may sometimes meet here some reluctance to accept changes in production, management, or unwillingness to expand. Another fact that we cannot fail to notice these days is that innovation processes in companies are influenced by changes of the outer environment (ie other entrepreneurial and non-entrepreneurial subjects) as well as by behavioural changes within companies so quickly that everyday routine fails to respond to these, e.g. it lacks self-reflection. Collins (2017)

Although various innovation processes, which are mostly geared towards product innovation, have been introduced in the literature, their core ideas remain similar. Very early on, new product ideas progress through testing, feasibility and market screening to trial runs and commercialization. Rapid technological changes and advancements have pushed companies towards ever faster

innovation cycles and speedier innovation process. On the other hand, SMEs have been reported to have limited resources (Lee, Yoon & Park, 2010) and therefore a greater need either of simplification of the innovation process or collaboration with other entities in various stages of the innovation process (Narula, 2004).

Innovation processes have been analyzed through historical perspectives as well as epistemologically. Marinova & Phillimore (2003) distinguish between six generations of innovation models: 1. Black box model; 2. Linear model; 3. Interactive models; 4. System model; 5. Evolutionary model; and 6. Innovation milieu model. Meissner & Kotsemir (2016) propose that innovation models can be categorized into “conceptual” driven or “innovation management” driven.

Various authors outlined and emphasized different steps and different challenges on the way towards innovation, whether product-innovation; process-innovation, or other. For instance, the innovation processes, which shall culminate with a new product, can be undertaken in the following steps (Cooper & Kleinschmidt, 1986): 1. Initial screening; 2. Preliminary market assessment; 3. Preliminary technical assessment; 4. Detailed market study/market research; 5. Business/financial analysis; 6. Product development; 7. In-house product testing; 8. Customer tests of product; 9. Test market/trial sell; 10. Trial production; 11. Precommercialization business analysis; 12. Production start-up; 13. Market launch. More recently, Säfsten et al. (2014) focus mostly on the production side of innovation and sum up the innovation process into three separate but often parallel phases: 1. Technology development, 2. Product development; and 3. Production. Lately, the issues of customer involvement (Schaarschmidt & Kilian, 2014) or sustainability (Dangelico & Pujari, 2010) are believed to be the key for successful innovation. Lately, only partial areas of the innovation process were further analyzed. Innovation process planning model (Jurczyk-Bunkowska, 2013) pays special attention to the very early stage of systematic innovation management and distinguishes three interrelated steps (1. Identification of needs; 2. Assessment of knowledge gap; 3. Planning cycle), which are anchored in the internal as well as external business environment.

In the section of this paper called “Results and Discussion” it is recommended to adjust the above-mentioned innovation processes and emphasize especially the steps related to evaluating the ability to introduce innovation. Regarding this fact, the authors used the VRIO analysis as a tool to assess the management of companies. To conduct the actual control of innovation based on the suggested innovation process, it is recommended to use features of self-motivation that are as well described in this paper.

2 Data and methodology

The aim of this article is to reason the possibility to improve the innovation process by supplying it with the VRIO analysis and self-motivation features of sustainable management of changes in SMEs.

We have outlined theoretical points of view to understand and accept changes in the innovation process so that these may become the base for the methodology of management of the innovation process which will next year include the software tool SIP-SME. This tool is being developed within the project "Service for Innovation Process in SME". This methodology is aimed to enable the manager to analyse the intended innovation with a certain distance and in proportion. The methodology takes into consideration the inclusive approach because it is based on the assumption that the innovation process is mainly focused on the user (so called construction process) Collins (2017). At this point the methodology is becoming a method aimed to be communication-friendly.

We have used theoretical conclusions for the detailed analysis of the innovation cycle. The aim was to provide the innovation cycle with the missing part that might become a self-motivation tool for easier and more effective acceptance of very frequent changes in the innovation process. We have as well utilized the theoretical conclusions stimulating the self-motivation features to accept changes.

To explain the interdisciplinary relations, we proceeded on the analytical-synthetic scientific method. The draft of the innovation process applicable in MSP was carried out based on the study of professional literature and discussion with the authors of the paper.

3 Results and discussion

This methodology is aimed to facilitate and ease the management of innovation so that the innovation effort may become a common, routine and well-accepted activity complementing the constant innovation process. It will be used in the process of creating and implementing tools for managing the innovation processes in SMEs, one of these tools will be a specialized software. Thus the innovation process in companies, using this methodology and its tools, may become a common and permanent process on the same level as other processes within a company (human resources, marketing, logistics, financial management...), a process without which no company can plan its further existence and efforts to keep a continuous increase of its competitiveness.

We have presented this methodology of innovation processes management in order to prevent the negative features of innovation implementation and to support its positive impact.

Other goals of our methodology are as follows:

- To discover a way to improve the current process of innovation management (using new, specific knowledge, skills development, better organization, or reconciliation with the current situation).
- To facilitate the retrieval of necessary data linked to the innovation process.
- To utilize new facts about functioning of the human brain for the company owners to be able to analyze the innovation process within their companies by themselves, in proportion with other processes in the companies.
- To reach exact innovation in a company using the suggested procedure.

3.1 Changes suggested in the process of innovation management

The following phases of the innovation process have been outlined based on the discussion of authors of this paper and the comparison of individual approaches in professional literature (see the Introduction of this paper).

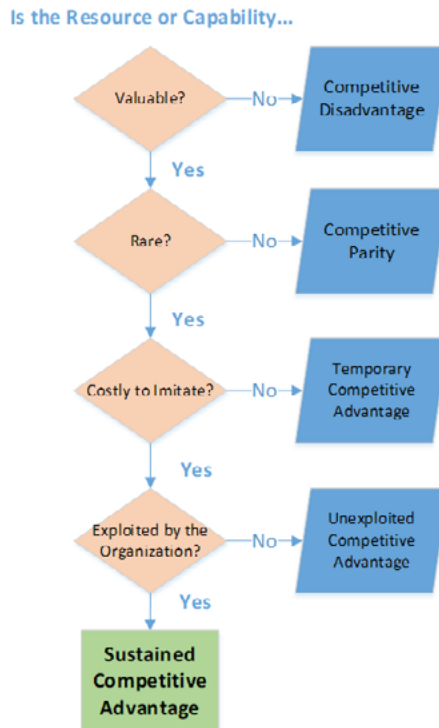
1. Incentive of innovation.
2. Suggestion of innovation.
3. Searching for conditions of innovation.
4. Development of the innovative solution.
5. Testing of the innovative solution on the market.
6. Introduction of innovation.
7. Verification of the rate of success.

According to the authors, the key phase for a successful implementation of innovation is especially step 3) Searching for conditions of innovation. In this phase, the use of VRIO analysis can be recommended. It represents one of the methods of strategic management and it is used to evaluate the condition of the company based on the evaluation of its sources. It may also lead to specification of the competitive power of the company. The VRIO analysis is based on so called approach of sources which is largely based on the theory of the microeconomic allowance (Ricardo, 1956) and Schumpeter's approach to reach competitive advantages using innovation (Schumpeter & Swedberg, 1996). The empirical studies confirm that the approach of sources is more suitable to determine the competitive position than the approach of position described by Porter (1998). This is mainly due to the fact that differences in profitability within a branch are more important than differences in profitability between branches (Schmalensee, 1988;

Buzzell & Gale, 1987). This means that Porter's approach of position which suggests that the attractiveness of a branch is the primary source of profit generation has not been confirmed (Porter, 1998).

Barney (1991), who is the author of the VRIO analysis, suggests that if we want to exploit sources to reach a constant competitive advantage, these have to show the following qualities: they must be valuable – bring certain value to the customer; rare - it should not be easy to get them on the market of sources; costly to imitate and suitable for exploitation by the organization. The survey of individual sources including their competitive consequences is listed in the following graph.

Graph 1 The course of questioning when using the VRIO analysis (adapted Rothermel, 2015)



A source must fulfil all four basic prerequisites at the same time to provide a certain competitive advantage.

3.2 Suggested procedures in the management of changes

Our methodology also uses the data from the latest researches dealing with functioning of the human brain. These researches confirm that a new idea has a very short life and if it is not further exploited, it disappears (Rock 2007). If we want to form new ideas, it is necessary to create a suitable environment, e.g. get rid of many details and disturbing moments that only distract our attention (Košovská at al.2014).

Further on, our methodology draws upon the latest facts about SMEs management, ie the constant effort to keep and improve competitiveness through application of active changes and supporting the innovative ability of companies. To be able to do this we must know the basic condition of each company. The methodology respects the importance of SMEs in the economies of the European Union. It follows the research among 157 managers done by the agency Ipsos in 2015. This research was called: "Industry through the eyes of managers and the general public". Managers in this research labelled the improperly set legislation as the biggest hindrance to innovation. The second most important obstacle was the people's reluctance to look for new, creative ways. Our methodology aims to eliminate the second barrier.

There are many axioms, theoretical approaches and manuals dealing with the problematics of innovaton implementation. They contain sets of rules that must be kept, possible barriers as well as suggestions of functioning under certain conditions. None of the authors solves any specific innovative process in a particular company. If a company hires an expert in innovation management supposing everything will be solved successfully, they may not be always satisfied. The main barrier in a system implemented through external consultants is the functioning of the human brain. Each of us evaluates available information in a different way, either based on our own experience, or through emotional relationships. In this case the advice of an external consultant may not be always accepted positively. (McGrath & Bates 2013).

We consider the most beneficial option creating a methodology which will enable each user to manage the innovation process him/herself through leading questions, to keep the highest possible level of sincerity. The questions should be predominantly open, closed questions may be used exceptionally. The set of questions will be organized into a decision-making tree. A form will be printed after finishing this questioning. It will contain the information concerning the evaluated situation and its future perspective filled-in by the person questioned as well as a set of recommendations resumed by the team.

A sample recommendation is e.g. to make a more detailed analysis of a certain source labelled like a weak point in the VRIO analysis, or to participate at

a special training aimed to enlarge specific knowledge of innovation, possibilities to finance innovation from different sources, or focused on personal development and organizational skills to manage the process of innovation.

The set of questions will be prepared in a way to help eliminate the reluctance to implement any change. It will be based on facts from the research of the process of change implementation (Duhigg 2012, 2013).

The willingness to introduce changes can be increased by supplementing the set of questions with open questions used in coaching interviews (Whitmore 2011, 2010).

Coaching is one of the sources for creating questions in our methodology. Coaching in the form of self-coaching is based on the significantly adjusted Grow model (Whitmore 2010), Managerial audit (Stejskalová, Rolínek 2008, 2011), with implemented features of systemic coaching (Zatloukal & Vitek, 2016). From the systemic coaching we have used mainly the part focusing on the identification of the non-problem which is the idea of what the company will look like company after the innovation is introduced. This feature joins the methodology with the supporting questions according to St. John (2014).

The methodology further on reflects the management of change (McGrath & Bates 2013). It is mainly based on the modern approach to the management of change.

The possible basic structure of an interview might be as follows:

- Searching for aims.
- Analysis of the current state.
- Suggestion of possible solutions.
- Composition of the plan of implementation of the change.

In the first part of the set of questions we will especially focus on creating the right atmosphere for creative and positive thinking. We will be looking for aims related to the development of the company.

In the second, analytical part we will use the set of questions from the VRIO analysis enriched by complementary questions from the field of the process maps and other analytical tools used to evaluate the current situation in the company. This enables the company manager to see the innovation process in proportion. At the same time, he will be able to use the evaluation of sufficiency or insufficiency of process management compared to their best competitor. Last but not least the aim of the analysis is to observe the approaches of senior executives to change.

Based on the executed analysis, there will be added questions leading to setting suggestions for changes in management. E.g. how could the company manager

introduce the possible innovation of the management process. It is advisable to prepare more varieties of solution presented in a feasible way. It means what the individual situation will look like after implementation of innovation, who will do it and at what cost, etc. This research is done to eliminate the number of varieties so that it is possible to identify just one goal of the future innovation efforts of the company.

Within the set goal we should identify the first simple step leading to change that must be implemented as soon as possible (within days). That way we will encourage the manager to get over the resilience to the change and to start working towards the goal. The manager will create a plan responding to the following questions: What will be done? Who will do it? What is the deadline? This part is in some way a deal with him/herself, which is considered very effective in the frame of systemic coaching. If we add other questions: What positives will bring the implementation of this step? How shall we reward the person who will be responsible for the implementation of the change? We will use the positive results of the research of change implementation presented in the book (Duhigg, 2012; Haberleitner, Deistler, & Ungvari 2009).

The previously developed methodology Stejskalová, Rolínek (2011) "Methodology of managerial audit in SMEs" did not focus on the management of processes in the field of research and development, that is why the currently developed methodology for management of innovation processes and a SIP tool is aimed to fill in this gap. This methodology was prepared as a starting point for preparation of work on the SIP-SME software tool which will help the continuous management of innovation.

4 Conclusion

The aim of this paper was to introduce a methodology that might be the starting point for preparation of a software tool for innovation management. There have been set the basic goals and approaches. The principal approach is using the VRIO analysis for evaluation of the sources of a company as well as the conditions for implementation of the intended innovation. The second main approach is the exploitation of new information about functioning of human thinking to naturally support the motivation to smoothly accept changes. It is necessary to mention that the authors were aware of the fact, that every innovation is a change but not every change is a piece of innovation. That is why the creation of the software tool will be based on the management of changes in general. However, the individual steps will have the necessary form to support those changes which can be considered innovation. To combine the requirements of standart definition

of the innovation process with change management seems to be a difficult, but necessary task. This task is difficult mainly because it differs from the currently presented view of the innovatoion process.

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