Product Innovation Management for Business Development

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Abstract

Innovation Management is important for maintaining the competitiveness of enterprises and represents an opportunity to develop start-up companies. Because the Innovation process is lengthy and risky, applying rules and specific management techniques significantly reduce the risk related to innovation and shorten the road from idea to result. Besides the general techniques of management, innovation management involves the application of techniques such as: management of ideas, creativity management, strategic intelligence management, intellectual property management, technology management. In order to develop a business through product innovation one must identify mainly the following aspects: which are the products on demand on the market; how those products are conceived; how those products are manufactured; how to introduce those products on the market; what life cycle will the products have. In the paper are described the phases and steps for a product innovation process, with emphasis on how those products are conceived, that is how the development of the project phases are led.

Key words: innovation, management, development.

JEL Classification: O31, O32

1 Introduction

The paper presents a part of the study elaborated by the authors referring to product innovation management. Our own contribution consists in a model of approaching the innovation process and elaborating a method of management of innovation projects. In this context the process of innovation is a complex process which is determined by the company innovation strategy and is based on a series techniques of innovation management. The method of management of innovation projects consists in the systematization of the phases and steps for their development.

2 Assess the Impact of Policies of Innovation and Technology Transfer in the Regions of Romania

Innovation in a region cannot be reduced to the introduction of novelty because the access to novelty is favored by the political, social and cultural issues at the regional level. The regions should provide an environment that has the efficient structure, institutions and policies that encourage innovation among operators.

In Romania, in 2011, was developed by a consortium (North University of Baia Mare, represented by the authors of this work, was partner in this consortium) a study that would want to determine the innovative potential of regions. Thus was determined the level of innovation in the regions of the Romania. The results were illustrated in Fig. 1.

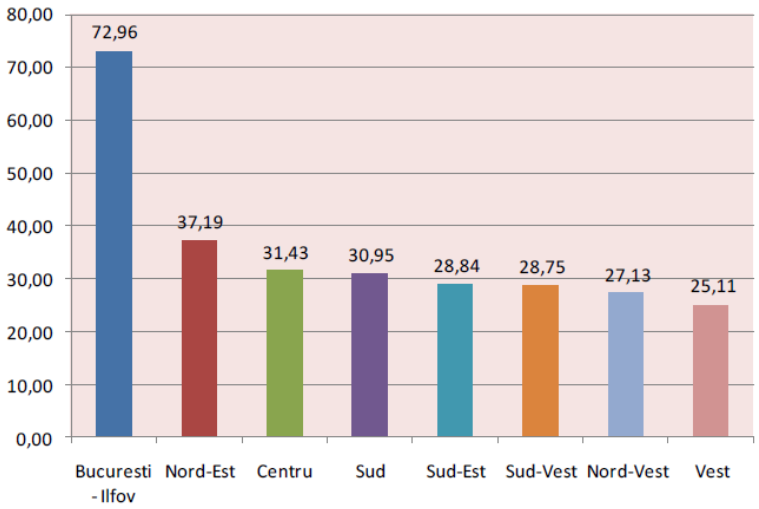

Fig. 1 Level of innovation in the regions of Romania
Source: INOBAROMETRU, 2011

The evaluation was based on five factors of innovation: potential leadership of innovation, the potential for knowledge creation, innovation capacity and integration into a relational system, performance of innovation activities and intellectual property.

Each factor has been split into sub factors characterizing obtaining a total of 16 sub factors of innovation, and for each sub factors have been assigned specific evaluation indicators. Also another study mention: "Generally Romanian industry, and Romanian SMEs do not innovate enough". The study, Identifying Potential Cluster-Type Economic Agglomerations within Maramures County ((Popescu Delia Mioara, Romania), mentions that in Maramures, North-West Region, Romania prevail the SMEs.

Based on the results of the two studies mentioned above and considering that the North West Region of Romania, in which Maramures county is included, was assessed at the bottom of the rankings we considered necessary the description of the phases and steps for an innovation process. This description is particularly useful for SMEs wishing to gain access through innovation and which does not have a culture in innovation to be able to apply the classical innovation models. (example: Joe Tidd, John Bessie Keith Pavitt, 2005 Managing Innovation).

3 Innovation Process

The innovation process represents the totality of activities inter-correlated and inter-dependent in order to implement an innovation.Schumpeter defines the innovation as the totality of

modifications in order to implement and use the new types of products, means of production and transport, markets and forms of organization of the production process. According to Schumpeter's beliefs, innovation represents the basic source of profit. He asserts that, essentially, the profit represents the result of achieving new combinations, and without development there is no profit and, conversely, there is no development without profit (Schumpeter, J.A., 1934).

The innovation of products refers to producing goods with characteristics or possibilities of being used, which differ significantly from the products achieved previously.
Depending on the level of renewal the innovations are (Oslo Manual, 2005):

- Incremental innovations involve minor improvements of the existing products, services, processes and business models. Generally, the incremental innovation is not very expensive or very risky, and its aim consists in maintaining the position gained on the market.
- Radical innovations involve the creation of entirely new products, services processes, organizational structures or business models. Usually, the processes of radical innovation involve a very high level of risk and costs having a high degree of incertitude and complexity with great impact on the business.

In the context of the innovation management, the innovation process is connected with the innovation strategy (Fig.1).

3.1 Innovation Strategy

The innovation strategy is elaborated according to the global strategy of the company.
The elaboration of the innovative strategy will be realized after the running of an audit on innovation.In elaborating the innovation strategy the following internal and external factors will be taken into account: the company capability to innovate; the culture of innovation; the cooperation between departments; strategic intelligence; market; partners; competitors; legislation.
The components of an innovation strategy are: vision, objectives, methods to achieve the objectives, setting of necessary resources, setting the terms of the objectives.

3.2 Phases and steps of the innovation process

The innovation process is a complex process representing the road from idea to business. This process includes a series of stages and steps that will be described in figure 2.

Phase I

The management of innovative ideas includes two steps (Lobonţiu M., Big R., Lobonţiu G., Coteţiu R., Ungureanu N., 2008*)*:

- identifying and aggregation of innovative ideas
- and assessing and selecting the innovative ideas.

The opportunities for emerging the innovative ideas are (BS 7000-2:2008: *Design management systems)*:

- From activities of research and development;
- The need to face competition;
- Providing sustainable development;
- Carrying out social or environment responsibilities;
- Counteracting competition, degrees of „novelty";

- Need to comply with the legislation in force;
- Discovery from research;
- Development of new technologies;

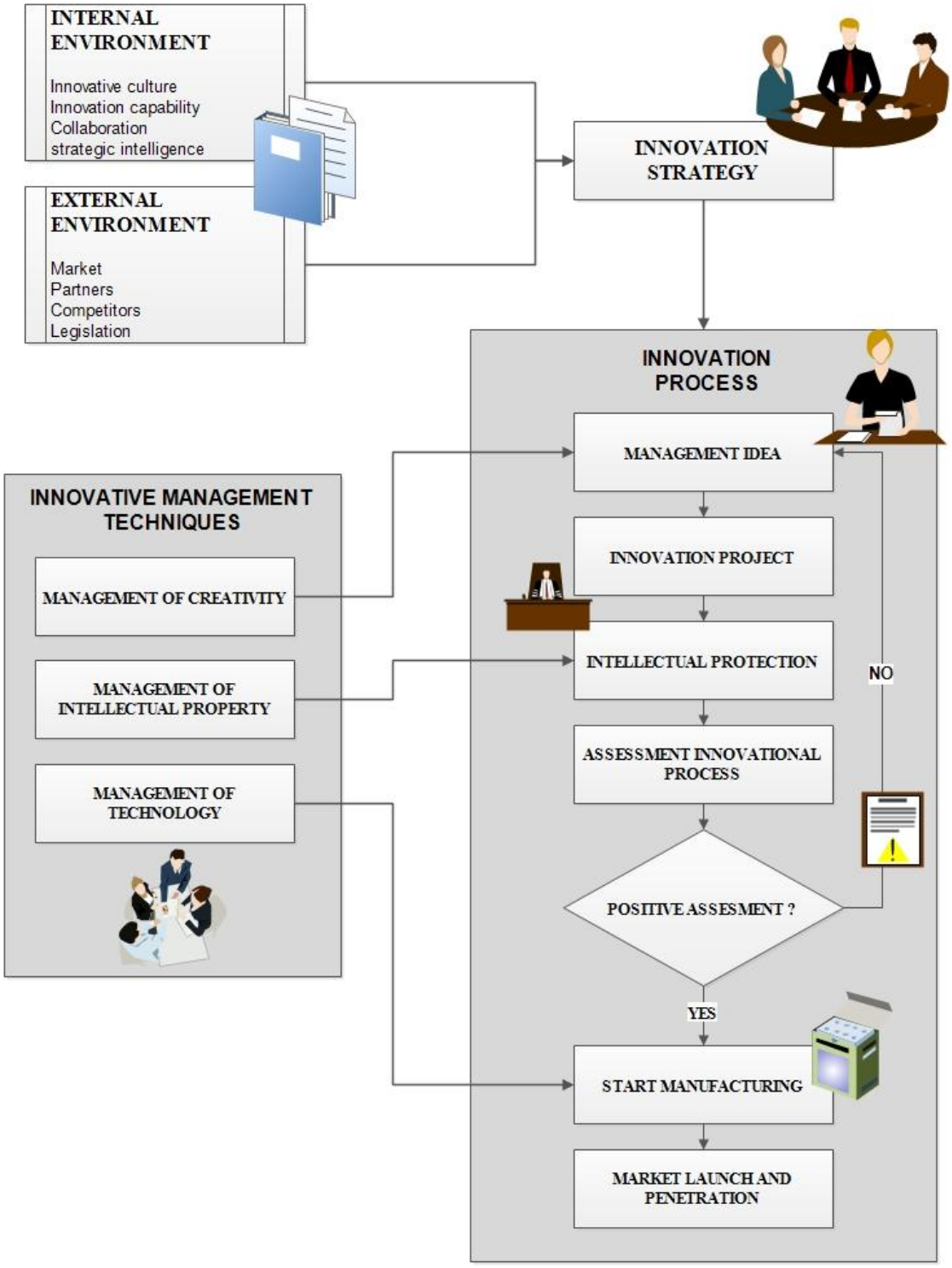

Figure 1 Innovation process
Source: authors' own compilation

- A new way of applying technology which may lead to an innovation;
- Company experience;
- Problems, flaws or deficiencies of the existing products;
- Loss or refusal of orders;
- Cooperation with research units, with universities, with scientists or advisors.

Not all the collected ideas will become innovative projects. The literature recommends methods of selecting ideas, such as innovation funnel and the method based on assessment criteria's.
The methods based on criteria of evaluation and selection of ideas will take into consideration the following aspects: complying with the company innovation strategy; the level of novelty introduced; the legal aspect; normative aspect; sustainable development; special factors; expected benefits; possible future scenarios;technical feasibility; resources availability.
The selected ideas of innovative business will be turned into innovation projects.

Phase II

Management of innovation projects

The management of products at the conception level must counterbalance four key factors: product specification, the necessary time for achieving it, the costs and the risk (BS 7000-2:2008).If the company develops simultaneously several innovation products, the integrated management of the projects portfolio is recommended, while taking into consideration the following aspects: global monitoring of the projects; optimization of common resources.
The project of innovation depending on the capability of the company can be developed as shown below:

- With the company own resources;
- By resorting to external sources (purchasing turnkey projects, buying licenses);
- Or combinations between internal and external resources (partnerships, alliances or fusions).

The steps of the innovation project are:

- Initializing the project;
- Planning the project;
- Feasibility study;
- Actual execution of the project.

The following **guide lines** will be established for each step:

- The objectives and the expected results of the step;
- Modalities of carrying out the objectives;
- Nominalization of the responsibilities;
- Establishing the necessary resources;
- Deadlines;
- Methods for risks mitigation.

Utilization of the tools of innovation management as appropriate (creativity management, management of intellectual property, technologies management, collaboration management).

Phase III

The intellectual protection

At this stage the protection of developer property rights and the assurance of public visibility are realized. In large companies which develop simultaneously a number of innovation projects, the introduction of management intellectual property it is justifiable. Counselors with intellectual property are involved in this process. Small and medium-sized companies which do not afford hiring counselors on industrial property, appeal to specialists from units of technological transfer. In order to achieve intellectual protection, intellectual property laws of the country or geographical region will be taken into consideration (eg the European Union) in which it is intended to protect the invention or creation made in question (Oslo Manual, 2005).

Phase IV

The assessment of the innovation process

The added value defines the efficiency of the business developed through innovation. The performance of the business developed by innovation will be observed by: sales revenue, profit, company efficiency (resources economy, time economy). The result indicators are: rate of revenue growth, rate of operational profit, rates of profitability. If the innovation result is not efficiency we return to a previous stage to try improving innovation.

Phase V

The start manufacturing

Involves the following steps:

- Design and development of the production process;
- Assessment of technology;
- Product specification as support for consumer;
- Planning and monitoring the life cycle of the product resulted after the innovation process.

Before the start of manufacturing and the launching on the market, the producer assumes the manufacture of a small number of products which are launched on the market in order to be tested. If the reaction of the market is positive then the move to mass production is proposed.

Phase VI

Launching on the market

Marketing has an important role during this stage. Fernez-Walch, S. and Romon, F. consider that the marketing has as its main function the capitalization of the product or of the service obtained through innovation (Sandrine Fernez-Walch and François Romon, 2009).

Launching on the market involves the following steps:

- Verifying the situation of intellectual property on the target markets, as compared with the objectives of intellectual property, which have been expected initially;
- Developing the marketing and sales plan;
- Offering assistance for clients
- Supplying feedback from the clients.

4 Conclusions

- In conditions of permanent competition, a company based on developing products, cannot assure its future unless it gives importance to innovation.
- The innovation process is carried out according to Innovation Strategy.
- The innovation projects represent the basic part of the innovation process.
- The results of the innovation process will have a high success rate if they are coordinated according to the methods of innovation management.
- The model and the methods proposed within the study and presented in the paper constitute a working tool for small and medium-sized companies that are at the beginning of implementing the innovation management.

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