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**INNOVATIVE MANAGEMENT: EXPERT ESTIMATION
METHODS IN IDENTIFYING AND EVALUATING
BREAKTHROUGH INNOVATIVE IDEAS**

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Abstract

The study is aimed at identifying the applicability of expert assessment methods to the process of generating and selecting ideas in radical innovative activity. This activity is connected with a high degree of uncertainty and necessity to develop extraordinary ideas and solutions for implementation of radical innovative projects. As a rule, in contrast to supporting innovations, implementation of radical innovations is associated with the organization and going of the project team above its core competencies. In other words, they have to act in a hardly-investigated direction. In such conditions, the role of analytical methods, based on the availability of a sufficient amount of accurate data in the field of marketing, production and logistics, is markedly reduced. The need to attract extensively experienced in innovation experts, who are able to reveal advantages or disadvantages of extraordinary ideas and proposals, based on intuition and through the application of creative efforts, to give an objective assessment of these ideas potential, come into sharp focus. It was found in the study that certain expert methods can have a beneficial effect on certain aspects of the ideas generation and selection for radical innovation. In particular, it has been established that the “court” method is effective in fulfilling potential of the fundamental ideas of radical innovations, and the “brainstorming” method is useful for developing extraordinary solutions of technical problems having arisen during implementation of innovative projects. The inefficiency of combining expert methods for formulating an initial problem is solved in radical innovative projects.

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1. Introduction

“Method of expert estimations is a specific method of obtaining information about an object with the help of specialists - experts in a certain field. Expert estimations are opinions of specialists on any of the problems that are in their area of competences.” These opinions are collected during expert surveys. Revealing expert estimations is necessary when analyzing the most important and significant aspects of the problem under study (Kabysha, 1998).

Formal mathematical and statistical methods are not universal means of solving all problems arising in marketing and management. If marketing research is more oriented to statistics and accurate data, then to evaluate innovative ideas, it is difficult to do without the participation of qualified specialists - experts knowing the situation in the relevant markets, the strengths and weaknesses of the company and its competitors, and experienced in implementation of dozens of projects.

This study examines the applicability of methods only to the process of generating ideas in radical innovation, both at the initial stage of generating fundamental ideas of innovation, and at subsequent stages in solving design technical problems.

Radical (breakthrough) innovations are products, processes, or services that have either unprecedented properties or known, but significantly improved, characteristics in terms of performance or price. These radical innovations create such significant changes in processes, products and services that transform existing markets and industries or create new ones. Improving (incremental) innovations are minor, non-revolutionary changes, largely predictable and predetermined by existing knowledges, products and technologies (Ivaschenko, 2006).

Methods of expert estimations can be classified according to the following criteria:

- According to coverage: individual and group;
- According to character of estimations and further result processing: quantitative and qualitative estimations;
- According to opportunities for opinions exchange: anonymous surveys and group discussion..

2. Problem Statement

When applying the given method of estimating breakthrough ideas we should take into account several important factors.

Large entrenched companies very often face difficulties when trying to implement breakthrough innovative projects. Best of all, this issue was revealed by Clayton Christensen in his famous book “The Innovator’s Dilemma”. According to him, the overwhelming majority of innovations are developed and implemented by acknowledged leaders of the industry. However, such companies never offer disruptive innovations and poorly cope with them. The main reason for this failure is that the business processes of these companies are set to incremental innovations, constantly evolving to effectively solve oft-recurring problems and challenges. Radical innovative projects are too specific and the tasks arising in the course of their implementation differ from the tasks that employees had to deal with earlier (Christensen, 2016).

The consequence of the described problem is that the criteria for evaluating ideas, used by experts to evaluate incremental projects, will also be used to evaluate breakthrough, radical projects, while they should differ significantly, and there are the following reasons for this:

Firstly, experts are more accustomed to focus on already known consumer preferences, which were revealed in surveys, marketing research and their own organizational experience. However, revolutionary innovations are not aimed at satisfying existing ones, but often at creating new needs and markets. Epy examples of such innovations are tablet computers that have already gained high popularity, combining the power and functionality of laptops and the convenience and mobility of smartphones, or e-books that have a number of undeniable advantages in comparison with traditional books. Though, before their market appearance, there was no any demand for these product categories, although there were technical opportunities for their creation for a while.

Secondly, the consensus decision of the expert committee plays a negative role in making extraordinary decisions as well. The difficulty is that, not all experts are able to see the potential opportunities of a promising and original idea, and each expert has his/her own vision of its prospects and ways of realization. It seems highly unlikely their consensus in approval of such ideas. Peter Drucker, a well-known management theorist, briefly commented on the inadmissibility of such an approach: “If you have a worthwhile innovation, do not look for a compromise” (Depree, 2009; Stamm, 2008)

Thirdly, the reputational factor plays an important role for experts in decision making. Due to the fact that the probability of successful implementation of breakthrough ideas as a whole is rather low as well as the costs of radical projects failures may carry notable negative consequences for organization. In order to avoid responsibility for such results, members of the expert commission may not approve promising extraordinary offers.

Thus, these factors should be taken into account when evaluating the effectiveness of each of the methods of expert estimations.

3. Research Questions

1. What are the benefits of expert methods in developing and evaluating ideas for radical innovation?
2. Which methods of expert estimations can effectively cope with the task of defining and objectively evaluating breakthrough ideas?
3. What can be add to enhance the benefits of the given methods in term of a radical innovation process.

4. Purpose of the Study

The aim of the research is to study the applicability of expert estimations methods in generating and evaluating innovative ideas, taking into account the peculiarities of the radical innovation process. The impact of the methods on the three key components of this process has been studied: the statement of the initial problem, which solution should be a radical innovation; generating a foundational idea for radical innovations; and generating ideas for solving technical problems arising in the subsequent stages of radical projects.

5. Research Methods

To determine effective expert estimations methods of breakthrough ideas, the most common and recognized methods have been analyzed in order to correlate the characteristics of these methods with the peculiarities of the creative process of radical innovation.

6. Findings

To start, we consider the individual methods of expert estimations.

The method of “scenarios” is one of the methods of expert estimations, which allows to give the picture of the researchable object in the future based on current situation. It contributes to the development of solving the problem based on identifying all possible obstacles and the detection of serious disadvantages. Scenarios are based not only on reasoning, but on the results of technical or statistical analyzes, characteristics and indicators of the object of study as well (Shevchuk, 2017).

In relation to radical ideas, an expert offers several scenarios for the development of events in the implementation of an innovative project, presenting the results, both in qualitative and quantitative form. We suppose that this method should be applied only as a supplement to other methods, since it focuses more on logic and quantitative measurement of risk, income indicators. The creative and intuitive components in this process are of greater importance, as experts have to think in a hardly-investigated direction, and accurate data are not enough for analytics.

The main feature of the interview method is that the interviewer and the expert are in a direct contact. The vector of the conversation is specified by the interviewer on pre-arranged questions regarding the prospects for further development of the forecasting object. He/she is a leader in conversation. The expert acts as a source of forecast information.

A significant disadvantage of individual assessment methods is that they exclude the possibility of a continuous views exchange between experts that is necessary for experts to form a more holistic view of breakthrough ideas and innovative projects.

Among group expert estimation methods, the simplest and the most traditional one is the method of discussions, during which experts develop a unified group opinion and approve the corresponding proposal through discussions. This method is simple in implementing and can be quite effective in solving routine tasks. To disclose the strengths and weaknesses of suggested ideas fully and methodically, certain rules should be elaborated for discussion, regulating time, the order of each expert’s speeches and other parameters. Nevertheless, in this method the discussion is more spontaneous.

Another weak point of this method is that the opinions of participants, having a higher rank, authority, or insistence, will be more actively supported, even if they are wrong.

In order to avoid this mistake, expert’s quantitative estimates are used in most cases. Ideas are evaluated according to several parameters; each of them is estimated by score points of an expert. Then, all experts points for each idea are summarized, and, as a result, those who get the highest score are selected. However, this approach does not solve the problem, as this solution is consensus as well. As it has already mentioned, it is not suited for selection of breakthrough ideas.

The brainstorming method is quite common. Participants discuss complex problems and propose various suggestions and ideas for solving them during a session. Then participants should develop their

ideas as much as possible, combining them with the ideas of other participants. At the final stage, the best ideas are distinguished through expert estimation. The experts are analysts who understand the essence of the problem and the objectives of the study. The group usually includes representatives from various areas of organizational activity - marketers, financial experts, R & D employees, and each conducts an assessment in accordance with its sphere of competence.

This method is rather effective in solving problems arising during the implementation of radical innovative projects, allowing you to generate numerous extraordinary ideas. The most important advantage of the method is that with the right approach, a synergy effect is achieved from the intellectual and creative efforts of a group of people.

To achieve this effect, it is very important that people in the group have different social and cultural backgrounds. It is also important to interact over the problem of people with various types of thinking - abstract and logical. There was a study, conducted to identify the factor of ethnic diversity in a group creative process. Teams were consisted exclusively of Anglo-Americans, as well as teams included representatives of different ethnic groups. The task of the teams was to generate ideas for attracting tourists to the United States. The assessment was conducted on two indicators - feasibility and effectiveness of ideas. According to the study, teams with ethnic diversity showed significantly better results in both indicators (McLeod & Lobel, 1996).

Being effective in solving the problems arising during the implementation of breakthrough projects, this method has a significant drawback in generating initial ideas, embedded in radical innovation. Generation of ideas begins after a clear statement of a problem, which, as a rule, is formulated by a personnel manager. On the other hand, in radical innovation the correct formulation of the problem is often a much more difficult task than the subsequent stage of generating ideas for its solution. Often, the problem is posed on the basis of an analysis of marketing research, but breakthrough ideas are a solution to a problem that, as a rule, has not been formulated by anyone before.

Thus, it is necessary to provide conditions for an active exchange of views between experts, as well as to give opportunity to express critical or approving feedback about ideas from their side. At the same time, the right of the final decision on approval or rejection of the idea should be assigned to an individual - a professional with relevant professional qualities, and, just as important, having sufficient experience of participating in the implementation of radical innovative projects.

In this regard, the "court" method is interesting. The process takes place in the form of a game, in which the team of experts is organized in accordance with the rules of the judicial proceedings. "Lawyers" advocate for ideas, putting forward arguments in their favor, while the opposite side criticizes them. Having weighed the positive and negative sides, a participant, who acts as a judge, makes the final decision on whether to accept or reject the innovative idea (Lukasevich, 2010).

This method most closely matches the goal of objective estimating breakthrough ideas, which in the future could turn into a radical innovation. In this case, the effectiveness of the method depends on the correct organization of the process, the main factor in which is the correct selection of participants. On the other hand, this method does not solve the problem of generating breakthrough ideas, for which, first of all, the correct formulation of the problem is necessary.

7. Conclusion

Thus, due to the analysis of expert estimations methods, we have identified which of them can have a beneficial effect on the process of generating and selecting ideas in the framework of radical innovation.

The brainstorming technique is useful for solving technical problems arising during the implementation of a radical project, but it is less useful at the project initiation stage, as the mental activity takes place strictly within the framework of a given perspective formulated by the administration.

Applying the “court” method with proper selection of participants and organization of the event allows to conduct objective assessment of the breakthrough ideas underlying radical innovations, as it allows to maximize the positive and negative aspects of ideas, but final decision is in the competence of not a team, but an individual expert, the most appropriate to this role.

We also made sure that the studied set of methods does not allow to solve the problem of formulating the initial problem, for which solution the ideas are generated. The solution of this task is a poorly studied issue in the field of management and innovation, for which it is required to develop quite different methods.

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