

Forecasting Tools and Innovation in Management

~ Ph. D. **Cristina Bolcaş** (*University of Bucharest, Faculty of Business and Administration, Romania*)

E-mail: cristina.badeabolcas@yahoo.com

~ Ph. D. Associate Professor **Vladimir-Codrin Ionescu** (*University of Bucharest, Faculty of Business and Administration, Romania*)

E-mail: vladimir-codrin.ionescu@faa.unibuc.ro

Abstract: *The evolutionary trend of the global economy brings to the forefront the need to forecast and introduce new modalities to innovate strategic management systems focusing on the preoccupations regarding the continuous modernization and improvement of the strategic variants of coordination of the organization. In organizational context, innovation has various materializations, it includes both product and technology renewal, but it also takes into account organizational changes or the application of new business models. Applying such changes may have effects on quality and market share, ensuring improved competitiveness.*

Keywords: innovation, innovation in management, organizational management, forecasting tools in innovation

JEL Classification: L21, M20, O31

1. Introduction

Getting the success of an organization on an ascending line constantly requires the forecasting of specific tools and the initiation of an innovation process, which is only possible with an efficient and sustained innovation management. Many research and development projects start from an intuition and many times a lot of money is spent on development before the serious problems of the innovation project are raised: Has it already been done? Is this information useful? Does it add quality and efficiency to the market?

The forecasting and the issues related to innovation in management have led to the definition of its own set of processes, practices and tools, which is a new paradigm of approach, characterized by the application of specific models and rules.

“Every organization – not only the business organizations – needs a basic competence: innovation” [6]. Currently, at a time marked by complex transformations, there is an increase in the interest for innovation, as a way of sustainable growth of the organizations, but also of the society.

2. The concepts of innovation in management

The concept of innovation defines synthetically the introduction of what is new to achieve better results.

“The global process of technological and commercial creativity, the transfer of a new idea or a new concept to the final stage of a new product, process or service activity accepted by the market.” [13]

Peter Drucker says innovation is “a change that creates a new dimension of performance”.

According to Dex [12], inventing means “making a change, introducing a novelty into a domain, into a system”, while innovation means “introducing, adopting, propagating an innovation”.

Innovation is not limited to the exploitation of an invention, but involves the application of new ideas, whether they are inventions or not. Thus, as regards the degree of novelty of ideas, [13] three types of innovation are distinguished: an innovation that may be new to the organization, new on the market, or it may be an absolute novelty.

The concept of innovation implies a broader vision, in connection with creative processes that aim to find new solutions and materialize them in various forms, through the expression “Research & Development and Innovation”.

In the 1930s, Austrian economist Joseph Schumpeter distinguished five innovations cases: manufacturing new products, introducing new production methods, opening up new outlets, achieving a new form of organization, discovering new sources of raw materials. [2, 11]

According to the Organization for Economic Cooperation and Development (OECD), the following four categories of innovation are differentiated: [12]

- product innovation: is the creation of a new or improved product in terms of technical and functional characteristics, components, materials, ease of use or other functional features;
- process innovation: refers to the development of a new or improved production or delivery technology in terms of working methods and equipment;
- marketing innovation: is the introduction of a new marketing method, a relevant

change in the appearance, packaging, distribution or promotion of the product;

- organizational innovation: refers to the implementation of new organizational and management methods, with effects on the business process and the company's external relations.

The trend in recent decades is to increase the share of large-scale changes that integrate technical, organizational and social innovation.

The most suggestive examples are the transformations generated by the emergence of the Internet, which has led to the development of a new type of socio-human communities, providing the main support for the global expansion of the "network-type" organization. The new social organization, developed especially at the virtual level, has increasingly visible effects in the sphere of economic decisions, competition on various markets and global economy. [7, 9]

Numerous publications point out that the most successful companies in terms of innovation are those whose organizational structures favor the development of knowledge through formal research & development processes, but also the development of knowledge through experience and interaction with employees, customers, suppliers and other parties concerned.

Davila and his collaborators mention the creation of an innovation network beyond the boundaries of the organization among the basic principles of innovation management. In their view, "the effective leadership of the partnerships developed within the company, as well as externally, with the customers, suppliers, consultants and all those who can help the organization to be innovative is a key competence in innovation" [4,5].

In a recent study [10], the authors identify five types of collaboration with reference to innovation.

The first type, internal collaboration, refers to the participation in innovation of several entities, individuals or departments within the organization.

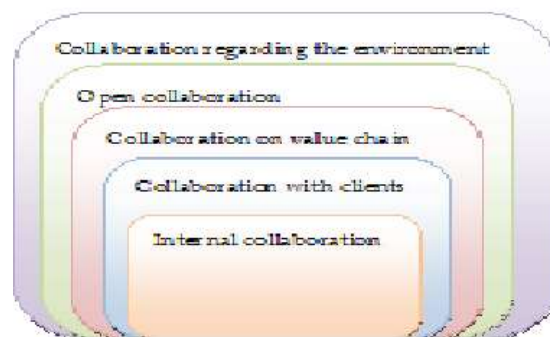
It is necessary, at the same time, to interact with individuals or entities outside the organization, the most important type of external collaboration being the collaboration with the clients.

The third type refers to networks that include suppliers and other partners on the value chain.

The collaboration to innovation also includes the participation in the generation of ideas of any company or other interested party (open collaboration).

The last category involves collaborating on environmental issues and integrates community structures and representatives and other environmental protection structures.

Figure 1: Forms of collaboration for innovation



(Source: adapted after Thomas & Wind, 2013)

3. Forecasting tools in innovation management within the organization

Forecasts are educated assumptions about future trends and events. Forecasting is a complex activity because of factors such as technological innovation, cultural changes, new products, improved services, stronger competitors, shifts in government priorities, changing social values, unstable economic conditions, and unforeseen events. Managers often must rely on published forecasts to effectively identify key external opportunities and threats. [1]

Sometimes organizations must develop their own projections. Most organizations forecast (project) their own revenues and profits annually. Organizations sometimes forecast market share or customer loyalty in local areas. Because forecasting is so important in strategic management and because the ability to forecast (in contrast to the ability to use a forecast) is essential.

Forecasting tools can be broadly categorized into two groups: quantitative techniques and qualitative techniques.

Quantitative forecasts are most appropriate when historical data are available and when the relationships among key variables are expected to remain the same in the future. As historical relationships become less stable, quantitative forecasts become less accurate.[3]

The biggest problem for companies is finding the starting point. This is especially the case for smaller firms that do not dedicate sufficient resources to the exploration stages. Practical examples of starting points can be:

- operating improvements in existing company products,
- purchasing an agency to import a product, thereby gaining market knowledge,

➤ entering into a partnership with a marketing firm,

➤ making a survey among the clients of the organization to see what products they expect in the future.

Another approach is to observe the growing market trends, which may be caused by factors such as:

- high labor costs,
- environmental considerations,
- new or improved safety rules,
- market niches for special versions of products that the national company can make [1, 9, 11],
- import analysis and statistics to see what products are imported in the country and which ones could be replaced by locally manufactured goods.

No forecast is perfect, and some forecasts are even wildly inaccurate. This fact accents the need for strategists of innovation to devote sufficient time and effort to study the underlying bases for published forecasts and to develop internal forecasts of their own.

Key external opportunities and threats can be effectively identified only through good forecasts. Accurate forecasts can provide major competitive advantages for organizations. Forecasts are vital to the strategic-management process and to the success of organizations.[8]

4. Strategies for the application of innovation in management

The materialization of the innovation process within organizations is extremely diverse in relation to the forms and objectives of innovation

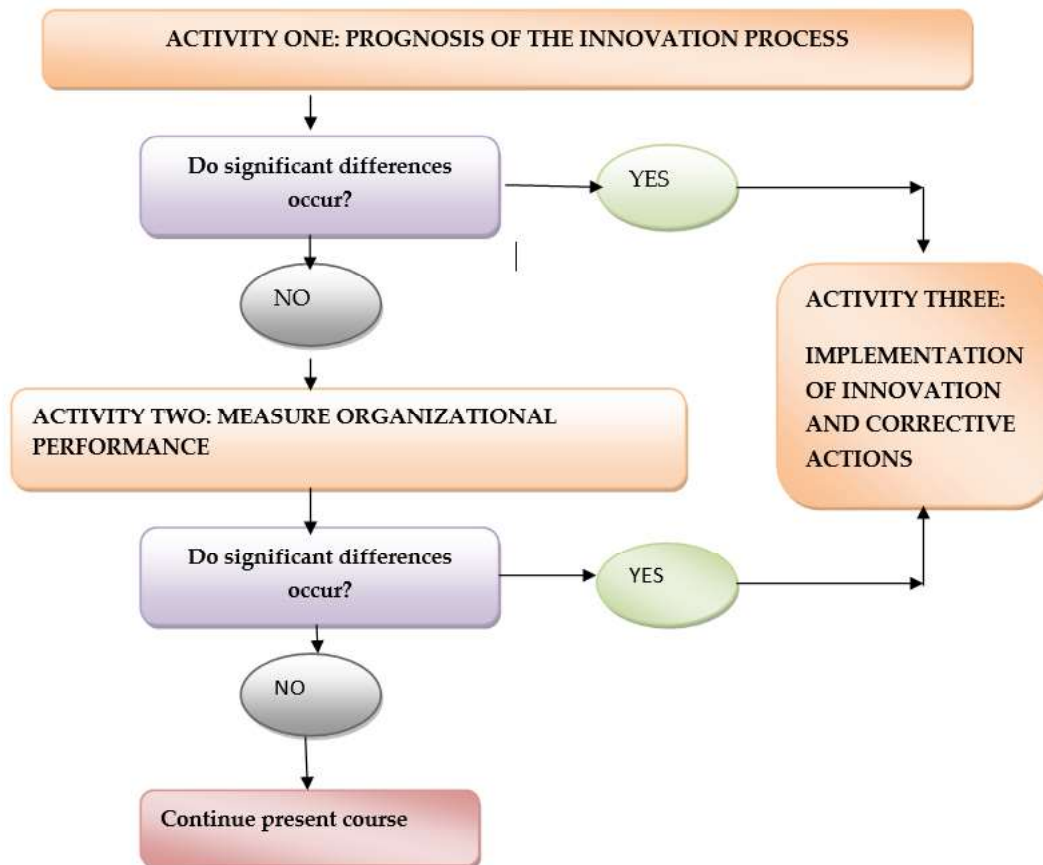
Relevant aspects of innovation refer to the innovation application strategy [10]:

Activity one: Prognosis of the innovation process including the generation of ideas; defining the concept of product or service; feasibility analysis by selecting ideas, methods and techniques.

Activity two: Measurement of organizational performance through: constructive development; achievement and prototype verification.

Activity three: Implementation of innovation and corrective actions including: market studies, marketing, creating the production system, ensuring the human resource.

Figure 2: Innovation application model



(Source: adapted after David, Fred R, 2011)

Innovation improvements that affect consumer and industrial products and services shorten product life cycles. Companies in virtually every industry are relying on the development of new products and services to fuel profitability and growth.

Surveys suggest that the most successful organizations use an innovation strategy that ties external opportunities to internal strengths and is linked with objectives.[8]

Innovative management policies can be implemented through:

- Highlighting the product or service and improving it.
- Accentuation of basic or applied research.
- The existence of a team of leaders in innovation and research.
- Developing automation procedures.
- Allocating financial resources for research, development and innovation.
- Obtaining performance in research & development and innovation within the organization or concluding agreements with other organizations.

- Use of researchers from universities or the private sector.

5. Conclusions

The emphasis on innovation in management is one of the distinctive elements of recently implemented strategies and policies, both within organizations and at national and regional level.

Finding and introducing what is new into organizations involves the existence of specialized compartments, laboratories or even organizations creating innovation.

Modern innovation systems are characterized by extensive collaboration with other organizations, the trend being the development of network structures. This new approach involves addressing the research & development activities in connection with the business environment and other structures of the society that need to apply the new solutions, with the goal of gaining benefits for organizations, for the society, for people.

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