

Management of innovation processes in the organization

Naqib Daneshjo¹, Róbert Rehák¹, Peter Drábik¹
 Ekonomická univerzita v Bratislave, Slovensko¹

naqibullah.daneshjo@euba.sk, robert.rehak@euba.sk, peter.drabik@euba.sk

Abstract: In the changing business environment and the global understanding of the market environment, the driving force of which are increasingly demanding customer requirements, the growth of supply and services, higher competition, technological development, globalization of business, innovation is a means for the implementation of constant changes. Nowadays, success is achieved by integrating innovation into business processes, and creativity of human resources in various professions, for example, technologists, designers, economists and optimizers, which is replaced by innovation engineers, business and marketing innovators, thought innovators, innovation managers, etc., is also important for productivity support.

Strong and agile companies thus gain a leading position on the market. By connecting the knowledge of employees, innovation strategy and business management, a management model of the innovation process was created, which takes into account the diversity of types of organizational structures of enterprises and uses the elements of the innovation climate of the enterprise. An important part of managing the innovation process is determining the elements of the innovation climate, through which innovative ideas from employees are supported and their dissemination and implementation. They must be managed on the basis of the chosen type of organizational structure of the company. By properly setting the elements of the innovation climate and aligning it with the organizational structure, enterprises can manage their processes and get more innovative ideas for implementation, thus increasing their innovation performance and achieving better competitiveness in the market.

Key words: INNOVATION PROCESS, INNOVATION STRATEGY, COMPETITION, GLOBALIZATION, INNOVATION ENGINEERING

1. Introduction

The basic premise of a successful company is its constant progress against the competition on the market, it follows that the innovation process in the company is one of its key attributes. The manager is responsible for the innovation process in the company, who must consistently pay attention to which decisions are beneficial for the company and, conversely, which decisions can lead the company to decline and loss of prosperity. The effectiveness of management decisions lies in how intensively and successfully they can respond to the needs of the market and the current state of the company's environment. The preparation and gradual implementation of innovative changes is called the innovation process. Its result is innovation as a realized, used and above all positive change. The task of innovation processes is to purposefully influence the reproduction of all business in accordance with the growing needs and demands of the customer and the market as a whole. The innovation process is the process of creating and spreading innovations. We understand innovation processes in business activities as the implementation of individual innovations or their sets, which ensure quantitative and qualitative changes in products, processes and the structure of the production and technical base with all economic and social contexts. Innovation processes penetrate deeply into the production-technical structure of the business sphere and thus into the process of its reproduction. For example, a new technology of any nature in industry usually affects the relevant branch of engineering and electronics and causes a certain need for raw materials and energy, is associated with investments, movement of labor forces, which further causes a chain of needs. In a broader sense, innovation processes are also large programs and projects of economic development, scientific research activity, significant actions that affect the entire business process and the reproductive process within it. In practice, the main place of innovation processes are companies, where innovations are implemented in products, technologies and other activities. Creation and management of innovation processes are fully subject to business management with all its principles. The innovation process is not random. It is controlled by a specific project or program linked vertically and horizontally in the sphere of implementation.

Improving the management of innovative development in industrial enterprises includes the creation of a new market infrastructure that would stimulate and support this mechanism, as well as perform its direct control. Therefore, the problem of rational and effective use of innovative products is of particular importance in the current socio-economic conditions of our country. It also requires the latest approaches to building a

management system for innovative development in companies, improving the quality of the innovation process in companies and increasing their investment and innovation attractiveness.

2. Methodology of creation and management of innovation processes of the organization

The analysis and synthesis of theoretical knowledge serve as the basis for the creation of a general model of the creation and management of innovation processes in the company. The starting model for the creation and management of innovation processes in the company (Fig. 1) is also based on the analysis of other models and practical studies and is a general model that can subsequently be elaborated in more detail on the basis of findings from primary and secondary research. From the analyses of theoretical knowledge so far, it is clear that in each type of business there are specific conditions that must be taken into account when creating and managing innovation processes (Fig. 2) and they often change depending on the sector, type of industry, size of the company and length of time on the market etc.

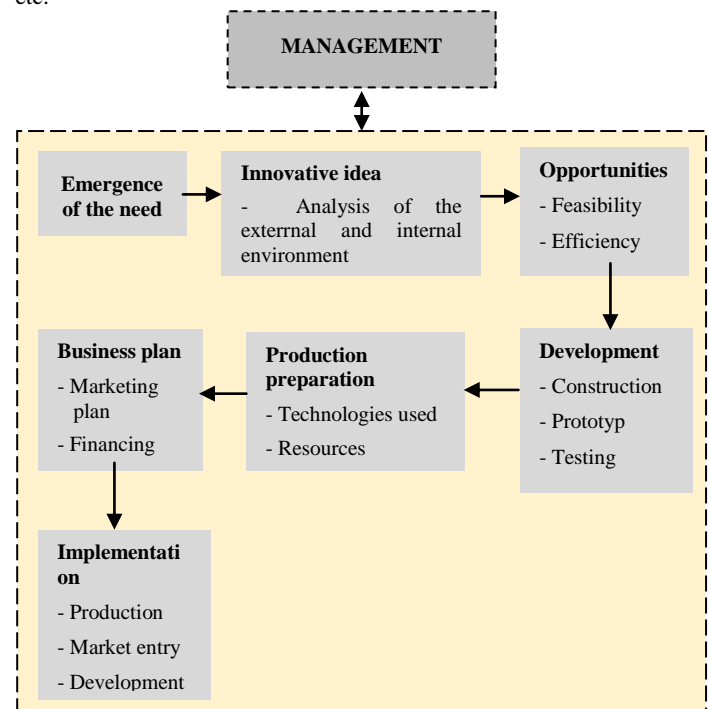


Fig. 1 Initial model of creation and management of innovation processes in the company

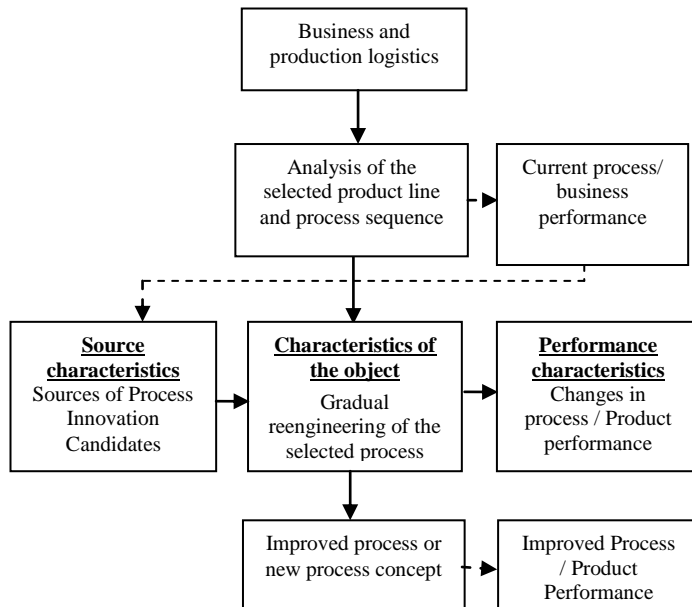


Fig. 2 Basic model of process innovations

Innovation is not only the use of high technology, but also a change in the field of managerial decisions. In order to realize most of the tasks faced by the enterprise, it is necessary to reorganize the enterprise management system on the basis of new management technologies. A company that wants to work flexibly inevitably comes to the need to use innovative approaches. Its essence lies in the creation of such a company management structure in which the personnel is embedded in the business process, which ensures the quality production of the product. Project management methodology plays an important role in building such a system. For this, it is necessary to develop a management system, the basis of which is the breakdown of a complex process into simple components based on a project approach and the construction of a kind of "pipeline" of management. This has a significant impact: work becomes more purposeful, requirements for personnel qualifications are

reduced, labor productivity rises sharply, and the rate of errors is reduced. When designing a model for the creation and management of innovation processes in the company and based on the analysis of the state of the problem, it is necessary to take into account the following criteria [3]:

1. Openness: Flexible work with innovations that come to the company from an internal or external environment. Unused innovative ideas are registered for their possible future use through the corporate information system.
2. Cooperation: an innovation process enabling cooperation with interested parties, which significantly contribute to the improvement of the innovation process and the emergence of successful innovations. These are, for example, research institutions or universities.
3. Management elements: the course of the innovation process in the company should be effectively managed using basic managerial functions.
4. Learning from innovation: the innovation process should enable continuous improvement of its management based on learning from the implementation of the innovation process over time.
5. Feedback: on the individual stages of the innovation process, from which the company can take lessons.
6. Creative thinking: supporting the generation of innovative ideas. Emphasize creativity and creative thinking already when selecting employees and constantly support the development of creativity, for example through training.
7. Information support of the innovation process: provision of necessary information to responsible persons at the right time in the right place.

The proposed model supports working with innovative ideas, which the company acquires through stakeholders and most often from customers, employees and competitors. The proposed model is divided into three phases: creation of invention, creation of innovation, penetration of innovation and the result is innovation as a realized and used change.

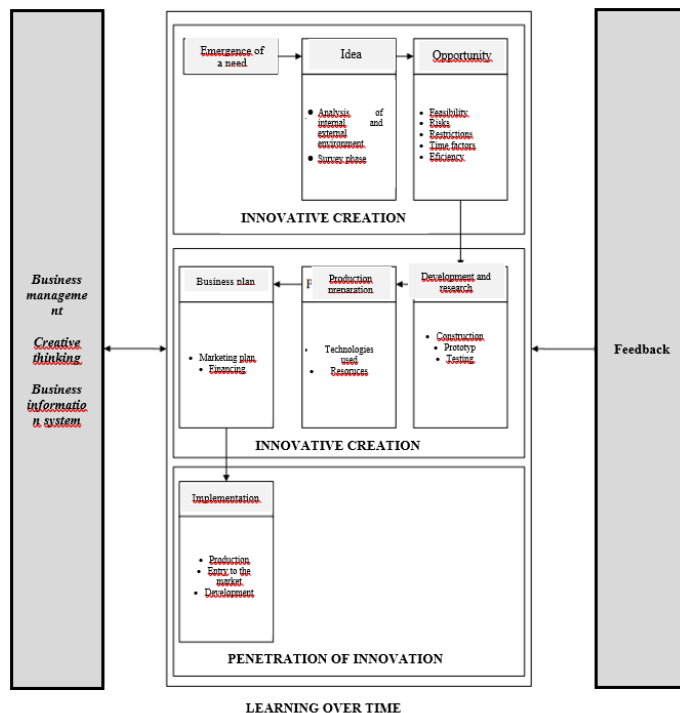


Fig. 3 Model of creation and management of innovation processes in the company [1] [2]

The proposed model of creation and management of innovation processes in the company takes into account attributes such as management of the innovation process, openness of the innovation process in relation to interested parties, the ability to learn from the results of the individual phases in which creativity and feedback are applied.

3. Generating ideas during the standard innovation process

Based on the findings, the generation of innovative creativity ideas during the standard innovation process can be described in detail. R&D employees and group managers have the freedom to pursue their own ideas. If e.g. ten ideas, management will decide on the winning idea according to criteria such as exceptionality, feasibility and potential. Some ideas generated within the department may be presented during an appropriate event. Ideas are generated individually or in teams, and teams are usually from the same department and belong to the same work group. The idea generation process contains several stages and milestones and is a traditional stage-gate process (stage-gate process also referred to as stage-gate process or waterfall process is a technique that is initiated by the needs of the project (for example, the development of new products, development software, process improvement, business exchanges, etc.) that is created either on the basis of new scientific discoveries or on the definition of needs by the market. Process research and development employees generate ideas all the time. If they have an idea, they can promote it only by direct contact with research

and development employees [34, 48]. On the one hand, ideas can come from a specific form of professional training of workers. Efficient and motivated R&D employees thus complete specific training and can work in other departments. These employees are selected by the management. The person concerned from the R&D department will participate of this program and provide feedback about it. On the other hand, management can organize creative meetings with workers and allow R&D workers to have an environment to develop their own ideas. Therefore, ideas and innovations come from three different ways of the standard innovation process:

1. Top-down (top-down) (market pull or science pressure).
2. Expert training.
3. Creative meetings.

Ideas can be implemented into the product development or innovation process. A study may be developed to obtain additional knowledge if the potential of the idea is not clear or if the idea is not directly related to the product. One possibility is to do a feasibility study, which starts with the aim of proving the potential of the idea. Idea generation in the standard innovation process focuses on exploration and exploitation. From top to bottom, ideas are more on the exploitation side because they are based on the customer's wishes or have demonstrated very high scientific potential. On the other hand, research is the goal of a creative meeting and expert training. A standard innovation process is shown in Fig. 4.

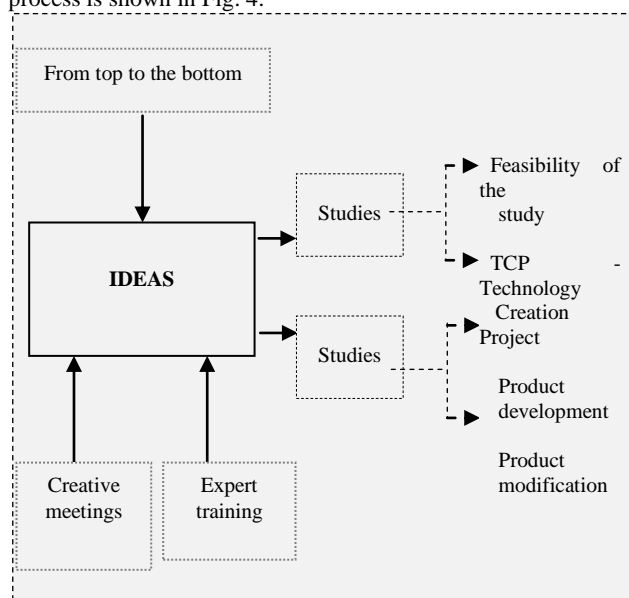


Fig. 4 Standard innovation process

Fig. 5 shows the process of spreading ideas and ideas within the framework of innovative creativity and the standard innovation process.

Innovation is an integral part of the development of a modern enterprise. Many new goods and services appear on the world market every day, but the average lifespan of some of them is very short. Buyers don't recognize them and they disappear from the market as quickly as they appeared. This means that they were not considered innovations, although they were new products based on interesting and original ideas. It is well known that goods and technologies have a limited lifespan. Due to its characteristics, innovative activity should be organized separately from the main production processes. In any case, it is necessary to strive to ensure the organizational flexibility of an innovative company.

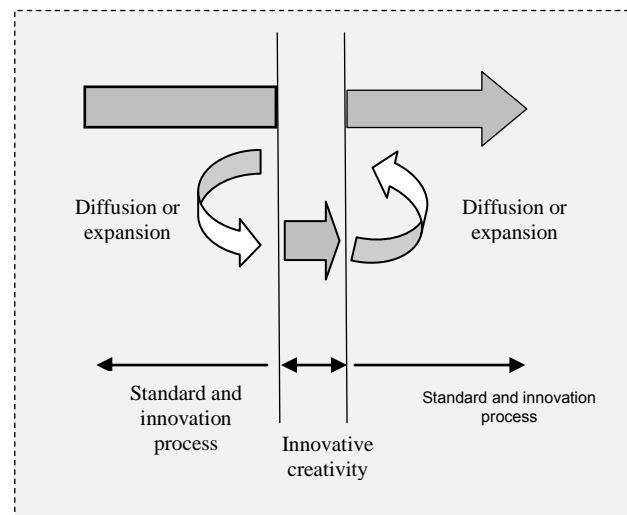


Fig. 5 Spreading ideas or ideas

4. Conclusion

The area of creation and management of innovation processes in the company is an increasingly discussed topic in the field of innovation. Innovations contribute to increasing competitiveness, higher sales of products or higher efficiency. If a business is really interested in innovating a product or service, it must first thoroughly examine its own processes, despite the fact that finding new products or services is more exciting. It is a common phenomenon that many parts in organizations need reengineering of company processes. The creation and management of innovation processes is a very important role for the company and its economic and social growth. Business managers are increasingly becoming aware of the importance and importance of innovation.

Product innovations represent shifts in the competitive position, which nowadays can result in a leading position in the market, even in the entire industry. In order for businesses to be successful in the long term, it is essential that they use their innovation potential to the fullest. Problems often arise that companies often encounter, such as insufficient use of innovation opportunities, the absence of a comprehensive model for the creation and management of innovation processes, the absence of a comprehensive systematic methodology for the creation or management of innovation processes. Therefore, the innovative activity of the company is considered a necessary condition for its growth and competitiveness in global markets. Increasingly demanding customer requirements, increasing competition, technological development and globalization in a changing business environment are becoming a driving force for innovation.

Acknowledgements: This work has been supported by the Scientific Grant Agency of the Ministry of Education of the Slovak Republic (KEGA 029EU-4/2022 and Project KEGA 030EU-4/2022).

5. References

- [1] J. Soviar, V. Lendel, M. Kocifaj, E. Čavošová, *Kooperatívny manažment*, Žilina: EDIS – vydavateľstvo ŽU, (2013)
- [2] V. Lendel, M. Varmus, *The level of utilization of innovative activities of transport businesses in the Slovak Republic*, In: *Periodica Polytechnica Social and Management Sciences*. Vol. 21, No. 2, (2013), p. 83-90.

- [3] B. Bernstein, P. J. Singh, *An integrated innovation process model based on practices of Australian biotechnology firms*. In: Technovation 26, (2006)
- [4] M. Kováč, *Tvorba a riadenie inovácií*. Technická univerzita v Košiciach, Edícia EQUAL, 2007
- [5] Ch. Palmberg, *The sources and success of innovations – Determinants of commercialisation and break-even times*. In Technovation 26, (2006)
- [6] V. Lendel, Š. Hittmár, E. Siantová, *Management of innovation processes in company*. Procedia economics and finance, 23, (2015)
- [7] M. B. Bulturbayevich, *Improving the mechanisms of strategic management of innovation processes in enterprises*. In Archive of Conferences, (2021)
- [8] J. Sundbo, *Management of innovation in services*. Service Industries Journal, (1997)
- [9] S. Ben Mahmoud-Jouini, T. Burger-Helmchen, F. Charue-Duboc, Y. Doz, *Global organization of innovation processes*. Management international, (2015)
- [10] I. L. Popa, G. Preda, M. Boldea, *A theoretical approach of the concept of innovation*. Managerial Challenges of the Contemporary Society. Proceedings, (2010)
- [11] S. Jirásková, *Inovácie a trvalo udržateľný rozvoj*. Manažment v teórii a praxi-on-line odborný časopis o nových trendoch v manažmente, (2007)
- [12] F. Rybár, *Výbrané faktory ovplyvňujúce efektívnosti riadenia manažéra*, Doctoral dissertation, AMBIS vysoká škola, as, Bankovní institut vysoká škola SK, (2009)