

The Classification and Application of Innovation Based on Technological Parameters

Valida Hajiyeve
Department of Energetics
Nakhchivan State University
Nakhchivan, Azerbaijan
validehaciyeve@ndu.edu.az

Abstract—In the article, the main goal of the application of the latest achievements of scientific and technical progress and the use of technological equipment, as well as the formation and use of scientific and technical information resources, is the integration into world information, the creation of the market of information products and services. In terms of the starting innovation activities in the country, the use of scientific and technical information (SIT) resources and increasing the efficiency of their activities, the formation of modern innovative network technologies in the country in order to further facilitate the use of SIT, the formation of the information culture levels of SIT users and specialists are the reasons that affect the improvements of innovation. The goal of implementing a strategy that provides active competitiveness on the basis of advanced technology and through technological improvement of the economy, as well as turning scientific potential into one of the main means of economic growth, is indicated as the main reason for the formation of a balanced sector of innovation activity and an effective innovation system. It is considered necessary to create centers for the building of new products using the achievements of scientific and technical progress.

Index Terms—National innovation, integration, active competition, information resources, advanced technology

I. INTRODUCTION

Nowadays all economic processes are closely related to new technologies and innovations. The most important thing for scientists and developers to understand what kind of innovation should be used in the production, scientific discoveries, in project activity and the creation of new high-tech products, the provision of services and execution of works. In this publication the authors examined the various interpretations of innovation. Materials have been collected by many authors. Methodological approach of innovation was compiled to the definition of innovation and their typology and classification of innovation has been considered.

The paper presents the different definitions of innovation; the objective of the research being that of creating a theoretical model building on the previous work of several authors. The aim of the research is to define the different models, classifications and definitions of innovation. In this article we made use of a wide range of bibliographical sources on innovation, efficiency and also used comparative analysis of innovation definitions. Theoretical concepts were studied as well. The approach was constructed based on theoretical models of innovation definitions and used the technology and market

perspectives. The main methods employed were comparative analysis of definitions of innovation and the creation of a model of innovation. It has been emphasized in the literature that the role of innovation is very important for making decisions regarding investment projects or investments for production. Innovation can bring benefits such as saving time, costs, and products and use them more effectively. Nowadays in the world, innovation is one of the most important factors of economic development, production, creation of a variety of products and in making management decisions. Innovation activity stimulates and has a positive effect also in investment activity.

A. Definition of Innovation

"Innovation consists of a new idea and its creation application to a new product, process or service leading to dynamics growth of the national economy and increase in employment, as well as a generating net profit for the innovative business enterprise. Innovation is never a one-time phenomenon, but a long and cumulative process of many organizational decision-making processes from the generation stage new idea to its implementation stage. The new idea concerns the perception of a new customer need or a new production method. It is formed in the cumulative ever-increasing data collection process entrepreneurial vision. Through the process of implementation, a new idea is born is transformed into a new marketable product or new process and commercialized with reduced costs and increased productivity" [1]. In general, the concept of "innovation" is quite complex and multifaceted, many studies are the subject of its study, but, nevertheless. There is no generally accepted definition of innovation in science. There is three main approaches to term review.

B. Types of Innovation

What is our current understanding of innovation and how many types of innovation do we know? Broadly speaking, innovation landscapes are characterized by fundamental categories such as product, process, organizational, and marketing innovation, explained and theorized in terms of their relationship to technological innovation. However, global challenges and changes in the structure of knowledge production have led to various innovations, and the recognition and classification of such innovations is more complex, fragmented and geographically dispersed than before. The progressive combination

of latent and non-technological innovation, together with the emergence of the fourth industrial revolution, is helping to change our understanding of innovation and its measurement. This paper provides an overview of the most common types of innovation in recent decades, enabling both researchers and practitioners to navigate the complex web of innovation definitions and typologies. Innovation studies are faced with the challenge of finding a comprehensive and comprehensive definition that reflects the importance of innovation and overcoming terminological Babelization and the growing fragmentation of the field of innovation research.

II. CLASSIFICATION OF INNOVATION

When we talk about innovation, we mean creating or changing a product and bringing it to market. From the invention of the wheel to the latest advances in medicine or technology, innovation goes hand in hand with the growth of civilizations.

If we take this concept to the business world, innovation aims to provide effective solutions and evolve to improve the quality of life of customers and society in general. Therefore, the application of innovation can give an advantage over the competition. This is now more necessary than ever, as we live in a changing world where it is important to constantly adapt to new environments and the urgent demands of consumers.

In this respect, the classification of innovation is important when it comes to strategy and process, because it determines where the organization innovates (in the business model, in the end product, in the production process, etc.). To explore this concept in more depth, let's take a look at the main types of innovation available. The Oslo Guidelines on Innovation explain different types of innovation. This guide identifies scientific and technological activities considered innovative and classifies them according to their purpose and degree of change.

A. Types of Innovation by Technology Impetus

Innovations can be classified, for example, by technology push. In other words, these are innovations resulting from new technologies in which new opportunities are sought and applied.

B. Open Innovation

It represents a new strategy in which companies collaborate with other agents of society, such as institutions or other professionals, and follow the best talent in search of new formulas that turn problems into opportunities. In open innovation, corporations make the most of synergies between employees and external knowledge of the market, while in closed innovation other agents of society, such as suppliers or consumers, are not taken into account. This has been the traditional way of managing innovation projects for many years.

C. Continuous Innovation

The goal of sustainable innovation is to create a positive impact on the environment and society through the use

and application of technology. This can contribute to the development of more sustainable cities. For example, climate change is one of the major challenges we are facing right now, and one that we need to address through sustainable innovation in areas such as the circular economy.

D. Social Innovation

Social innovation refers to a set of ideas that effectively solve a social situation and create new relationships. In addition, the solutions in question must be repeatable, scalable and maintainable in the long term. Examples of social innovation can be increasing the capacity of health centers to address all patients, which has a positive impact on society, or reducing the digital divide, educating the population on new technologies.

E. Technological Innovation

Technological innovation occurs when we derive a product or service from new processes or sources of supply. This can happen for three reasons: due to technological development, due to the combination of different technologies or by using the knowledge obtained during the research of product development. Different types of renewable energy sources are examples of this type of innovation. The use of new technologies has made it possible to anticipate energy fluctuations.

III. TYPES AND EXAMPLES OF TECHNOLOGICAL INNOVATION

Within the types of innovation, we will focus on those that can be considered according to the degree of change they involve: incremental, disruptive and radical.

A. Disruptive Innovation

Disruptive innovation is understood as the introduction of new ideas that lead to fundamental changes in processes, services or products that lead to drastic changes in the market, companies and user behavior. A clear example of a disruptive innovation is the wheel, because its use meant a complete change in the habits of the society of the time. In this category, one can find other examples of disruptive innovation, such as the mass production of the first automobile (which disrupted transportation as it was known until then) or the mobile phone (which meant disruption compared to its predecessors). existing landline).

B. Incremental Innovation

This type of innovation is that it arises from an existing project to which significant improvements have been added so that added value is created. Generally, changes are developed through this type of innovation because they are aimed at increasing the efficiency, productivity or competitive differentiation of a previously existing service or product. Another characteristic of this type of innovation is that it does not create new markets because customers or users are already familiar with the service or product in question. An example of incremental innovation is the smartphone and its development with touchscreens, as the product itself, the phone, has not

changed, but significant improvements have been introduced that change its use.

C. Radical Innovation

This type of innovation arises from a completely different value proposition for a service or product and therefore involves a complete break from what was previously defined; in other words, making major changes to what already exists, as opposed to the disruptive nature of creating something that doesn't exist, as we saw above. An example of a radical innovation is the computer, as it replaced the typewriter with innovations in typing software. Continuing with examples from the automotive field, we can include the electric car as a radical innovation: it is a sustainable energy solution with innovative technology. Another example of a radical innovation would be the digital camera, which has grown in popularity since its first prototype in the mid-1970s and replaced traditional film cameras.

IV. ADVANTAGES OF TECHNOLOGICAL INNOVATION

Technological innovation brings with it countless advancements of all kinds. For example, in the business world, it brings the following benefits:

- It reduces costs by increasing the efficiency of processes.
- This simplifies processes due to the above-mentioned increase in efficiency, creates more flexibility and flexibility in their management.
- It increases productivity by allowing you to monitor operations in real time, allowing you to make decisions based on concrete data.

A. Business Model Innovation

A business model (BM) is considered an important tool for innovation, but also a source of innovation in itself, that is, "BM innovation". Many authors point out that business model innovation represents a new dimension of innovation, although it is different from traditional dimensions of innovation such as product, process or organizational [2], [3]. Although firms have always operated according to a business model, they have traditionally followed similar logics to that of an industrial firm that produces a product or service (in relation to its suppliers) and delivers it to customers and collects revenue. These functions are being replaced by innovative business models emerging from firms and, by extension, civil society. Several scholars argue that the Internet, along with other advances in information and communication technologies (ICT), has acted as a catalyst for JV practices and innovations [2], [4], [5].

V. RESULTS

As the literature emphasizes, innovation can benefit everyone economic activity with the implementation of projects; produces new products with new quality and helps to reduce the costs of the production circle. There may also be innovations catalyzes processes and saves time. System, the complex nature of innovation is reflected in complexity and diversity of the concept of innovation. It contains a wide range of innovations

innovations embodied in their knowledge to varying degrees are used in various fields industries and areas of activity to be implemented in different markets, etc. Classification innovation plays an important role because it not only allows for simplification Existing views, but also a means of finding and identifying understudied issues innovation. Laws specific to some types of innovation cannot be specified or .It even has the opposite character, which often leads to other species contradictions in the results of different innovative management theories. Typology of innovations and their classification on different bases, is not significant for the consistent development of criterion parameters innovation must be in management theory, but in practice and management based on innovation. Innovation managers should take this into account in their activities the idea that different types of innovation have their own characteristics development, implementation and dissemination require special management approaches, relevant structures of innovation, its techniques and styles. Experts note certain regularities in innovation management dynamics, sequence, speed of implementation of various types innovation. Such features are widely used in practical management activities dynamics of innovation: Intensity of innovation is the number of degrees of innovation innovations carried out over a period of time. The speed of innovation is the speed of application of innovations after they are first implemented elsewhere. This indicator describes the ability to respond quickly to innovation. Innovation Managers need to know that there are different types of innovation development, implementation and dissemination of its features, requires special management approaches.

REFERENCES

- [1] K. Urabe, J. Child, T. Kagono, and N. K. Gakkai, *Innovation and Management: International Comparisons*, english ed., ser. De Gruyter Studies in Organization. Berlin: W. de Gruyter, 1988, vol. 13. [Online]. Available: <https://worldcat.org/title/18017573>
- [2] R. Amit and C. Zott, "Creating value through business model innovation," *MIT Sloan Management Review*, vol. 53, no. 3, pp. 41–49, Spring 2012.
- [3] L. Massa and C. L. Tucci, "Business model innovation," *The Oxford handbook of innovation management*, vol. 20, no. 18, pp. 420–441, 2013.
- [4] J. Tidd, J. Bessant, and K. Pavitt, *Managing Innovation: Integrating Technological, Market and Organizational Change*, 3rd ed. Chichester, UK: John Wiley, Mar. 2005, aSIN: B011SJLHNU. [Online]. Available: <https://www.worldcat.org/title/managing-innovation-integrating-technological-market-and-organizational-change/oclc/13958000>
- [5] R. Amit and C. Zott, "Value creation in e-business," *Strategic management journal*, vol. 22, no. 6-7, pp. 493–520, 2001.