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THEORETICAL ASPECTS OF INNOVATION DEVELOPMENT

Evelina Šakalytė

Mykolas Romeris University, Lithuania

Ilona Bartuševičienė

Mykolas Romeris University, Lithuania

Abstract

Purpose – Innovation is defined as an economic stimulus and the key factor of scientific and technological progress as well as international competitiveness. Therefore it is essential to identify theoretical conceptions and approaches of innovation development and review the use of innovation value chain.

Design/methodology/approach – analysis of scientific literature.

Findings – Innovation plays a significant role of business growth and is a principal factor of survival in competition and incentive of economic development. The importance of the innovation value chain awareness has been brought out as it significantly contributes to the successful development of innovation.

Research limitations/implications – the theory of innovation in manufacturing sector and service sector has not been distinguished enough yet.

Practical implications – comprehension of innovation concepts and innovation value chain helps to see multiple connections throughout the entire innovation process: from the beginning to the end. The information gained regarding to the innovation value chain helps managers to focus on innovation as a complete product and strengthen weaknesses.

Originality/Value – The topic of innovation was analyzed for few previous decades, however, the decision on the mutual understanding on innovation concept have not been highlighted. The paper reveals the systematic conceptual overview on comprehension of innovation and the importance of innovation development process in today's fast changing competitive market.

Keywords: innovation, innovation value chain, knowledge.

Research type: scientific literature review.

Introduction

Last decades have brought important changes in the international business competition in response to faster pace of innovation and disappearing boundaries in organizational structure. Innovation has been recognized as a highly significant factor and an engine of renewal in today's fast changing and competitive business environment. Innovation, whatever type or extent, has a purpose to create or develop a new product or process that would increase company's profit and strengthen the position in market. Competition is the main reason firm's innovate, therefore different firms innovate differently. Comprehension of 'innovation' is wide and depends on why and where it is being developed in companies, organizations, institutions or systems. In order to succeed and create value, innovating companies, organizations and other bodies have to estimate the tools and resources to achieve expected results. This paper presents the conceptual framework – innovation value chain – which helps to emphasize the strengths and weaknesses in organization's innovation performance. The aim of the paper is to show the theoretical concepts of innovation and to reveal significance of innovation value chain.

The Conception of Innovation

Theoretical and practical understanding of innovation and it's significance for business has been changing and improved during last decades. However, there was no dominated theory and concept of innovation distinguished and no mutual agreement found among academics and entrepreneurs on how to conduct an innovative process successfully.

Conway and Steward (2009) have stated that innovation represents a delivery of a new product to the market or the introduction process of new ideas that can solve firm problems. Ideas that are designed to reorganize, reduce costs, improve the organization's networks, develop new systems are also considered to be an innovation as well as the generation, acceptance and implementation of new ideas, processes, products or services.

According to Lewin and Massini (2003) and Nelson and Winter (1982), innovation emerges from two main sources: i) internal research and development (R&D) which is based on the company's expertise and knowledge, and ii) the imitation of innovations that were introduced by other companies. R&D not only provides new opportunities and enables new methods of production but also supports the penetration to new markets and re-creation of company's operations and processes which would enable to serve new markets (Knight, Cavusgil, 2004).

The importance of innovation activity is not negotiable and has been mentioned in a number of academic studies (Damanpour et al., 2009; Prajogo, 2006; Ganotakis and Love, 2012; Bogers and West, 2012). Innovation is defined as an economic stimulus, scientific and technological progress and social development condition. Therefore, innovative activities which interrelate creativity, education and entrepreneurship are considered to be productive activities directed towards any system, process or product transition from a lower level to a higher level. These transformations aim to meet the changing needs of society and keep up in the competition with other market participants.

According to Schumpeter (1963) and Drucker (1985), innovation is entrepreneurial area which aims either to radically change the product using an invention or apply advantages of technology that has not been used in production previously (Stripeikis and Ramanauskas, 2011).

Love and Roper (2009) has noted that innovation is a process rather than an **occurrence** which embraces many activities, starting from the identification of innovative products to their development, production and the fulfillment of marketing strategy. Authors argue that there are four stages of new product development: identifying new products, product design and development, product engineering and product marketing, but it cannot be assured that the same combination of internal and external knowledge will be sufficient in all stages of the new product development process.

As indicated earlier, the development of innovation results in organizational change. By fostering the innovative process, organizations are using internal and external resources in order to answer market needs and maintain competitiveness or to be ahead of rivals.

Theoretical Approaches of Innovation Development

The study of innovation has been a relevant topic as academics, policy makers and entrepreneurial representatives consider innovation as an initial basis of economic welfare, the main factor of change and a competitive advantage. Innovation researches have introduced a variety of innovation conceptual models based on different approaches.

Most of researches were based on Schumpeter’s theory of innovation factors where the main motives for innovation were market size and structure. However, after the comprehensive disclosure of specific industries and knowledge management features, these factors were stated no longer relevant. It is argued that external factors, such as external learning, knowledge surplus and the method of management are considered to be much more important than specific features of the whole industry. Therefore innovation can reduce costs of production, increase production and quality of goods or services and create new markets. Any innovation that has a demand in comparison with other products should increase company's profitability (Webster, 2004).

Innovation concept is characterized by the aspect of innovation development speed which can be interpreted dually. First, the pace of innovation is based on duration of: initiation of innovation, development of innovation and the new product delivery to the market. According to Stalk (1993), in the world where product life cycle is shortening steadily because of the rapidly changing environment and customer needs, the ability to innovate becomes increasingly important. These circumstances have a significant impact not only to introduce new products to the market but also do it faster than the competitors (Prajogo, 2006). Second, the pace of innovation is related to how quickly a company is able to embrace new technologies. This approach is based on five categories of innovators, formulated by Rogers (1983): primary innovators, early successors, early majority, late successors and laggards. Naturally, the early innovation successors will benefit more significantly, although with a higher degree of risk (Prajogo, 2006).

According to Hong et al (2012), companies involve in the development or implementation of innovation activities, because they seek to create a new or significantly improved product or process to increase profit and maintain or expand a market share. Regarding significant innovations companies have a chance to dominate in the market or become an industry monopolist. Arias-Aranda (2001) states that innovation concept is related to the company's innovativeness stability and continuity over time, as companies strive to remain competitive.

New models of innovative research emphasizes the importance of innovation development process, pointing out that innovators must work closely with the key customers, suppliers and institutions that are enrolled in the innovation system. For this reason, innovators often do not generate innovative products alone but build teams or networks among reliable partners (Laursen and Salter, 2006). Banburry and Mitchell (1995) argues that concept of innovation is related to the company's innovation strategy and opportunities to introduce new products to the market, i.e. be an early entrant. In some cases, these companies are trying to create new markets by a strategy based on the first-mover advantage (Prajogo, 2006).

The systematic approach to innovation has been set due to the multiplicity of the innovation concept. Innovation is regarded not only as an innovative feature, but as an ongoing process - from research and development to the new products, i.e. goods or services in the market. The process involves a number of entities that forms the innovation system. There are many participants in the innovation dissemination process so it is determined by various factors such as barriers between promoters of innovative products and consumers, selected dissemination method, technology features, characteristics of the product, market and other external factors (Bagdzevičienė and Vasiliauskaitė, 2002).

Among many methods of seeking to distinguish innovations into certain categories, the most characterized remains the distinction between product and process innovation, although this demarcation is sometimes very blurry and unclear. This issue of separation between product and process innovation is important because it allows a comparison of manufacturing and service sector companies. Closeness between product and process innovation is much stronger in services than in manufacturing. This happens mainly because of users that make the processes in the service sector very clear and the overall quality of service is immediately tangible and evaluated by consumers (Damanpour et al, 2009).

New products and services are at the top of necessity for economic growth. Therefore it is relevant to review the scientific literature on what is the relationship between innovation and business performance and to discuss the importance of innovation and the value it gives to the company.

Knowledge derived during the process of innovation development is an essential element of new technologies creation. The knowledge intensity and know-how of young, entrepreneurial companies helps them to grow in the international scope and contribute to the development of unique products. Knowledge that promotes the production of unique goods or services allows global companies to satisfy specific market needs, thus increasing their market share and sales and also helps to ensure a unique product supply. Global companies seek to balance innovation and knowledge base so that they could offer relatively superior quality products (Autio et al, 2000).

Entrepreneurship and innovation naturally complements each other and forms an integral part of a successful business. Both of these elements require creative thinking and the ability to take the risks. Entrepreneurship comes from small businesses capabilities and the ability to affect the availability of resources and introduce innovation thus transforming existing markets (Steensma et al, 2000). Innovation stimulates the birth of new ideas and development of creative process, and also reflects the willingness to abandon obsolete technology replacing it to modern one. Entrepreneurial companies seek to continuously develop products and management techniques that improve the company's organizational structure and management (Lumpkin and Dess, 1996). In general, innovation is an important entrepreneurial process in respect of each company's competitiveness in the market. Concentration to the international market can also enhance technological competencies. Companies use technology to upgrade or improve the product development process and the products itself, as well as adjust products for the international market. Information and communication technologies help to learn more about customers and competitors, to search for networks or make communication among stakeholders more efficiently.

According to Miller and Friesen (1984), the company also points out that in the innovation process important is not only the technological aspect, but also the ability to offer customers unique and specific products. The ability to offer unique products comes from the innovative and knowledge-intensive enterprise capabilities. By offering these exceptional products the company creates customer’s loyalty, because they cannot buy it anywhere else. Also, the company obtains value because it is separated from other competitors and can easily enter the international market or become an international company. This approach is applicable to companies whose products are characterized by innovative features, maintain excellent customer service and uses know-how (Knight and Cavusgil, 2004).

Innovation plays a significant role not only at the industrial level but is also very important at country and continental level, so developed countries economic policy debate, and various international organizations and institutions documents emphasize that innovation is a key engine for economic growth (OECD, 2001; OECD, 2005). Casson (2000) notes that internationalization and entry into new markets abroad are also considered as innovation, therefore internationally born companies are particularly innovative (Knight and Cavusgil, 2004).

The Innovation Value Chain

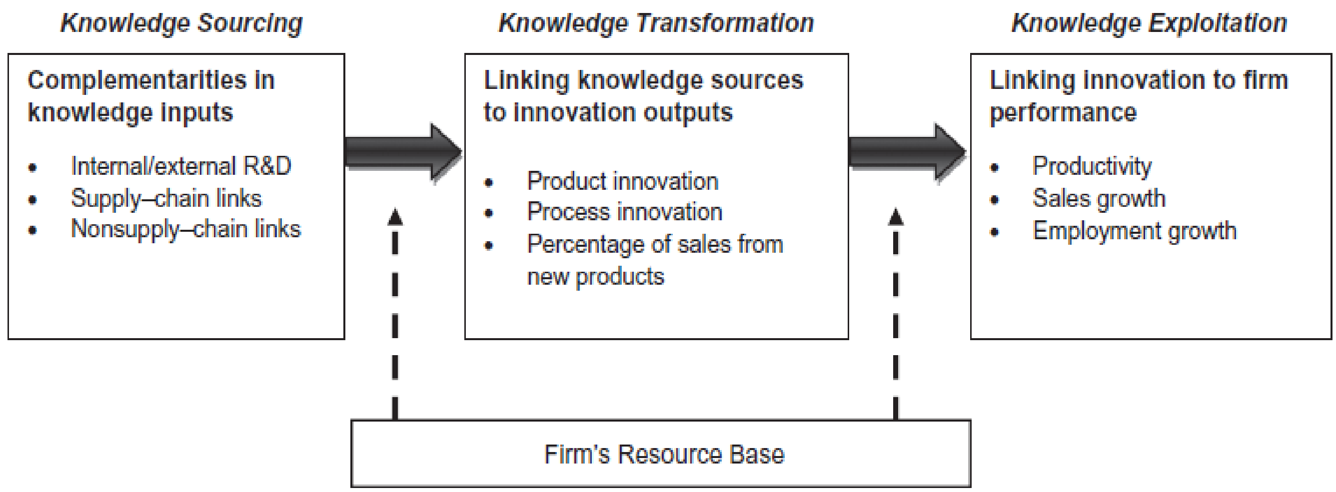
Each company developing innovation or willing to do it the future must be concerned about innovation development process so that investment in innovation would bring maximum benefits in the short-term and in the long-term. The establishment of a certain innovation process structure is an important step before implementing innovation. Referring to the established structure innovative company collects the knowledge essential for innovation development and it's transformation to goods or services. Afterwards these competencies can be employed in company's growth and increase of profit and market share.

Innovation value chain (IVC) is a conceptual framework and modeling tool that enables to highlight the strengths and weaknesses of company's innovation performance features. Innovation value chain is generally used to analyze the performance of high-tech sector companies where the key factor of successful growth is the development of radically innovative products or services (Ganotakis and Love, 2012).

New technology-based firms entering innovative products to the market not only improves their performance but also raises an overall competitiveness of the economy, even in the recession. If a greater share of companies would offer innovative goods or services and implement innovation in company's organizational structure (new ways to produce goods or provide services, improvement in operational capabilities and marketing, etc.), it would not only contribute to fill the gap of productivity that results because of competitors, but also confront the future pressure from developing countries (Porter and Ketels, 2003).

The significance of innovation value chain is described as a compilation of information through product and process innovation and showing the most important links in the entire innovation process. The result of innovation value chain reflects in the company's growth and productivity outcomes when company implements different types of innovation. The knowledge of innovation value chain helps companies to prioritize necessary innovation, focus the management on weak links of the innovation value chain and to the relationship of the company's operating processes. It is stressed that external research and development complements internal research and development and knowledge resources of supply chain therefore investment to the external R&D can bring a non-direct benefit from innovation (Ganotakis and Love, 2012). According to Hansen and Birkinshaw (2007), in order to improve innovation, companies' directors should look at innovation as a process from the idea to the outcome and focus on three innovation value chain stages: first, to generate ideas; second, to select the best ideas and develop products, and third, to spread the innovative products across organization, local channels and customer groups.

Ganotakis and Love (2012) provides innovation value chain scheme (see Figure 1) which is based on Roper et al (2008) study. Innovation value chain is interpreted as companies three key relations: first, collection of different information required for innovation; second, transforming accumulated knowledge to the physical state of innovation; and third, the use of innovation and it's impact on the company's growth and productivity rates.



Source: adopted from Ganotakis and Love, 2012.

Figure 1. The Structure of Innovation Value Chain

The main advantage of innovation value chain is that it shows multiple connections throughout the entire innovation process: from the beginning to the end. The information gained regarding to the innovation value chain helps managers to focus on innovation as a complete product and during it's development time focus on the weakest segments of innovation value chain. Analyzing this innovation value chain structure, company has an advantage of it's competitors, because it reallocate finance while seeing whole process of innovation development. As well, the company using the innovation value chain is able to plan more precisely the results and benefits that innovation will bring after it is introduced to the market.

Conclusions

The importance to adequately understand the conception of innovation, how innovation is born and performs within businesses emerges because of the intense relation between innovation and economic welfare. Innovation is not only a factor of economic efficiency but also a determinant of value creation in goods or services and promotion of company's sustainability. Innovation is defined as an economic stimulus, scientific and technological progress, social development and the condition of international competitiveness. However the understanding of innovation is a wide range, therefore the systematic overview on the conception of innovation has been highlighted. The paper reviews the diversity of innovation conceptions and suggests main theoretical approaches of innovation development. As well this study examines the innovation value chain, which is a conceptual framework demonstrating strengths and weaknesses in the innovation performance. The benefits of the innovation value chain reveals in demonstrating the most important interconnection in the overall innovation process from knowledge sourcing to the knowledge exploitation which results in productivity and company's growth.

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