

GUIDELINES FOR THE STUDY OF INNOVATION ACTIVITIES OF THE ENTERPRISES IN THE FOREST INDUSTRY

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ABSTRACT

This report presents the specifics of the study of innovation of the enterprises of forest industry. It includes recommendations for distinguishing innovation activities in product and process innovations, organizational and marketing innovations, and eco-innovations. The report presents typical examples of innovation activities in the furniture sector and activities that are not considered for innovative

Key words: innovation activities, technological innovation, non-technological innovation, forest industry, furniture enterprises.

INTRODUCTION

The study of innovation and in particular innovation activities of furniture enterprises requires their differentiation in different types of innovation carried out in enterprises. This is the most complicated stage of monitoring innovation performance of firms that depends on the evaluation of technological and non-technological innovations as a result. For this reason it is essential to identify and differentiate them in the forest industry in order to improve the innovation research of furniture enterprises.

1. FIRM INNOVATIONS – DEFINITIONS AND TYPES

In the literature there are different definitions of innovation, which is associated with novelty. *Innovation* is something that has not existed until now - a new order, a custom method invention phenomenon. Innovations based on news that are replacing old objects with new ones. It is the result of innovation in enterprises and is considered the driving force behind the development of mankind, products, activities and progress in the world.

Foreign authors (Twis, Drucker) identify and analyze innovation in various aspects:

- B. Twis defines innovation as a process in which the invention or idea acquires economic strength (Institute for Entrepreneurship and Investment, Moscow, 2003).
- F. Nixsan defines innovation as a combination of technical, manufacturing and other activities, giving new market needs industrial processes and equipment. (Institute for Entrepreneurship and Investment, Moscow, 2003).
- P. Drucker believes innovation as activities that provide new capabilities of resources for the production of tangible goods (values). He believes that innovation is not a change management but " ... targeted search for changes which could be used by enterprise ... It is a special tool for entrepreneurs, by means of which they use climate as an opportunity to make new business, product or service. " (Drucker, 2002).

Bulgarian authors, leading experts in the field of innovation, justifying their complexity:

- R. Chobanova stresses that different interpretations of innovation relate to the content that is embedded in this concept, the most common problems arise from the fact that innovation is usually seen only as an activity or just as a result (Chobanova, 2007).
- I. Georgiev considers that the definition of innovation as such also can not be with only one meaning and summarizes that at its core is a new concept that helps to solve a given problem (Georgiev, 1997).
- N. Taneva focuses on innovation as a higher form of work with knowledge and then as an important resource for which demand the creation of new useful knowledge through market mechanisms, provides better concurrency (Taneva, 2006).
- Petrov and Slavova justify the need for innovation both in the strategic business management and in particular the analysis of the innovation capabilities of the company (Petrov, Slavova, 1996).

Depending on the nature of the innovation, the various types of innovation are determined by the classification features. There are many classifications of innovation, clarifying their nature. In The Oslo Manual, 2005 – the basic methodological document containing the recommendations in the study of innovation at the firm level in EU countries (OECD, Oslo Manual, 2005), an innovative firm is one that has introduced some of the following types of innovation or combinations of innovations during the three-year period: product innovation, process innovation (technology, equipment and software),

organizational innovation (working links relationships with other firms) and marketing innovations (sales, performance, pricing, design).

Technological innovations are product and process ones, and non-technological - organizational and marketing. The importance of technological innovation is determined by the fact that they show a result of innovation activities of enterprises. Product/process innovation is the enterprises that introduced new or significantly improved product or process during the period – *technological product and process innovation* (TPP), which should not be seen only as innovations of high-tech machinery and equipment.

According to the OECD definition: "Innovation activities are all scientific, technological, organizational, financial and marketing actions which are designed to introduced for innovations. Some innovation activities are not innovative, but are necessary for the implementation of innovations."

Specific innovation activities carried out in the enterprises that make expenditures in this area are: (nsi, 2012):

- R & D carried out in the enterprise;
- R & D provided by another enterprise;
- acquisition of equipment and software related to innovation;
- acquisition of external knowledge related to the development of product and process innovation;
- training related to innovation;
- marketing activities for the presentation of innovation;
- technical and preparatory procedures for the production of new or improved products and introduction of new or improved processes.

2. METHODOLOGICAL BASIS FOR STUDY OF THE INNOVATIONS

IN FOREST INDUSTRY ENTERPRISES.

Furniture is characterized by different materials (wood and non-wood) and end product (styles and models, colors and sizes). It reflects design development, engineering and technology, and training of staff. Furniture enterprises, depending on the objects, producing furniture for public spaces (hotel furniture, office furniture, school furniture, etc.) and home furnishings (kitchen, bedrooms, dining rooms and living rooms) in the form of sofas, tables, chairs and furniture parts. This diversity suggests variability and flexibility of complete solutions and new products often require new technologies, techniques and working methods.

One of the most difficult tasks in the study of innovation in furniture enterprises is to distinguish between types of innovation, because many of them have features that cover more than one type of innovation. Difficulties arise in terms of the type of the innovation. This requires the specification and characterization of innovation activities in the types of innovations that have distinguished the various sectors in the methodological document and innovative research in the EU. Some basic innovations, key to the furniture sector are:

Product innovation

- Materials used in the furniture industry are one of the most important aspects of product innovation for furniture makers. The variety of wood and non-wood materials and semi-finished products largely determine the type and ergonomic furniture – texture, shapes, colors.
- Particular attention should be paid and changes in the design of furniture – such as product innovation or marketing innovation. Ergonomic de-

sign and integrated features of the device in the industry also affects the structure of the product. It is an integral part of the development and implementation of product innovations. However, changes in the design that do not involve significant changes in the functional characteristics of the product or the intended uses of the product are marketing innovations.

Process innovations

- Very often between process and organizational innovation is a difference because of the way of implementation of some of them is necessary the implementation of the other type (this is true for other types).
- There is a distinction between integrated computer systems for process management in the enterprise as organizational innovations, while the use of specialized systems for improvement of partial processes, it has to be interpreted as process innovation.

3. EXAMPLES OF INNOVATION ACTIVITIES OF FURNITURE ENTERPRISES

Examples of innovations in furniture enterprises, characterized by specificities of the manufacturing and the complexity of the final product, are types of innovation, technological and non-technological, eco-innovation. It is important to distinguish between those activities that are close to innovation, which are not considered as such.

A. Technological innovations

Product innovations exclude the following:

- Minor changes or improvements;
- Routine upgrades;

- Regular seasonal changes (such as for clothing lines);
- Customization for a single client that does not include significantly different attributes compared to products made for other clients;
- Design changes that do not alter the function, intended use or technical.

Process Innovations – examples:

Production

- Installation of new or improved manufacturing technology;
- Used new machinery required for new or improved products;
- Improved a new instruments and equipment;
- Improved a computer-assisted product development;
- Improved a computerized equipment for quality control of production

Delivery

- Introduction of bar coding or passive radio frequency identification (RFID) chips to track materials through the supply chain;
- Introduction of software to identify optimal delivery routes;
- Improved a new software tools designed to improve supply flows;
- Improved a new or significantly improved computer networks.

B. Non-technological innovations

Organizational innovations. Organizational innovations exclude the following:

- Changes in business practices, workplace organization or external relations that are based on organizational methods already in use in the firm;

- Changes in management strategy, unless accompanied by the introduction of a new organizational method;
- Mergers with, and the acquisition of other firms.

Organizational innovations-examples:

Business Practice

- Establishing of a new database of best practices;
- First-time introduction of an integrated monitoring system for firm activities (production, finance, strategy, marketing);
- First-time introduction of management systems for general production or supply operations (supply chain management, business reengineering, lean production, quality management system);
- First-time introduction of training programs to create efficient and functional teams that integrate staff from different backgrounds or areas of responsibility.

Workplace organization

- First-time implementation of decentralized job responsibility for the firm's workers, such as giving substantially more control and responsibility over work processes to production, distribution or sales staff;
- First-time establishment of formal or informal work teams to improve the access and sharing of knowledge from different departments (marketing, research and production);
- First-time implementation of an anonymous incident reporting system to encourage the reporting of errors or hazards in order to identify their causes and reduce their frequency.

External relations

- First-time introduction of quality control standards for suppliers and sub-contractors;
- First-time use of outsourcing of research or production;
- First-time entering into research collaboration with universities or other research organizations.

Marketing Innovations –examples:

Design and packaging

Implementation of a significant change in the design of a furniture line to give it a new look and widen its appeal.

Placement (sales channels)

- First-time introduction of franchising;
- First-time introduction of direct selling or exclusive retailing;
- Implementation of a new concept for product presentation such as sales rooms for furniture that are designed according to themes, allowing customers to view products in fully decorated rooms;
- Implementation of a personalized information system, e.g. obtained from loyalty cards, to tailor the presentation of products to the specific needs of individual customers.

Pricing

- Introduction of a new method that allows customers to choose desired product specifications on the firm's Web site and then see the price for the specified product;
- First-time use of a method for varying the price of a good or service according to demand for it;

- First-time use of in-store special offers that are only accessible to holders of the store's credit card or reward card.

Promotion

- First-time use of trademarks;
- First-time use of product placement in movies or television programs;
- Introduction of a fundamentally new brand symbol intended to position the firm's product on a new market.

Eco-innovations – examples:

- Use of raw materials from renewable sources;
- Creation of environmentally friendly products;
- Use of energy from renewable sources in the production;
- Use of technologies and systems for recovery and minimizing exclusion of waste;
- Implementation of standards related to environment protection;
- Others.

CONCLUSIONS AND RECOMMENDATIONS

Industrial innovation includes specifics in innovative activities that preempt the results of innovative enterprises. Typical examples in the furniture sector for innovation in technological and non-technological innovations, would help to future research in accordance with the current requirements and recommendations of the EU. For this purpose it is necessary:

- 1) Distinction of innovation processes, activities and results.
- 2) Reflecting sector-specific - raw materials, production technology, products.

- 3) Following the recommendations of the main point of methodological documents – Oslo Manual and the OECD.
- 4) Compliance with the latest methods to monitor the firm activities in the EU for the periods 2010–2012, 2012–2014 , etc. used by Eurostat and NSI.

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