

## Innovative processes management in the enterprises belonging to the wood industry

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**Abstract:** *Innovative processes management in the enterprises belonging to the wood industry.* In the following article the selected definitions of the term: innovation will be discussed, what is more the author specified the factors determining innovation within the enterprises, including enterprises representing wood industry. First aim of this article is to determine the validity of the identified functions of management: planning, organizing, motivating and control and inspection at various stages of the innovation process. The study shows that the stages of the innovation process, which require the use of almost all management functions are: "Identification of the problem, or occasion", "Collecting information about each of the ideas inside and outside the organization" and "If there is the need - improvements."

**Keywords:** innovations, sources of innovation, innovative process, innovation management.

### INTRODUCTION

In the conditions of the market economy, maintaining the competitive position in any activity is based on using innovations. Innovations allow to go ahead the competitors. It is expressed by new, or more modern products and services, it opens new markets, helps to find new solutions for meeting the customers' needs and predicting appearing the new ones<sup>2</sup>.

New forms of services, creating and producing modern products should: on one hand function in accordance with the functioning and still changing conditions, e. g. legal standards, on the other hand the services offered on the market should satisfy the increasing needs and aspirations of the customers.

The changes introduced within the enterprises often have the innovative character, as they are defined as: fact, that something becomes different than it was so far, replacing something existing by something new, changing.<sup>3</sup> Taking into account variety of definitions present in literature, it is worth noticing that innovation is defined in wider, or more narrow sense. In a more narrow sense, innovation may be defined as something new, in the scale of word, from the point of view of: both client and producer. In terms of innovation in its broad aspect, we may include the term as any type of change considered by anyone as something new. In general, here we may quote one of the most general definitions, according to which innovation should be treated as: „anything new, different from the solutions used so far; it is connected with the need of doing something better, which changes into better.”<sup>4</sup>, or as „changes in the production processes, especially connected with technology and implementation of new products”.<sup>5</sup> Discussing the subject of innovations, usually we think

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<sup>2</sup> [http://www.pi.gov.pl/PARPFiles/file/PARP/Newsy/PARP\\_5\\_Innowacyjnoscl.pdf](http://www.pi.gov.pl/PARPFiles/file/PARP/Newsy/PARP_5_Innowacyjnoscl.pdf), odczyt 6.06.2014

<sup>3</sup> Webster's Third New International Dictionary, Konemann, Cologne, 1993.

<sup>4</sup> Janasz W., Kozioł K.: *Determinanty działalności innowacyjnej przedsiębiorstw*. Polskie Wydawnictwo Ekonomiczne. Warszawa 2007, p.11.

<sup>5</sup> Łobejko S.: *Systemy informacyjne w zarządzaniu wiedzą i innowacją w przedsiębiorstwie*. Szkoła Główna Handlowa w Warszawie. Warszawa 2005, p.61.

about technological innovations, which may be divided into product innovations (changes made in the products offered) and process innovations (changes made in the processes taking place in the enterprise, usually in the production processes).

## THE METHODOLOGY OF RESEARCH PROCEDURE

To achieve of the study's objective is to determine the validity of the identified management's functions: planning, organizing, motivating and control the various stages of the innovation process. The author used the following methodology proceedings:

- a. Presented determinants and sources of innovation in the wood industry,
- b. Presented a model of the innovation process approach developed by P. McGraw,
- c. Prepared materiality matrix in which management functions are presented in the subsequent stages of the innovation process,
- d. Conclusions.

The whole research procedure allowed us to achieve our set goals publication.

## DETERMINANTS AND SOURCES OF INNOVATION IN WOOD INDUSTRY

In order to increase the level of innovation of the enterprise belonging to the wood industry, the conditions, mechanisms and sources of innovation should be identified, then it is important to manage the innovation process skillfully. In literature there are two, based on various criteria types of innovation determinants. First of them is division into internal and external determinants. The second classification is division into objectified and unobjectified<sup>6</sup>.

Classification of the determinants into internal and external is based on the criterion of the sources of inventing innovation. It show the internal conditions within the enterprises as well as external conditions influence its functioning. In literature there are no single ideas concerning detailed lists of external and internal determinants of innovation. To the greatest extend it refers to the group of internal factors.<sup>7</sup>

Internal innovation factors may be divided into:

1. The factors directly influencing innovations – called innovative assets, in which there may be found:

- Accumulated human resources (including the level of education and qualifications), e. i. knowledge and skills being an effect of knowledge and experience gained;
- Resources of accumulated knowledge measured by the spendings on scientific research;
- Resources of objectified knowledge in a form of the machines, equipment and buildings;
- Resources of unobjectified knowledge in a form of licenses and patents gained by the employees;
- Resources of the external acquired knowledge gained as a result of acquiring positive effects of the external knowledge; knowledge from the environment, from other business units (production, financial, trading relationships);
- Commercial resources;

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<sup>6</sup> A. Wziętek-Kubiak, E. Balcerowicz, *Determinanty rozwoju innowacyjności firmy w kontekście poziomu wykształcenia pracowników*, Wyd. CASE, Warszawa 2009, p. 16

<sup>7</sup> L. Bozic, S. Radas, *The antecedents of SME innovativeness in an emerging transition economy*, "Technovation" 2009, nr 29

- Organizational assets.<sup>8</sup>

Internal determinants of innovation accompanied the process of projecting and implementation of the innovation for production placing new product on the market. They are also connected with organizational changes within the enterprise, which means Take part in inventing and implementing of organizational innovation. It means that starting innovation processes in an enterprises gives possibility for implementing other forms of innovation. It also suggests that efficiency of the implemented technological innovations is dependent on the ability to introduce various innovations in the enterprises, adjusting one innovation to the other, implemented earlier, etc.<sup>9</sup>

External determinants of innovations have their source in environment- national and international, in which the enterprise operates and from which the assets it uses: directly or indirectly. These determinants are therefore conditioned by environment, in which the enterprise functions. Here we may include:

- General institutional determinants (not only things, but also the rules dictated by various rules, norms, or individual rules and plans), including national policy and policy of local authorities.
- Activities of other subjects (including foreign suppliers and companies with foreign capital) in the area and branch in which the company operates.,
- Cooperation with other market subjects- enterprises, national and private institutions, lokal and central institutions.
- Consumers' behaviours and behaviours of other market subjects..<sup>10</sup>

A significant external factor, determining innovative activities last time in wood industry is introducing norms and UE regulations for building and construction industry. The norms concerning materials for production of windows and doors were restricted. Especially, it refers to the wood density not less than 600kg/m<sup>3</sup>. EU standards claim that doors and windows are integral construction part of the building. Wood density determines its mechanical resistance, which limits the possibility of placing heavy, thick window glasses with appropriate thermal conductivity, as well as fittings and anti- burglary window glass. Proper quality of glass and fittings is a guarantee of stability and stiffness of given element as well as better and more sure installation within the building construction/ architecture..

## MANAGING INNOVATIONS ON THE BASIS OF SELECTED MODEL APPROACH TO THE INNOVATIVE PROCESS

An essential condition of properly managing organization became the management skills, supported by knowledge from the area of economy and enterprises management, including management of various project. Innovations, e. i. changes directed to replacing the present state of things, with the use of other, better solutions, implemented in enterprises in a form of project, which means individual and unique activities, having separate budget and plan of realization. Nevertheless, each project, including innovative idea, is realized as a series of activities realized in order to implement given goal, so it has a form of process.

In literature there may be found a group of model approaches to the innovative processes<sup>11</sup>. Little known, but interesting idea of building innovative processes was created by McGowan. According to him, the innovative process includes 12 stages<sup>12</sup>:

<sup>8</sup> A. Wziątek-Kubiak, E. Balcerowicz, *Determinanty rozwoju innowacyjności firmy w kontekście poziomu wykształcenia pracowników*, Wyd. CASE, Warszawa 2009, p. 17

<sup>9</sup> <http://www.parp.gov.pl/index/more/10185>, available 9.06. 2014

<sup>10</sup> A. Wziątek-Kubiak, E. Balcerowicz, *Determinanty rozwoju innowacyjności firmy w kontekście poziomu wykształcenia pracowników*, Wyd. CASE, Warszawa 2009, p. 19

1. Identification of the problem, or occasion;
2. Searching for ideas for the solution.
3. Identification of various ideas,
4. Collecting information about separate ideas within and outside the organization.,
5. Optionally, re-definition and evaluation of the problems, or occasions.
6. Identification of real ideas;
7. Comparative analysis of the profits predicted from each idea,
8. Sequencing on the basis of the general comparative assessment, ,
9. Choosing the best option.
10. Working on and implementation of the best idea.
11. Assessment of effectiveness of the project.
12. If there is the need- improvements. .

McGowan for the basis for his schema took the creative activities of a given company. According to his theory of innovative process, here we may distinguish 3 stages: the author claims that the process starts when an individual notices some problem. After the problem identification, a natural course of events takes place. It is connected with looking for the ideas, their evaluation and real choice. Rejected ideas, which seem to be the least profitable, are archived, but not destroyed. Selected discussions of the problems undergo the process of cost- technological analysis and becomes ordered according to the results of this analysis. These are the stages of the 2 cycles, a result of which is a selection of the best idea. Good, but not used ideas are left for future, in order to use them the next time. Final stages of the innovative process are based on the detailed planning the methods of implementing and analysis of the effectiveness of selected solution, and if it is needed- its improvements. Process suggested by McGown is the most useful for solving the problems of an individual enterprises as a part of its developmental strategy. With reference to an individual innovation, the process may be divided into 3 parts: emerging of the idea of change, making decision concerning its implementation and realization of innovation. Each innovative process is characterized by specific features which distinguish it from industrial production.

#### MANAGING OF THE INNOVATIVE PROCESS. EPISTEMOLOGICAL ASSUMPTIONS

Managing the innovations in the area of enterprises may be defined as a management of the innovative processes within the enterprises. The management itself may be interpreted by its functions: planning, organizing, motivating, machine control, supervision. What is more, each of this functions is realized on each level of the innovative process. It is worth mentioning that particular stages of innovative process are characterized by different level of importance of the identified above functions of management. In the following article there was made an attempt to answer the question: which functions on subsequent stages of the innovation process are significant for effective realization of innovative processes.

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<sup>11</sup> The most commonly quoted items of literature, in which the subject of innovation is discussed, are:: R. Rothwell, P. Gardiner, The role of design in product and process change, *Design Studies*, 1983, No.3, R. Rothwell, W. Zegveld, *Reindustrialization and Technology*, Longman, London 1985, A. Pomykałski *Zarządzanie innowacjami, Globalizacją, Konkurencją, Technologią Informacyjną*. Wydawnictwo Naukowe PWN, Warszawa- Łódź 2001.

<sup>12</sup> McGowan P.: *Innowacje i przedsiębiorczość wewnętrzna*. W: *Praktyka kierowania*, D.M. Stewart (red.). PWE. Warszawa 1994, p.583.

**Table 1.** Functions of management at subsequent stages of the innovative process

No	Function of management Stage of the innovation process	Planning	Organizing	Motivating	Supervision
1	Identification of the problem, or occasion;	x	x	X	x
2	Searching for ideas for the solution	x		X	
3	Identification of various ideas	x		X	
4	Collecting information about separate ideas inside and outside the organization.	x	x	X	x
5	Optionally, re-definition and evaluation of the problems, or occasions	x	x	X	
6	Identification of real ideas		x		x
7	Comparative analysis of the profits predicted form each idea				x
8	Sequencing on the basis of the general comparative assessment				x
9	Choosing the best option				x
10	Working on and implementation of the best idea			X	
11	Assessment of the project effectiveness				x
12	If there is the need- improvements	x	x	X	x

Source: own elaboration

The above presented table of dependencies requires further empirical research, as it was elaborated on the basis of four dialogues directed, uncategorized. People taking part in the research usually work in an enterprise belonging to the wood industry. The conclusion may be drawn that all the functions of management play the key role in the innovative process, especially in its first stages. Looking at the table it may be also concluded that according to the people realizing innovative project the most important stages of this process were identification of the problem, or occasion, collecting information about separate ideas within and outside the organization, and - If there is the need- improvements.

## SUMMARY

The necessity for implementing innovations is a fact. Sources of innovation may be found both outside and inside the enterprises. Having analyzed external and internal factors influencing innovations in the enterprise it may be concluded that external determinants of innovation influence its effect by activating and using internal determinants of the enterprises. An example of such situation may be the change of the durability standards for wooden doors and windows. Restricting of these regulations effected in a great number of innovations, directed mainly on introducing new products meeting the above mentioned requirements. It is worth mentioning that the necessity for processing of a raw material with density not greater than  $600\text{kg/m}^3$  is connected with the need to exchange the machine park, this is the determinant for process innovations.

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11. <http://www.parp.gov.pl/index/more/10185>

**Streszczenie:** *Zarządzanie procesami innowacyjnymi w przedsiębiorstwach przemysłu drzewnego*. W niniejszym artykule zaprezentowano wybrane definicje innowacji, dodatkowo wyszczególniono czynniki determinujące innowacyjność przedsiębiorstw, w tym przedsiębiorstw przemysłu drzewnego. Następnie została podjęta próba odpowiedzi na pytanie: które funkcje na kolejnych etapach procesu innowacyjnego są zasadnicze dla efektywnej realizacji procesów innowacyjnych.

*Słowa kluczowe:* innowacje, źródła innowacji, projekt innowacyjny, proces innowacyjny, zarządzanie innowacjami