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## Knowledge management in production enterprises

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### Abstract

The fact that companies are constantly subjected to changes creates challenges connected with constant learning and acquiring knowledge. Companies are forced to act in accordance with the generative strategy. Besides realizing the traditional tasks of production or service, companies need to acquire and process knowledge and apply it in practice. The consequence of these changes is the transformation of contemporary enterprises into knowledge-based organizations, with managers increasingly recognizing the role and importance of the concept of knowledge management in creating enterprises competitiveness. The main aim of the article is identification of knowledge management in production enterprises.

## 1. Introduction

Companies which are constantly subjected to changes face challenges connected with constant learning and acquiring knowledge. Companies are forced to act in accordance with the generative strategy (ALBROS-GARRIGOS J., ET AL. 2010, DAVENPORT T.H., PRUSAK L. 1995). Besides realizing the traditional tasks of production or service, companies need to acquire and process knowledge and apply it in practice skillfully. The consequence of these changes is the transformation of contemporary enterprises into knowledge-based organizations, with managers increasingly recognizing the role and importance of the concept of knowledge management in creating enterprises competitiveness. Currently, knowledge is perceived as a strategic corporate asset. Knowledge management is characterized by a deliberate and systematic approach to ensure full utilization of the knowledge base of an organization. Considerable effort related to knowledge management has been largely centered on capturing, codifying, storing and disseminating knowledge that is held by people in organizations in the pursuit of strategic competitiveness (HAN AND PARK, 2009).

For present-day organizations, the chance to develop is the appropriate use of knowledge and competence of employees. Knowledge is a very important intangible resource of companies, and the concept of knowledge management plays an important role in the entire management system. Knowledge is the basis for building a company of the future,

a so called sustainable enterprise (GRUDZEWSKI W.M., HEJDUK I. K. 2010).

Davenport and Prusak define knowledge as a fluid mix of framed experience, values, contextual information and expert insight that provide a framework for evaluating and incorporating new experiences and information (DAVENPORT T.H., PRUSAK L. 1995, DAVENPORT T.H., KLAHR P. 1998, DAVENPORT T.H., PRUSAK L. 1998). According to Grudzewski and Hejduk, knowledge is an application of information in practice (GRUDZEWSKI W.M., HEJDUK I. K. 2010). Knowledge originates in the head of an individual (the mental state of having ideas, facts, concepts, data and techniques, as recorded in an individual's memory) and builds on information that is transformed and enriched by personal experience, beliefs and values with decision and action-relevant meaning (DAVENPORT T.H., PRUSAK L. 1998). Knowledge management is a process that helps the organization to generate richness according to its intellectual or based on knowledge assets (NONAKA I., TAKEUCHI H. 1995, MASSINGHAM P. 2014, LIN R., CHE R., TING CH. 2012). Hejduk define knowledge management as an approach to grow or create values by more active support of experience, connected to know-how and judgments, existing both inside and outside an organization (Hejduk I.K. 2005). All issues related to knowledge management and innovation should be integrated into the organizational knowledge strategy if organizations are really serious about sustaining their competi-

tive advantage (CHOW W.S., CHAN L.S. 2008, DWIVEDI Y.K., ET AL. 2011, MAS MACHUCA M., MARTÍNEZ COSTA C. 2012).

Enterprises should use modern technological solutions in the field of collection, storage, transferring and sharing of information, and flexibly respond to the demands of the environment. Important roles are played by the knowledge workers, defined as specialists, highly qualified professional with organizational skills (BITKOWSKA A., WEISS E. 2011, MASSINGHAM P. 2014, CHRISTINA LING-HSING CHANG, TUNG-CHING LIN. 2015).

Knowledge of the company's production know-how can be divided between the sources of existence, the basic knowledge groups about processes, systems and products. (Knowledge can be divided into tactic knowledge and explicit knowledge.) Knowledge is an ordered, coherent set of information about a particular product or process. It is available in the form of documentation (paper, electronic) and in computer databases, which can be further divided into declarative - information about materials, machine tools, tools, etc. - procedural - presenting the process, process design; It is in the processing instructions, technology cards, normalization cards, etc.

The use of computerized knowledge management concepts that allow the selection, condensed and analyzed information, and facilitates decision-making in a manufacturing enterprise. These systems effectively support the processes of acquiring, presenting, storing, and searching the knowledge needed to produce products. This is the essence of efficient management systems in manufacturing companies. Taking into account the specificity of this system, the final outcome of the project can be linked to business benefits such as improvement of processes and products, improvement of efficiency, minimization of production costs and improvement of information flow in processes (PASZEK A. 2007, PASZEK A. 2009).

## 2. Methodology of research

The aim of the next examinations was a diagnosis of the scope and the level of application of the knowledge management in Polish production enterprises, and actions identifying that organizations undertake in this area. The solutions of the knowledge management in enterprises operating on the Polish market were analysed with reference to the forming of their competitiveness. It was assumed that a low level of managers' awareness affects the lack of application of this concept and, consequently, affects a poor competitive position.

Empirical studies were conducted on a sample of 126 business units including small, medium and large companies operating in Poland. Quantitative studies were conducted in 2016. The selection of firms for research was carried out using a targeted method taking into account the following criteria: number of employees, operating scope, the position on the market (Table 1). The basic assumption of quantitative research design was the ability to generalize the results to the entire population of enterprises operating in Poland. There were conducted deepened and comprehensive examinations

associated with meaning and possibilities of applying the knowledge management as a tool of competitiveness increasing and the market position forming. Tests were carried out by a direct interview based on a prepared questionnaire.

Among the surveyed companies, the largest share had enterprises with 50-249 of employees - 38.8%, and 250 or more - 28.6%. Small businesses constituted 32.6% of the sample. The most of surveyed companies operate on the domestic market, which gives 33.2%. While 25.4% are companies with international scope, and 25.7% with a local scale. The smallest number of examined companies covers regional markets; it is only 17.7%. Respondents were also asked about the companies set-up year. Respondents were also inquired about the company position in the market. 60.9% of surveyed companies described their position on the market as good, 31% as strong.

**Table 1.** Characteristics of study sample

Criteria	Specification	%
Company size (number of employees)	10 - 49 employed people	32.6
	50 – 249 employed people	38.8
	Above 249 employed people	28.6
The scope of action	Local	25.7
	Regional (a few provinces)	17.7
	Nationwide	31.2
	International	25.4
The position on the market	Poor	8.1
	Good/average	60.9
	Strong	31.0

Source: own research based on empirical studies, 2016

## 3. Results and discussion

A number of companies which perceive knowledge as the crucial factor in achieving the market success is constantly increasing. The knowledge management was used by the 17.9% of production enterprises, while elements of the concept by about 17.3% of them. 24.9% of companies intend to implement this solution in the future, however, the remaining ones cannot acknowledge the need for its application. In some there was no such a possibility. In case of 7.6% of studied enterprises, the concept was unknown to the management. The knowledge management used in researched companies is presented Table 2.

The causes that led the company to implement the knowledge management seem to be important (Table 3). The researches show that companies are guided by a number of reasons. First of all, they expected improvements in the competitive position (48.8%), better relationship with customers (44.8%), staff development (35,6%) and increase in the income and profits (35.0%). In addition, the surveyed companies also showed into the improvement in marketing activities (27.6%), innovation increasing (22.0%) and the growth of operational flexibility (20%).

**Table 2.** The knowledge management used in production enterprises

The Knowledge Management	%
The Knowledge Management Implementation	17.9
The Knowledge Management Components Implementation	17.3
Only plans connected with Implementation of the Knowledge Management	24.9
No need for the Knowledge Management	19.6
No possibility for the implementation of the Knowledge Management Implementation	9.8
Company business leaders do not know about the Knowledge Management Concept	7.6

Source: own research based on empirical studies conducted in 2016

**Table 3.** The causes of interest in the knowledge management in in the production enterprises

The causes of interest in the knowledge management	%
The competitive position improvement	48.8
Better cooperation with customers	44.8
Staff development	35.6
The income and profits growth	35.0
Improvement of marketing efforts	27.6
Innovation increasing	22.0
The elasticity of action increasing	20.0

Source: own research based on empirical studies conducted in 2016

Implementing solutions in the knowledge management mainly concerned the following areas: the knowledge and experience exchange system (35.3% of enterprises), introducing the idea of the knowledge sharing (24.3%), supporting the cooperation and the reuse of the existing knowledge (23% of companies), using the data warehousing (22.4% of companies). The activities in accumulating the knowledge for the purposes of all projects carried out in the organization were also significant (18.5% of enterprises), creating the systems for remote work (16.8% of companies). Actions taken by the surveyed companies presents Table 4.

**Table 4.** Undertaken activities in the field of knowledge management taking up by production enterprises\*

Undertaken activities in the field of knowledge management	%
Accumulation of knowledge for all projects in the organization	18.5
The knowledge and experience exchange system	35.3
Supporting the cooperation and the reuse of the existing knowledge	23.0
Create and use the directory of experts	15.7
Creating solution systems for remote work	16.8

Creating a forum of the information exchange/exchange of ideas	14.5
Creating a workflow system	6.2
Introducing the idea of the knowledge sharing	24.3
Use of CRM (customer relationship management)	8.1
Using the Data Warehouse	22.4
Using of computer systems supporting the knowledge management	11.3

\*more possibility answers

Source: own research based on empirical studies conducted in 2016.

The suitable organization environment supporting the knowledge accumulation process, its processing and application, constitutes the appropriate basis for stimulating innovative processes in the enterprise. The greatest commitment of examined enterprises concerned the knowledge acquisition (39.1%) and its use (39.3%). The respondents also pointed to the knowledge sharing processes - 33.2% and 33% to the knowledge development. Table 5 presents the knowledge management processes in the surveyed companies.

**Table 5.** The knowledge management processes in the production enterprises

Knowledge management processes	%
Knowledge locating	19.8
Knowledge acquisition	39.1
Knowledge developing	33.0
Knowledge sharing	33.2
Knowledge disseminating	17.7
Knowledge using	39.3
Knowledge storage	17.3

\* The possibility of choosing all fitting answers

Source: own research based on empirical studies conducted in 2016

#### 4. Summary and conclusion

The economy based on the knowledge poses new challenges to the enterprises in the effective and efficient development of organizational learning processes. The scope of forming and implementing the knowledge management has a decisive influence on the competitiveness of production enterprises. The analysis of the results of conducted examinations points at the unsatisfactory degree of Polish production enterprises enhancement in the range of adaptations to current challenges of the knowledge economy.

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## 生产企业知识管理

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### 关键词

知识管理,  
生产知识

### 抽象

不断变化的运作公司带来与不断学习和知识获取相关的挑战。公司被迫按照生成战略行事。公司除了实现生产，服务的传统任务外，还需要获取和处理知识，实际应用。这些变化的结果是当代企业在知识型组织中的转型，管理者越来越认识到知识管理理念在创造企业竞争力中的作用和重要性。本文的主要目的是识别生产企业的知识管理。

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