

KNOWLEDGE-ORIENTED STRATEGIES IN THE METAL INDUSTRY (EMPIRICAL STUDIES)

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The aim of this article is an attempt to determine which knowledge-oriented strategies can give metal industry enterprises the best results in achieving and maintaining a competitive advantage. To determine which of these discussed in the literature and implemented in various organizations knowledge-oriented strategies may prove to be the most effective in the metal industry, empirical research has begun. A chosen strategy of knowledge management and supporting strategies are the basis of a choice of methods and means of intended implementation. The choice of a specific knowledge management strategy may also result in the need for changes in an organization, particularly in an information system, internal communication, work organization and human resource management.

Key words: industry, metal, management, knowledge, strategies

INTRODUCTION

Ensuring competitiveness especially in the metal industry in conditions of a modern economy requires flexibility of production and use of high quality materials and processes. All these what constitutes market power of production plants are used technologies, know-how, developed procedures of quality assurance, relationships with contractors i.e. brand, effective management methods. These mentioned above elements of capital are called intangible assets and management of them is a knowledge management task.

A competitive strategy based on knowledge may lead to such its shape to allow overcoming external or internal constraints which are governed by a desire to obtain a sustainable competitive advantage on the market. External constraints result from characteristics of a demand for products or services produced by an organization, a political and legal system as well as actions of competitors and partners. Internal constraints are a result of an existing level of equipment in tangible and intangible resources. Knowledge allows to eliminate both restrictions in a way impossible to be copied by those who do not have it. The strategy based on knowledge does not only use the existing knowledge but it is also based on enriching and supplementing it in order to overcome limitations better.

Modern manufacturing concepts and paradigms form the basis for current and future manufacturing. The main focus is set on the processes and this have an effect on operative managers. While management often comes with strategic ideas it is the employees on the factory floors, running day to day operations, meeting

with customers and serving customers who have the lion's share of ideas that can at least improve efficiency and thereby cut operational costs and at best may transform your whole business. Yet, most businesses including the metallurgical ones leave the innovating processes to management – and ignore many potentially lucrative ideas locked up in their own employees' minds. As a result, many innovative ideas are missed out. Fortunately, there is a solution in the form of a systematic motivation of employee creativeness [1].

The aim of this article is an attempt to determine which knowledge-oriented strategies can give the metal industry enterprises the best results in achieving and maintaining a competitive advantage.

AUTHORS EXPERIMENTAL WORK

To determine which of the widely discussed in the literature and implemented in various organizations [2, 3] knowledge-oriented strategies might be the most effective in the metal industry, empirical research has begun. As a part of the pilot studies a structured interview with the president of the Group of Technical Supervision Testing and Certification has been carried out. The organization is engaged in carrying out an acceptance and certification procedures for welding production facilities and training of welders and welding personnel. Moreover, it makes preparation and implementation of quality management systems in metal industry enterprises.

RESULTS AND DISCUSSION

R. M. Grant proposes a five-stage analysis scheme leading to a formulation of a competitive strategy based on a resource approach. After a modification it can be

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used with a good effect to the concept of a strategy based on implemented knowledge in the metal industry enterprises [4]:

- identification and classification of an organization's resources, inventory of knowledge, assessment of strengths and weaknesses in comparison to competitors, the identification of opportunities for a better use of resources;
- identification of specific skills and abilities of an organization (knowledge, what can be done more effectively than others and why), an assessment of the complexity of these skills and their intellectual and material conditions;
- evaluation of an ability to generate economic effects by existing in an organization resources of knowledge and sustainability of its potential;
- choice of a strategy that best uses the existing knowledge in an organization and a possibility of its increase;
- identification of missing knowledge resources and an investment in their enrichment and supplementation.

As a result of the pilot studies it has been found that the greatest potential of application in the metal industry enterprises may have strategies of knowledge listed by The American Productivity and Quality Center [5]:

- a comprehensive strategy of knowledge management (enterprise-wide) – in accordance with its guidelines, survival and development of a modern organization and its competitive abilities are conditioned by an effective knowledge management policy;
- a strategy of knowledge transfer and development of the best practices (transfer of knowledge and best practice) - aims to improve activities of an organization and use of its knowledge for offered products or services;
- a knowledge management strategy of customers (customer-focused knowledge strategy) - is based on relationship management with them and it collects, expands and transfers knowledge regarding to customers' motivation and behavior which directly shapes an organization's reactions and relations with buyers;
- a strategy of personal responsibility for knowledge (personal responsibility for knowledge) - is based on supporting individuals and groups to create knowledge and share it to ensure consistent learning of employees, and thus - expanding their competency;
- an intellectual assets management strategy (intellectual asset management) - its implementation is based on an identifying, organizing, evaluating, protecting and shaping their market value,
- a strategy of innovation and knowledge creation (innovation and knowledge creation) - its primary goal is to develop knowledge of existing resources (knowledge spiral, SECI process). It is one of the most difficult strategies requiring not only creativity and innovation but also a right organizational culture and interpersonal relations.

Knowledge strategies can be also divided due to an approach of changes. Three knowledge strategies can be distinguished from

- a category of behavioral strategies [6]:
- a passive strategy - ignore environment, minimal customization, defensive behavior;
- an active strategy – offensive changes, aimed at adapting - adaptive flexibility;
- a creative strategy - a kind of an active strategy designed to provide maximum flexibility for an organization; creative flexibility.

Such determined knowledge strategies can be analyzed in terms of developing and broadening of knowledge. Knowledge developing leads to having an expert knowledge in a chosen field, which is associated with the risk of leading to inadequacy of knowledge to a situation. Broadening of knowledge is in other words its diversification which in turn is associated with the risk of having wide knowledge but shallow as well as the creation of excess knowledge.

Another classification of a knowledge strategy due to implemented by an enterprise a demand of development is a distinctive strategy: homogenization (specialization) of knowledge and knowledge heterogenization (diversification). The knowledge specialization strategy is based on focusing on a narrow area of expertise, which by concentrating resources intensifies a competitive force. It is focused on building distinctive competencies and creating competitiveness on the grounds of their database. An important element in determining a specialization is also an assessment of the possibility of acquiring and creating knowledge resources and their ability to configure, allocate, and exploitation. A diversification strategy means expanding of existing knowledge resources what through vast existing knowledge and numerous skills reduce dependence on cyclical changes and enables a synergy effect. This strategy is more flexible, protects against the negative effects of aging of knowledge resources and gives the chance to gain independence from the volatility of the environment [7]. Both strategies can be successfully implemented in metal industry enterprises.

If an organization bases its competitive strategy on knowledge, that is, it treats it as a strategic resource it must use appropriately chosen knowledge management strategies. The knowledge management strategy requires an establishment of objectives which are prior to a knowledge management system and principles on which this system is to be based as well as means by which the system is to be created.

Properly structured knowledge management strategy should be based on the mutual fusion: people, technology and processes; and this cooperation is a practical tool for solving real problems of modern enterprises in the metal industry. Choice of an appropriate knowledge management strategy for an organisation helps to avoid problems in knowledge management or at least it minimizes their negative effects. It depends on many inter-

nal and external factors [8]. Among the external factors there are: identified competition strategies, a level and type of competitors' dominant knowledge (tactic, public), interrelationship between key competitors and their intellectual capital, competitors' skills and a method of protecting knowledge by them. However, internal factors are: mission and strategy of an organization, its intellectual capital and a level of tactic and public knowledge, as well as differences in the use of tactic and public knowledge to solve problems, its financing potential and an ability to use IT, an organization's competitive position and its organizational culture.

In the light of the research it has been established that in the metal industry great potential application have knowledge management strategies highlighted [9]:

- a knowledge creation strategy through cooperation, covering an area of new knowledge, it is non-existent for the organization and its environment. Its basic principle is to cooperate with external institutions and conducting research - development work in order to create new innovative knowledge;
- an internal creation strategy - knowledge is completely non-existent or exists only in the environment, and because of this an organization decides to produce it by itself. This strategy can also rely on an absorption and creation of knowledge in order to achieve new quality;
- an absorption strategy which is focused on knowledge acquired from the outside, already existing knowledge but in the environment of an organization. Its principals are employees' participation in courses, trainings, strategic and functional benchmarking, outsourcing, strategic alliance, etc.
- an internal dissemination strategy which includes transfer of knowledge within an organization. Tactic or public knowledge acquired by one or more of the discussed here strategies is transferred within an organization. When previously acquired knowledge is public, tools such as in case of a codification strategy are used to spread it; when acquired knowledge is tactic, a personalization strategy methods are needed for its transfer.

All four strategies are geared to generate knowledge and complement each other, which means that if an organization decides to use a knowledge creation strategy through cooperation or a knowledge absorption strategy, then it can develop and adapt it by an internal creation strategy.

M. Hansen and colleagues focusing on the process of sharing knowledge proposed a division of knowledge management strategies into: a codification strategy and a personalization strategy [10]. This division is the most commonly identified by theorists and practitioners working in the field of knowledge management in an organization. Enterprises implementing the codification strategy focus on a process of technology and explicit knowledge repeatedly using the same

knowledge stored in databases. Standard solutions based on practice dominate in solving problems. Information systems enable people to gather and share knowledge. This strategy is also known as the "people-to-documents". Using the personalization strategy, enterprises focus on innovations - man is seen as a creator of new knowledge giving it the value in action. To create unique solutions both tacit knowledge (public knowledge in minds of employees) as well as external knowledge, and the need for absorption and creation of new knowledge and its continuous processing is deeply rooted in people's minds. Information solutions are primarily to facilitate communication and relationship building but they are not treated as a base of knowledge to create new value (at most they are used to store a part of open knowledge). This strategy is also called "person-to-person". In practice, most of enterprises in the metal industry should use mixed strategies but a clear orientation must be taken - depending on a specific character of an activity.

CONCLUSION

To conclude, it should be emphasized that due to different levels of knowledge management there may occur significant differences in a type of a dominant strategy for a functional level of an organizational unit. However, strategic plans of knowledge creation should be precisely agreed for each level in terms of knowledge generation and transfer as well as used methods and means. The choice of strategy must be also correlated with existing internal conditions of an organization and ambient conditions.

Important elements of knowledge strategy include:

- which abilities and knowledge-based resources are valuable, unique and unfit to imitate;
- how these abilities and resources can and should support market position of an organization and its competitiveness;
- where these abilities and resources are located, an indication of how to acquire these abilities and resources, develop and use to achieve objectives based on an organization's strategy.

A chosen knowledge management strategy and supporting strategies are the basis for the choice of methods and means of plans implementation. The choice of specific knowledge management strategy may also result in the need for changes in an organization, particularly in the information system, internal communication, work organization and human resource management.

Several classifications of knowledge strategy and knowledge management have been discussed in the article. Nevertheless, it should be noted that in practice, it is rarely possible to base on an enterprise knowledge management strategy as the only one - however, choose one dominant and designate a supportive role to the others.

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