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Support of Knowledge Sharing in Manufacturing Companies: A Case Study

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***Abstract*—**Knowledge is considered as an important asset which can help organizations to create competitive advantage. The necessity of taking care of these assets is more important in these days – in days of turbulent changes in business environment. Knowledge could facilitate adaption to constant changes. The aim of this paper is to describe how the knowledge sharing can be supported in the manufacturing companies. The methods of case studies and grounded theory were used to present information gained by carrying out semi-structured interviews. Results show that knowledge sharing is supported in very similar ways in respondent companies.

***Keywords*—**Case Study, Human Resource Management, Knowledge, Knowledge Sharing.

I. Introduction

KNOWLEDGE plays an important role in the life of organizations in current economy. They are considered as an economic asset which helps companies to overcome constant changes in business environment. It helps companies to improve performance and ensure long-term vitality [12].

Over the years, there was a need to manage knowledge and knowledge flows. Knowledge management is composed from knowledge creation, sharing, verification and usage. It involves people, processes and technologies into particular activities. It aims to use all involved and influenced individuals [20].

Many employees do not want to share their knowledge or they do not think that knowledge sharing could be beneficial for their organization. Also managers do not want to accept fact that the role of employees and their knowledge is changed. Practices and activities of Human Resource Management could help to motivate employees to share their knowledge.

We set research question:

RQ: What is the targeted support of knowledge sharing?

Data were obtained through semi-structured interviews conducted in manufacturing companies. Results are presented in form of case studies. Also the grounded theory was used for examining the data gained through interviews.

We found out that there are many ways how to support information and knowledge sharing in real business life. One of the most effective possibilities is to set business culture which can support knowledge sharing. It is also necessary to implement a sophisticated reward system.

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II. Literature review

A. Knowledge

Knowledge could be defined by using hierarchical relationship between data, information and knowledge [15]. The knowledge is at the top of this pyramid. The knowledge is the information transformed into a usable form. It could be gained by learning through personal experience. It is a necessary base for making decisions [6].

Knowledge could be divided into two main groups – explicit and tacit. The first group is created by knowledge which could be stored and transmitted without loss of meaning. It could be labeled as formal or systematic. Tacit knowledge is based on personal experience of each individual. It could be difficult to transfer it. It consists of mental models, beliefs and perspectives and it is very difficult to express it [13], [15].

Knowledge is a key to creating a sustainable competitive advantage [4], [8]. A need to manage knowledge resources and knowledge flows gave a cause to formation of knowledge management. Knowledge management should be defined as a deliberate strategy to give right knowledge to right persons in right time and to help people to share information and use them in the way which can lead to improving of organizational performance [14]. Reference [6] then defines knowledge management as purposeful management of creation, sharing and usage of knowledge.

Reference [16] states that the main purpose of knowledge management is to maximize effectiveness of the company linked to knowledge and productivity of knowledge assets and their constant renewal. Knowledge management is systematic, explicit and deliberate management of creation, renewal and application of knowledge, thus management of effective knowledge processes.

Reference [11] presents that knowledge management could be understood as a summation of methods and procedures which are available for managers to managing of knowledge accessible in their organizations. Knowledge management is deliberate activity which aims to ensure right knowledge for right persons in time when they need it.

B. Knowledge Sharing

Knowledge sharing is a process when knowledge is made accessible to other individuals in the company [9] or when individuals share information, ideas, suggestions or expertise which could be beneficial for organization [3]. In this context, knowledge on individual level is stressed. Only individual

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knowledge could be shared. Willingness of employees to share knowledge is essential. For purpose of sharing, knowledge is converted into form when it could be understood, absorbed and finally used by its recipient.

Sharing of tacit knowledge is problematic with respect to its form and difficult expression. Reference [11] lists three ways how tacit knowledge could be shared. The first possibility is story telling. The teller outlines his/her experience to his/her listener. He/She tries to describe his/her experience with symbols and analogies. Basis is trust between teller and listener and ability of teller to drag listener in story what enable them to feel emotions. Apprenticeship is the second possibility. A teacher gives to his/her pupil his or her experience for several years and supervises him/her while he or she is preparing for separate operation. Communities of Practices are the last option. The communities are groups of people who share interest in same problems and try to solve given problem.

Reference [3] lists four main mechanisms for knowledge sharing between individuals. Firstly, the individual can contribute his or her knowledge to organizational database. Secondly, knowledge could be shared through formal interactions in teams of working groups. Next possibility is to share knowledge within informal occasions and interactions. Lastly, the communities of practices could be employed.

C. Support of Knowledge Sharing through HRM Activities

Practices and systems of Human Resource Management could play the main role in supporting of employees, their skills and behavior to improvement of organizational performance. The most important assumption is to use the practices to attract and sustain knowledge employees. Activities of Human Resource Management should be supplement with activities of knowledge management which can ensure development of skills and competencies of employees [1].

Close relationship between practices of Human Resource management and knowledge management is confirmed also in [10]. Human Resource Management practices could lead to increasing of motivation of employees to share knowledge. Reference [10] states that these practices could be recruitment, work organization, offering opportunities for both formal and informal knowledge sharing, open organizational structure and targeted cooperation with older, experienced employees and also an elaborate system of rewards.

Human Resource Management can significantly contribute to development of qualification in learning management and reuse of knowledge. Human Resource Management is also key for development and remaining of learning view through sustaining constant learning, identification of knowledge sources of employees, understanding to mediators who sustain knowledge sharing and enable free access to information to employees [7].

Generally speaking, it is necessary to create an environment suitable for knowledge sharing and creation of social capital. This includes creation of system which enables knowledge sharing, acceptance of organizational structure facilitating information flows, social networks and interdisciplinary interactions [5]. Also [2] agrees with necessity to create suitable organizational structure.

Reference [17] states that every company has to start with employees' training if would like to become a knowledge company. The main point is to engage training which develops creativity – team building or empowerment of position. These activities lead to improvement of transfer, documentation and creation of knowledge. Empowerment of position or authorization to certain task gives to employees feeling of power and gives them more flexibility for knowledge creation and innovations. Training focused on techniques and tools for solving problems is also suitable for creations, sharing and preservation of knowledge. On the other hand, use of statistical tools like relationship diagram, tree diagram or matrix diagram can streamline data collection and subsequent analysis of these data. Created database becomes a base for organizational learning and creation of new knowledge.

Lots of employees are afraid of knowledge sharing. They are afraid of threatening of their position in the organization, loss of unique knowledge [18]. That is the reason why it is necessary to implement suitable system of rewards for employees to encourage them to share their knowledge.

Reward system which should be focused on rewarding of risk-taking in order to support creativity and problem solving and rewarding of working groups and exchange of knowledge within a group. Reference [17] states that attitude based on competitiveness is inappropriate for development of support system for knowledge sharing. Competitiveness could lead to totally different effect. That means that employees will refuse cooperation with others in order to be the best ones. The reward should be based on individual contribution to performance of working group, knowledge sharing and innovative attitude to work.

III. Methodology

The aim of this paper is to describe how the knowledge sharing could be supported in manufacturing companies. The research question was set:

RQ: What is the targeted support of knowledge sharing?

The method of case study was used. The case study could combine methods of data collection such as archives, interviews, questionnaires, and observation [21].

The method of semi structured interview was employed for data collection. Interviews were conducted with responsible persons in two manufacturing companies in Zlin region. Both of these companies are international companies – one produces tyres and the second one modular houses. The first interview was carried out with HR specialist and the second one with director. Both interviews took about 30 minutes. Respondents were asked seven open questions related with knowledge sharing, support of knowledge sharing, benefits and costs of this support and its measurement. Preparation of these questions was based on literature review.

Information gained within interviews was transcribed. Grounded theory was employed for its analysis. This theory is based on using codes for tagging segments of text. After that,

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text segments are sorted with similar content in to separate categories [19]. Results acquired by coding of information were graphically illustrated in the scheme.

IV. Results

The following case studies are focused on defining of knowledge sharing in respondent companies, activities which are conducted to support knowledge sharing and costs and benefits related to these activities.

A. The First Case Study

Knowledge sharing works in both directions in the first company. Regular meetings are the core of the business live of this company. Managers, representatives of middle management and representatives of employees meet in regular intervals. These meetings serve as an opportunity how to share information and knowledge from the top to the bottom and vice versa.

They have employed reward system for improvement proposals in this company. Employees who suggest any improvement idea get financial reward.

In this company, they announce a competition for project plans every year. This supports creation of multidisciplinary teams which can cooperate on preparation of project plan. The project plans has to be presented in front of management board. The emphasis is inter alia placed on planned benefits after completion of the project. They choose three or four projects every year. The production manager has budget for rewards paid to projects teams. These rewards are handed to leaders of the project teams after successful finishing of the projects.

This company has subsidiary companies in the USA so they organize international exchange internships for their employees. They also provide workshops focused on certain topic.

For support of sharing of tacit knowledge, they use system of certification bonuses. Every employee who works in the company more than three years can ask for this bonus which increases hourly wage. This bonus could be paid to employee who controls a particular activity. First of all, he or she has to pass written test. Then he/she has to demonstrate that he/she is able to perform this activity. For gaining the certification bonus is necessary to show that he or she is capable of teaching other employees this activity.

As the most important contribution of supporting activities of knowledge sharing could be considered speed of knowledge shared. If there is any problem in the company the production manager gets the information from the employees as soon as possible and can start with solving of this problem immediately.

To think about costs caused by not sharing of knowledge is more important than to consider costs expended on support of knowledge sharing.

B. The Second Case Study

The term knowledge sharing is understood in totally different way in the second company. Knowledge could be shared just on the same level. That means between managers or between operatives. Sharing of information from top to down could be seen just as managing or education. Sharing of knowledge bottom-up could lead to improvement.

To distinguish between information and assumption is very important in this company. Based on experience of this company, it is necessary to prove every assumption before anybody start to act according this assumption. This action could cause only extra costs if the assumption is not right.

Knowledge sharing is based on company culture set in this company. Everything aims to knowledge sharing support. The internal know-how how to support knowledge sharing is to set certain processes how to solve certain situation. Managers share their knowledge on regular meetings and knowledge is also shared within every division. The next step in the future will be creation of a database where the knowledge needed should be found under a keyword.

Management of this company realizes that the knowledge is a property of certain people and they are not willing to share the knowledge. The working groups are called the teams. The sporting terminology is very helpful to motivate to knowledge sharing.

Employees are motivated to share knowledge through great and small improvement ideas. The great improvements are appreciated with financial rewards. This reward could be up to 15% of saved money based on the improvement idea. It is necessary to announce publicly in the company that the certain improvement was realized based on improvement idea of certain employee because this could motivate people to share their knowledge. The small improvements could be evaluated just in workshop by foreman who can hand out a voucher exchangeable immediately for money.

Benefits of knowledge sharing are most significant in industrial engineering. There is a fruitful cooperation between sales department and production. The benefits can then be quantified financially. Second way how to express benefits is through time saved. Time saving is significant especially in field of information technology where knowledge how to work with certain program could save a lot of work.

Costs of knowledge sharing relate especially to creation of database. There are also costs connected with rewards for improvement ideas in this company.

C. Grounded Theory

Based on interviews carried out, there are three main areas connected with knowledge sharing and its support in these companies.

The knowledge sharing is linked with many supporting activities of human resource management. The most important one is company culture which can motivate employees to share their knowledge. Also elaborated reward system is very supportive. Knowledge then should be shared through meetings, workshops, projects or improvement proposals. An important attribute of knowledge sharing is speed of sharing.

Benefits on knowledge sharing are seen in increased efficiency of production and higher productivity. These benefits could be measured by financial and also non-financial

measures.

It is important to realize that costs of knowledge sharing could be caused by not sharing. For example, if any employee does not share his/her knowledge about production process there will not be any improvement idea and any saved money.

Fig. 1 shows the results in illustrative scheme.

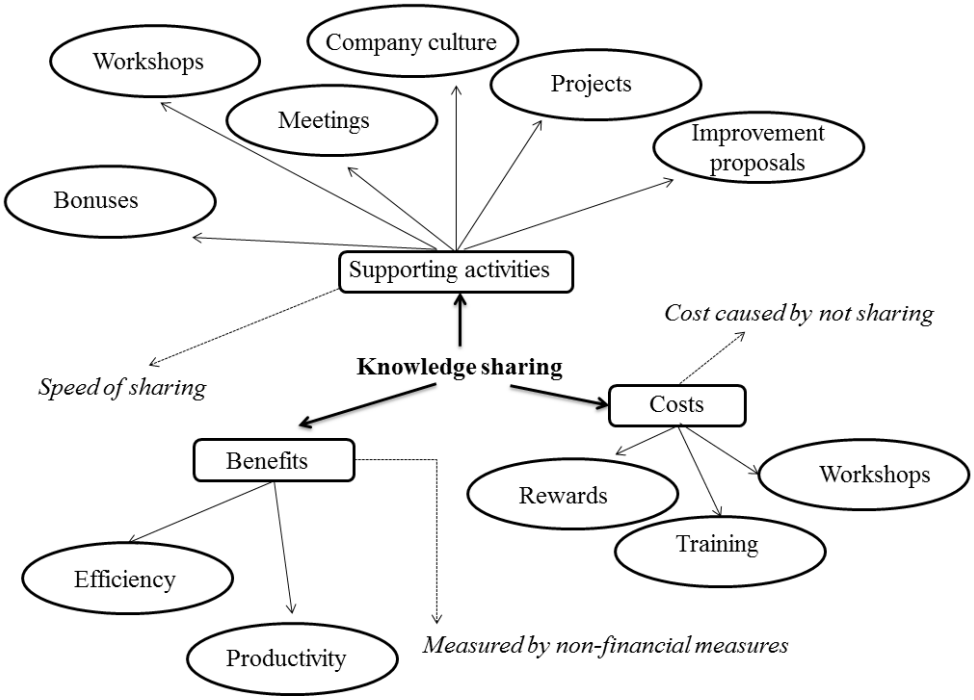


Fig. 1 Knowledge sharing scheme (own results)

V. Discussion

According to literature review, there are many ways how to define the knowledge sharing. The respondents were asked to describe the knowledge sharing in their companies. Knowledge sharing is considered as a very important part of live of these companies but the definitions of knowledge sharing differ. The decisive factor is the direction of knowledge sharing.

Management in both of questioning companies is interested in knowledge sharing. They realized that the most important factor which can support sharing of knowledge is company culture. This is consistent with conclusion of [5] and [2]. Respondents use many activities to support knowledge sharing – projects, improvement ideas or multidisciplinary teams. The last option is similar to Communities of Practice mentioned in [11]. According to the answers of the respondents, it is very important to care about exceptional knowledge or experience of the company and try to motivate employees to share this knowledge. The sharing of tacit knowledge is focused on sharing of knowledge of management and workers. Financial rewards are used in both companies.

The speed of sharing of knowledge is considered as the most important benefit of support of knowledge sharing.

Benefits of knowledge sharing could be measured by financial measures – by savings in costs but also by non-financial measures – increased productivity or efficiency, these could be also reflected into financial savings or non-financial measures focused on number of ideas or projects.

The most important disadvantage of sharing knowledge is not to share knowledge.

This research is limited by number of interviews carried out. In future research, we would like to perform more interviews and get more information about how the knowledge is shared and how the knowledge sharing is supported in companies. These interviews could lead to creation of a system of targeted support of knowledge sharing.

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