

BARRIERS TO KNOWLEDGE SHARING IN THE FIELD OF INFORMATION SECURITY

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Abstract:

Today, sharing knowledge requires taking into account many aspects. Variable environmental conditions, the people factor, and the security of resources are just a few that should be considered for a noticeable improvement in the functioning of the company. Supporting this course of action requires the identification of all barriers that may exist in the enterprise. Only the owner and senior management by establishing system and organizational changes can influence this element of the business. The aim of the article is to indicate the problems in this respect that block the proper functioning of the company in the field of information and knowledge exchange. The survey was conducted with the help of a questionnaire among 189 respondents. The industry has significantly decreased in the last few decades, currently there are 307 companies operating in Poland. Conclusions from the conducted research were collected on the basis of a questionnaire survey. The further stage of the research will be to compare the collected results with the results from Western European countries.

Key words: *knowledge sharing, information security, knowledge management*

INTRODUCTION

Safety is a continuous process in which enterprises try to improve mechanisms that give them a sense of which enterprises understand in a variety of ways, providing employees with the best technological and IT solutions, solutions for occupational health and safety as well as various training also in the field of safety [1]. A reflection of understanding and treating security as a key area of interest for enterprises can be found in their actions in the face of threats [2]. These activities are difficult and expensive tasks, which in many cases can be the reason for their failure [3, 4].

The aim of the paper is to indicate the problems of the knowledge sharing in the enterprise in the proper manner. Conclusions from the conducted research were collected on the basis of a questionnaire survey.

LITERATURE REVIEW

Security is not often taken seriously, in the right way when it comes to information and information systems, exchange of information and knowledge. It should be emphasized that ensuring security for every user of the information and IT system should be one of the priorities [3, 4, 5]. Each company strives to secure its data and information in the best possible way. In order to improve IT

security, all existing security measures should be applied, staff should be trained in their proper use, as well as the security of data stored in ICT systems using appropriate security programs [6]. The role and importance of information and knowledge exchange are also underestimated in the enterprise, which must determine what are the structures in the enterprise related to information and knowledge security management (who has management functions, who is operational (executive) and who controls) [7, 8]. It must clearly describe the tasks and interrelationships of these bodies. Their responsibility as well as their competence in making decisions should be clarified [9, 10, 11]. Information security is also important from the point of view of technological information and information provided by the customer [12, 13, 14, 15, 16]. This inevitably leads to benefits for the company, as well as proper process management [17, 18]. The analysis of the literature makes it possible to identify barriers, problems faced by entrepreneurs, while there is no research identifying companies for production and service or what would be a better solution for industries. After all, each work using its own information exchange solutions and IT systems faces different problems. The research carried out serves a specific industry.

KNOWLEDGE MANAGEMENT IN AN ENTERPRISE

Knowledge management was created as a result of underestimating the role of information in creating and improving knowledge in the enterprise. Knowledge management is firmly embedded in the information potential of the organization [19, 20, 21]. And worth to highlight, that a competing values in enterprise is organizational culture and willingness to share knowledge [22, 23, 24]. Information management tools are the dominant component of knowledge management tools. T. Davenport emphasizes that there is no doubt that knowledge management has incorporated much of information management [25, 26, 27, 28, 29, 30]. The course of such a conversion is cyclical, as shown in Figure 1.

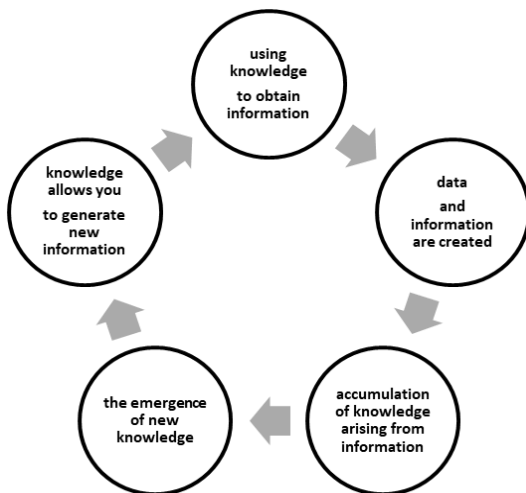


Fig. 1 Cycle of conversion data – information – knowledge

Source: Zygała R., *Basics of information management in an enterprise*, Wyd. AE in Wrocław, Wrocław, 2007.

It can be concluded that information management and knowledge management are somewhat similar despite many differences. First of all, the resources of knowledge and information are to a large extent the same, so it is difficult to define a clear boundary between them.

Knowledge management systems perform a number of tasks, including [21]:

- facilitating the acquisition of knowledge from many incoming information to the enterprise,
- preventing loss of knowledge in the event of a worker leaving,
- help in continuous improvement through gaining knowledge to prevent making the same mistakes,
- increasing the efficiency of management through the process of acquiring new knowledge by employees and ensuring its correct use at work,
- allowing employees to share knowledge,
- raising the level of enterprise innovation.

Knowledge management systems use many different information technology tools that allow for more effective operation of the company. Information technologies used in enterprises include [31]:

- database,
- intranet internal networks,
- email,
- Internet browsers.

SHARING INFORMATION AND KNOWLEDGE IN THE ENTERPRISE

Today, the growing importance of knowledge as a factor in personal and organizational development, but also as a factor of competition between employees can be observed. Contemporary civilization changes, social and technological means that knowledge is democratized and becomes available to broad social groups in a very short time. The importance of the Internet and other tools to generate and store huge amounts of information cannot be overestimated [10]. Despite the availability and learning possibilities, some occupations or activities require work under supervision, education under the guidance of an experienced employee. Increasingly, "new" employees complain about the reluctance to share knowledge about activities in the workplace, but also about the lack of communication regarding the organization of activities and many others. The role of the organization is to create conditions for employees to engage in knowledge-sharing behaviors. There are many factors that determine knowledge sharing [32]:

- Motivation, willingness of employees to undertake behaviors related to knowledge sharing (the sender and recipient perspective).
- Capabilities - conditions that organizations create to allow knowledge sharing to take place assuming the appropriate motivation of participating entities, including time, climate.
- Specificity of knowledge and acquired forms of sharing.

The issue of knowledge sharing barriers has been quite extensively researched and described in the literature, because the identification of key determinants of employee/people behavior is the basis for action by the management to modify and stimulate these behaviors and design knowledge-sharing practices tailored to the present conditions [5, 33].

METHODOLOGY OF RESEARCH

For this analysis, the basic method of a diagnostic survey, a questionnaire, was used, without the participation of the interviewer. This allowed to reach a wide audience while maintaining anonymity and made it possible to assume a high level of credibility of the information obtained. The research questionnaire consisted of 14 closed questions and 12 disjunctive and conjunctive questions. The survey was conducted from March to December 2020 in the Republic of Poland in medium and large enterprises among owners or senior managers. All companies belong to the metal or metallurgical industry, the questionnaires were sent out in paper and electronic form. 189 correctly completed questionnaires were obtained. The size of the research sample accounts for over 50% of all medium and large-sized enterprises in the country, therefore it is a representative sample. Allowing the general that we are talking about the industry in the country. The expected size of the research sample was larger, but the reluctance to complete the questionnaires, the subject of the survey related

to knowledge sharing and the development of the pandemic contributed to the low motivation of the survey response. Information from the survey records is presented in Table 1.

Table 1
Survey results - structure of responses

	number of responses	percentage indicator
age category		
< 25 years	6	3%
26 – 35 years	16	8%
36 – 45 years	67	35%
46 – 55 years	52	28%
> 55 years	48	25%
position held		
manager	65	34%
owner	124	64%
the existence of the enterprise		
up to 5 years	20	11%
6 – 10 years	62	33%
11 – 20 years	68	36%
over 20 years	39	21%
respondents	189	

Knowledge is not only a resource that people gain at school or training. Employees learn every day. The survey on knowledge management, employees' awareness of the security of information and knowledge resources as well as the company's security strategy in this area was conducted among the employees of the surveyed company. Respondents answered a question about their knowledge (Figure 2).

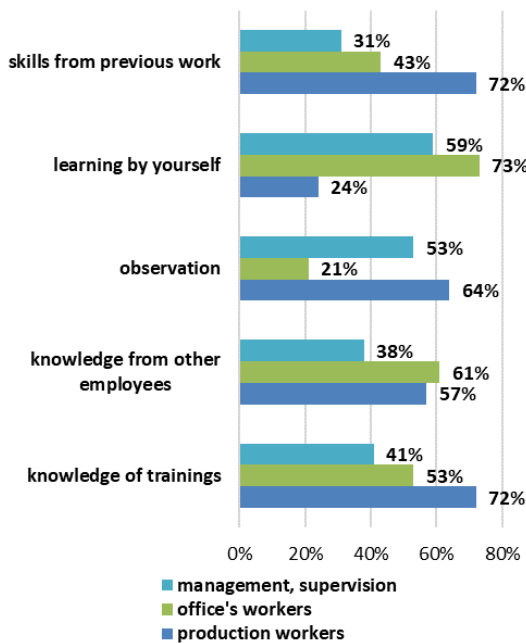


Fig. 2 Sources of knowledge possessed by employees

Employees working on production focus more on their knowledge and skills based on observation of activities performed by other employees or have this knowledge from their previous work. Office employees themselves expand their knowledge, search for information in indus-

try magazines and the Internet. They rarely have the opportunity to observe the work of others, they are also reluctant to share their knowledge. The management usually broadens its own knowledge on its own, rarely the previous work requires identical solutions, so only the knowledge in the previous work can be used rudely. Figure 3 shows the percentage impact of individual factors on the safety of information and knowledge. It shows that despite the hackers' attacks being publicized by the media, real threats lie within the enterprise. Employees are the perpetrators of such abuses. It can even be said that the majority of all hazards arise from the human factor. A special role belongs to people responsible for the proper functioning of IT systems, service and consultants. Threats result from mistakes and mistakes of a man, ignorance, poor organization, and fatigue.

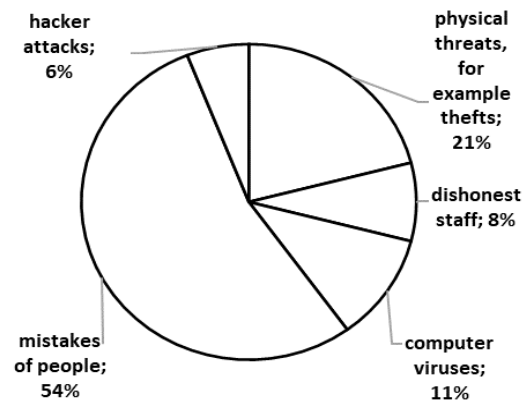


Fig. 3 Sources of security threats

The issue of knowledge sharing barriers has been quite extensively researched and described in the literature, because the identification of key determinants of employee behavior is the basis for action by the management to modify and stimulate these behaviors and design knowledge-sharing practices tailored to the organization's conditions. However, the specifics of the surveyed enterprise require determining employees' awareness of existing knowledge sharing barriers (Fig. 4).

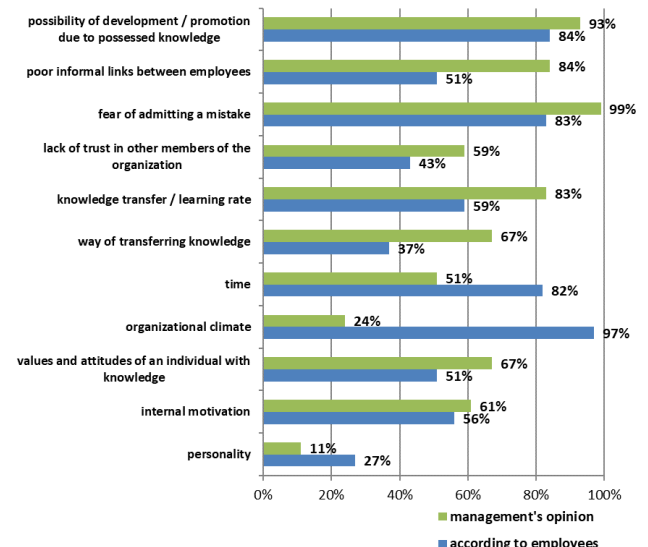


Fig. 4 Barriers knowledge sharing from the point of view of employees and management

The first issue in the employee awareness survey concerned the importance of information resources and employee knowledge. The company's employees answered the following question: "what resources are the most important from the point of view of their security?" (Fig. 5).

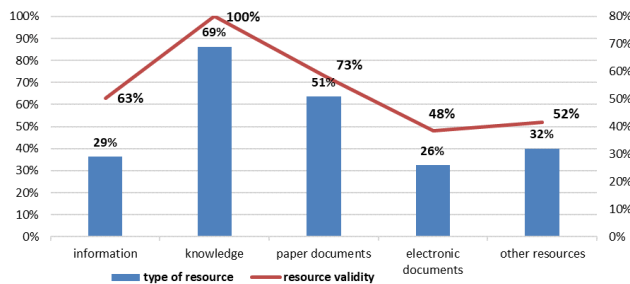


Fig. 5 The most important resources of the company from the point of view of employees

Employees perceive the importance of knowledge, which is associated with the long-term application of an appropriate approach to the knowledge held by employees. They also emphasize the importance of storage, commercial or anti-virus software, because during their implementation in enterprises a training was carried out, which allowed employees not only to become familiar with software support, but also made their role to ensure safety [34]. Employees believe that the weakest element of resources is the human factor, which in their understanding does not threaten enterprises.

For correct management of information and knowledge in the enterprise, which is the basis for ensuring information security, it seems advisable to examine satisfaction with information and knowledge management among employees. The respondents gave the following answers to this question (Figure 6).

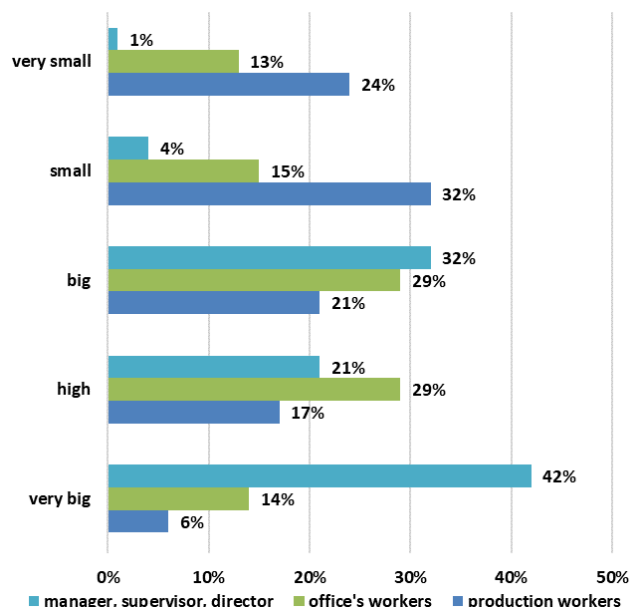


Fig. 6 Employee satisfaction with information management in the surveyed enterprises

The study showed that office employees and management understand the importance of information and knowledge management for the proper functioning of a

company. Only part of the production personnel of the examined enterprises does not recognize the importance of information and knowledge management for enterprises. The next stage of the study was a case study that took place in the studied enterprise. The causes of the problem are described in Figure 7.

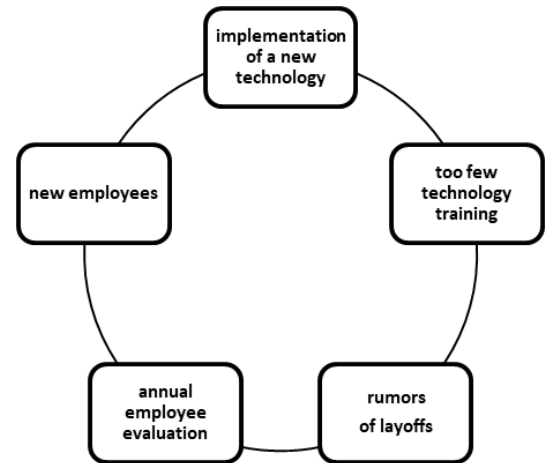


Fig. 7 The reasons for the lack of knowledge sharing that have had the greatest impact on the enterprise

Creating a company security system is a continuous process. It is important that employees take part in creating this system, have a sense of what knowledge and how they can pass on to colleagues. The effective functioning of a security system in an enterprise largely depends on the ability to properly prepare the necessary organization of work and documentation containing guidelines for the company's operations in ensuring the required level of security. The results regarding the knowledge of these principles are presented in Figure 8.

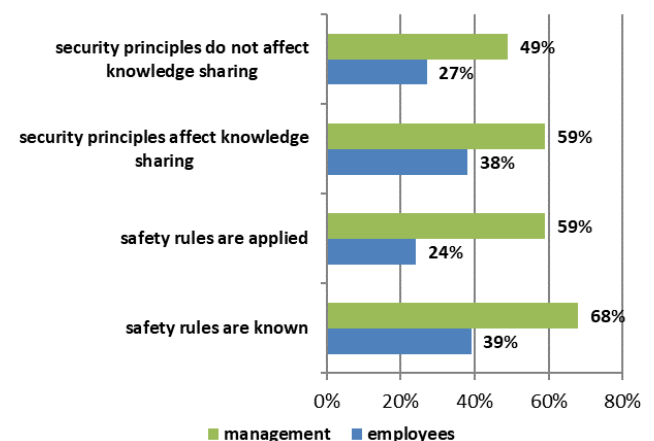


Fig. 8 Knowledge of the principles of managing information and knowledge in the company by employees

Practicing in the organization of knowledge sharing also contributes to maintaining employees in the organization, thereby achieving a sense of bond and belonging, the community forming the company. Barriers arising from the security of information and knowledge resources, instilled in employees as compliance with economic espionage and technology protection, caused a lot of damage [29]. The employees themselves emphasize that they felt

helpless not able to distinguish what information and knowledge they can pass on and to whom they can pass it on. Ensuring security has therefore harmed the fear of sharing knowledge [10].

CONCLUSIONS

In the era of growing importance of cooperation and teamwork, knowledge sharing is an important factor in the development of an organization. Exchange of knowledge between employees is a low-cost way of raising employee competences. At the same time, it should be noted that sharing knowledge is always a process that takes place between people, it is necessary to separate the security of information and knowledge resources and their sharing between colleagues.

The more the effects of knowledge sharing are not noticeable by a single employee, the better the effect in the form of tasks performed can be expected. It is necessary that the companies supported the behaviors related to knowledge sharing and create directly felt effects for a given entity (e.g. recognition, rewards for desired behavior). The task of the management is to create conditions for knowledge exchange, taking care of employees' awareness of what is the security of information resources and enterprise knowledge, and what sharing with colleagues. However, this is a difficult and lengthy process.

During the research, it was identified that they were associated with the lack of technological skills in operating programs and the low awareness of employees who were afraid that sharing knowledge would make them redundant for the company. In-depth research on awareness will be one of the stages of subsequent research.

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