

KNOWLEDGE MANAGEMENT IN THE CONTEXT OF IMPROVEMENT OF LOGISTICS

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Abstract

Proper implementation of the objectives and tasks of logistics and logistics management requires the gathering of appropriate resources, both material and immaterial. These resources are part of the (sometimes shared) many processes carried out in the enterprise, that mutual synergistic interaction largely determines the size of the financial result. A properly functioning logistics system can thus support the proper functioning of enterprises, but at the same time a number of other systems may have a positive or negative influence on it. Appropriate coordination of individual processes is possible only with a thorough understanding of the goals set before them and the role attributed to them in the enterprise. The key issue in this context is the proper management of knowledge and its associated processes. Correct, consistent with the current and future capabilities and objectives of the enterprise and the requirements of the environment, acquisition, dissemination and development of knowledge, can contribute to the synchronized targeting of the company's activities in all areas of its operation. The strategic role in this type of activities is played by people that are the only resource of a subjective nature with the capacity to make decisions and create and exploit the enterprise potential. This study attempts to analyze selected issues related to the company's management style, the existing variant of the organizational structure and the general assumptions of the knowledge management system. The main goal of the study was to identify trends and dependencies between these factors in the context of knowledge management from the point of view of improving logistics processes. The research, using the questionnaire, involved 105 enterprises (both production and service). In individual enterprise the questionnaire was each time filled in by the representative of the company's top management.

Keywords: Logistics, human capital, management of knowledge

1. INTRODUCTION

Effective management of a enterprise is currently a difficult and complex task. The number of variables that should be taken into account when analyzing the reasons for success or failure is becoming increasingly larger. Market phenomena, often of a turbulent nature, develop on the basis of complex and in many cases not fully explained mechanisms. At the same time, the level of connections between these variables increases, which is often accompanied by difficulties to identify and understand the nature of the relationship or influence. Therefore, determining the cause and effect relationships, so useful in the management process, is not always fully possible and the effects of actions taken must be measured indirectly due to the lack of direct methods. In this reality, enterprises must have the ability to continuously improve in all processes and create a system in which these activities are mutually coupled in a way that increases the likelihood of a synergistic effect. One of the effects of such a situation is the departure from a typically subjective approach to shaping the economic result of an enterprise based solely on financial, technical and technological resources for increasing the role of intangible assets in the processes of building a competitive advantage. The basic capabilities of modern enterprises depend on the ability to create, transmit, integrate and use knowledge [1]. It is a key element enabling the identification and effective use of accumulated potential. Knowledge arises as a result of interactions between people and is, by its very nature, very dynamic (it is needed to create the future but becomes obsolete at the time of its creation), also provides a social basis for business management, directing them to do what is good and appropriate for the enterprise and society [2]. Knowledge-based management



complements traditional management schools by introducing a new way of thinking in relation to three dimensions [2]: placing people at the center of the strategy, treating the strategy as a dynamic process, having a social program. Proper use of the knowledge resources they possess allows enterprises to obtain a variety of different benefits, of which the most important include: building effective value chains, better recognition of employee competencies and more effective use of them, as well as developing specific market advantages. According to the results of long-term research [3], enterprises that had a stable fiscal policy on higher priority expenditure on knowledge and organizational capital, achieved better financial results over the 25 years of the study.

Many elements in the knowledge management are also common in logistics management processes. What is more, their goals overlap in many areas. The basic goal of logistics management - in line with theories presented in the subject literature - is to maximize the value provided to clients while minimizing the costs incurred as a result of managing all the related activities of the flow of materials and goods from supply sources to the finished product user [4]. The logistics system functions practically within the whole enterprise, contributing to the creation of series of relations between individual elements of the enterprise [5]. One of the main tasks of logistics is to thoroughly learn about various types of logistics processes, their mutual relationships and relations of logistics processes with other areas of management [6]. Following the occurrence of these relations, the logistics system significantly contributes to the implementation of strategic and tactical goals set by the management staff [7]. From the point of view of logistics management effectiveness, it is necessary for the knowledge management system to support the implemented logistics processes in a planned, conscious manner and correlated with other areas of the enterprise functioning. This system must take into account the need to streamline logistics processes in five basic areas: economic, technical, organizational, social and ecological [8].

Currently, one can observe significant changes in knowledge management expressed by the customer-oriented approach [9], in which the customer is perceived as the most important source of knowledge [10], his approach more often goes beyond the traditional and he also actively engages in co-creating value with the enterprise [11]. The enterprise interacts with customer through a very large number of contact points, and each such interaction contributes to changes (of varying scale and importance), which must be continuously analyzed and implemented in the way the company operates and makes decisions. These changes require enterprises to integrate many business functions, and even with external partners, so that it is possible to create and deliver positive experiences to customer [12]. It should be mentioned that the customer involvement in the enterprise improvement process can be expressed in three ways: as a source of information, as a co-creator and as an innovator. Each of these forms of customer involvement should be based on different ways of using his knowledge, which in turn will strongly depend on the nature of the customer knowledge, knowledge management strategy in the enterprise and organizational support for the implementation of knowledge management [11].

All activities undertaken as part of knowledge management should lead to intensification of improvement processes in the enterprise in every area of its functioning, including the area of logistics. It includes not only generating knowledge but also a methodology of conduct, understood as a more efficient operation, allowing greater use of the potential accumulated in the enterprise and the knowledge gained from the environment. In general, streamlining improvement processes and intensifying pro-innovation activities are possible thanks to several basic factors [13]: creating a structural solution supported by a properly structured organizational culture, concentrating on maintaining an appropriate pace of innovative processes, increasing the use of data access systems conducive to lowering production costs, improving company skills in terms of absorbing and implementing ideas from external sources, as well as seeking inspiration in a way that goes beyond the networks operating within the enterprise.

The results presented in this article are part of a study aimed at identifying good (effective) and bad practices in managing people and knowledge in Polish enterprises, inter alia, in the context of the proper implementation



of logistic functions. An attempt was also made to identify and characterize the relationships between the size of the enterprise and the specifics of its operations, and the way managers approach issues related directly or indirectly to knowledge management. Selection of research facilities was based on a few basic criteria: (a) there must be functioning knowledge management mechanisms in the enterprise, (b) knowledge management system must be consciously introduced and located in the company's strategy, (c) employment must be stable for at least two years. The study was conducted on a group of 105 enterprise located in the southern part of Poland, mostly in the province of Silesia and Malopolska. The research sample included both production (59) and service (46) enterprises. In addition, when analyzing the data in this study, the enterprise size criterion was applied, divided into small entities (up to 49 employees), medium (from 50 to 249 employees) and large (over 250 employees). The study used a questionnaire research concerning the four basic areas (each time the representatives of the top management were surveyed, who on the bipolar scale of -5 to 5 were to indicate the value most suited to the situation in a given enterprise at the defined extreme values):

- general assumptions of knowledge management (5 questions: 1. strategic goals: clear or hidden from employees, 2. the nature of the enterprise activities: active or passive, 3. improvement processes: continuous or depending on the needs, 4. knowledge acquisition: purchase or creation, 5. type of knowledge: codified or personalized),
- structural and organizational solutions (5 questions: 1. organizational structure: flat or slim, 2. priority forms of communication: informal or formal, 3. information exchange: free or hierarchical, 4. space management: hierarchical or task-oriented, 5. developing rules: hierarchical or participatory),
- communication and knowledge transfer system (3 questions: 1. knowledge transfer: push or pull, 2. memory type: collective, individual, 3. obtaining information: easy or difficult),
- human resources management (5 questions: 1. meetings with managers: frequent or rare, 2. working conditions, shaped or direct control, 3. human resources development: human capital or sieve model, 4. working mode: individual or group, 5. interpersonal relations: cooperation or competition).

2. THE ANALYSIS OF RESULTS

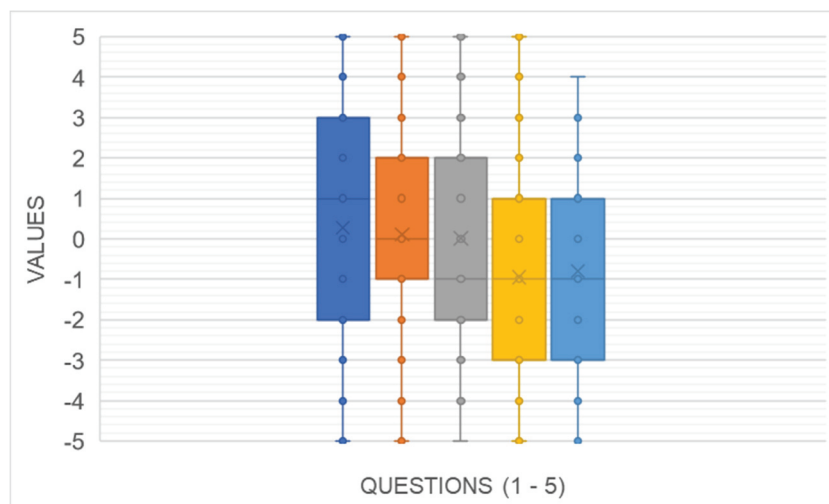


Figure 1 List of answers regarding issues 1 - 5

Figure 1 presents the results of the first part of the study focusing on the strategic aspects. It was found that in the majority of the surveyed enterprises, the strategic objectives are unclear to the employees and hidden from them (Question 1). At the same time, enterprises prefer to run their business based on passive rather than active operations (Question 2), although the average of the answers was very close to 0, and the median was 0. The effect of such an attitude was taking actions depending on needs and not based on continuous



improvement programs (Question 3), although in the group of production enterprises the average answer was -0.1. Enterprises were more likely to purchase the required knowledge than to create it themselves (Question 4) - for both manufacturing and service companies the average value was -1. At the same time, the strategy of knowledge codification dominates (Question 5) - the maximum value obtained for the personalization strategy in the group of production enterprises was only 3.

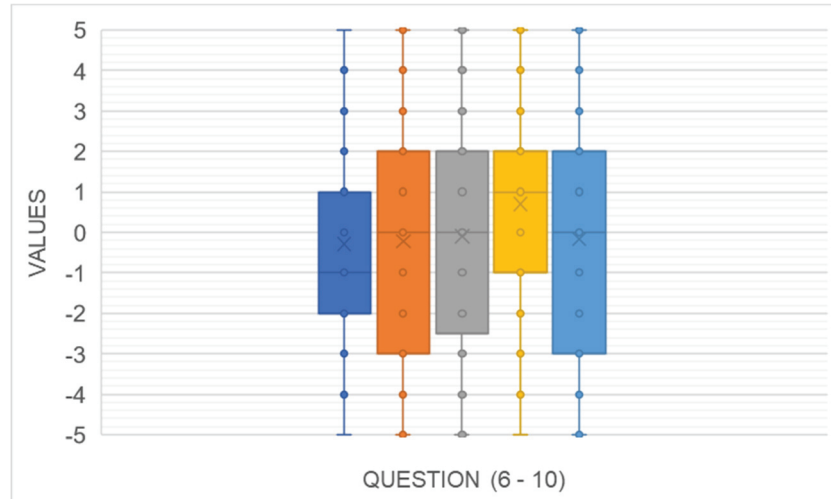


Figure 2 List of answers regarding issues 6 - 10

Figure 2 presents the results of research from the part characterizing the organizational solution occurring in enterprises. In the majority of surveyed entities, there is - in line with current market standards - a flat management structure (Question 6). In the group of service enterprises, a very strong emphasis was put on the use of informal structures (Question 7) expressing the average at -1.3 and a median of -2. At the same time, in manufacturing enterprises, emphasis was placed on formal structures (average 0.52, median 1). A slight discrepancy in trends was also found in the context of information exchange (Question 8), which for service enterprises was rather free (mean -0.3) and production formal (0.1) - in both cases the median was 0. Space management (Question 9) was rather task-oriented, but this tendency was much more pronounced in the group of service enterprises (average 1.23 and the minimum value only -2). An interesting distribution of data was observed regarding the development of principles (Question 10), which in service enterprises was rather hierarchical (average 0.8 and median 1) and production participative (average -0.9, median -1).

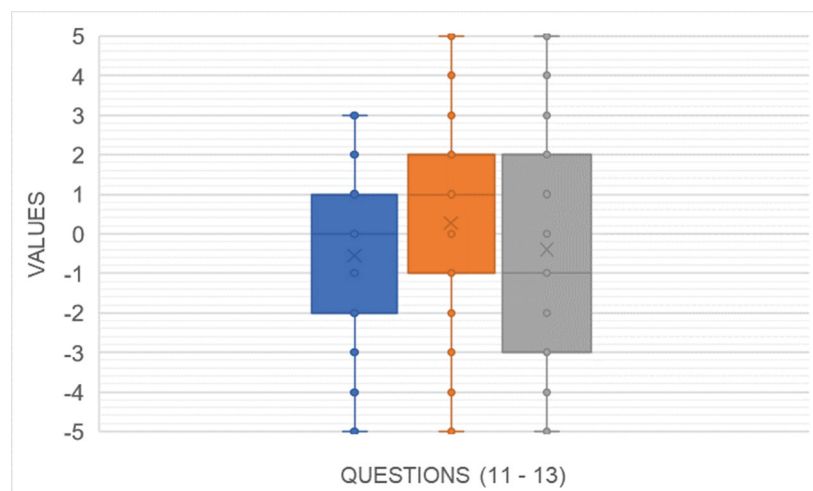


Figure 3 List of answers regarding issues 11 - 13

Figure 3 contains the results of research regarding the general strategy of knowledge management in enterprises. In general, there is a strategy of obtruding knowledge in the subjects under analysis rather than extracting it (Question 11), although this result is the effect of very targeted responses in the group of manufacturing enterprises (average -1, maximal value 2), because in service enterprises the data distribution was more similar to 0 (mean 0.18, median 0). Discrepancy in the data distribution was also found in the context of the type of preferred memory (Question 12), which for production enterprises was collective (average -0.7) and services definitely individual (average 1.55, minimum value -2). In both types of enterprises, emphasis is placed on the ease of obtaining the information required by employees (Question 13), although in service enterprises the activities in this area are more intense.

The last group of examined issues was about interpersonal issues and cooperation principles (**Figure 4**). The group of surveyed enterprises is dominated by styles based on frequent meetings with managers (Question 14) and rather direct control of work than shaping working conditions (Question 15). An important discrepancy in the data distribution was found in the context of the human resources management model (Question 16), which in service enterprises was based on selection (average 0.77, median 1) and in production by education of successors (average -0.8, median -1). The surveyed enterprises were dominated by an individual rather than a group work mode (Question 17) - which was definitely more pronounced for service enterprises (average 1.82, median 3) than production (respectively 0.64 and 1). Managing people was focused more on cooperation than on competition (Question 18) - the average for service enterprises - 0.1 and production - 0.9.

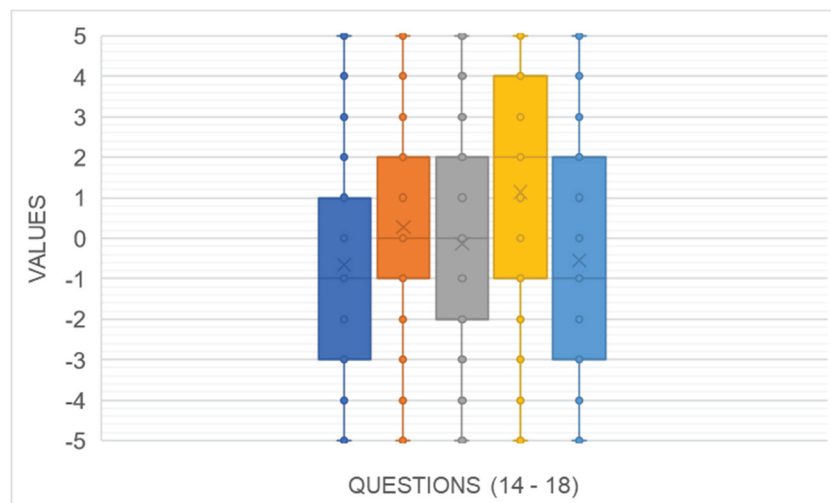


Figure 4 List of answers regarding issues 14 - 18

3. CONCLUSION

Knowledge management systems operating in enterprises have to fulfill many tasks and functions, among which the most important are: selecting information flowing into the enterprise, preventing knowledge loss, constant improvement of key skills, facilitating knowledge sharing by employees, improving the processes of introducing new products to the market and creating new markets or increasing the level of innovation of the company. These - and other goals - can be achieved in many ways, using different management styles, variants of a structural solution or with different configurations and ways of using resources. The basic elements facilitating knowledge management, such as: flat management structures, can be indicated; creating communication networks based on informal structures, using IT tools, free and not hierarchical information exchange, shaping the process conditions not direct control, stimulating employee creativity, financial incentives, stability of employment, implementing a system revealing all errors, benchmarking (both internal and external), codification of key knowledge, as well as recognizing the superiority of collective memory over

individual. However, the solution present in a particular enterprise must be specific to a certain extent, tailored to its potential, market situation, goals and skills. The conducted studies do not of course allow to draw specific conclusions, but they give a certain picture of the situation and allow to observe the trends and differences between the specified groups of enterprises. The results allow to state that both the size of the enterprise and the type of activity have an impact on the method of knowledge management, the management styles used in this context and the of the organizational structure variant. Obtaining more detailed results will be possible after a significant increase in the size of the research sample.

REFERENCES

- [1] TEECE, D.J. Strategies for managing knowledge assets: the role of firm structure and industrial context. *Long Range Planning*. 2000. vol. 33, no 1, pp.35-54.
- [2] TAKEUCHI H. *Knowledge-Based View of Strategy*. *Universia Business Review*, 2013. pp. 68-79.
- [3] JUNEJA, J.A., Amar, A.D. An Organizational Capital Decision Model for Knowledge-Intensive Organizations. *IEEE Transactions on Engineering Management*. 2018. vol. 65, no 3, pp. 417-433.
- [4] SWIERCZEK, A. Teoretyczne podstawy koncepcji zarządzania logistycznego - proba syntezy (cz. 2). *Logistyka*. 2006. no 4.
- [5] WAWRZY尼亚K, K. Istota rodzaje i funkcje logistyki. In: KOZŁOWSKI, R., SIKORSKI, A. (ed). *Podstawowe zagadnienia współczesnej logistyki*. Wolters Kluwer Polska, 2009.
- [6] KISPERSKA-MORON. D. *Wpływ tendencji integracyjnych na rozwój zarządzania logistycznego*. Akademia Ekonomiczna Katowice, 1999.
- [7] GRABOWSKI, L., RUTKOWSKI, I., WRZOSEK, W. *Marketing - Punkt zwrotny nowoczesnej firmy*.PWE, Warsaw, 1998.
- [8] DWILIŃSKI, I. *Zarys logistyki przedsiębiorstwa.*, Oficyna Wydawnicza Politechniki Warszawskiej, 2006.
- [9] CHUA, A.Y., BANERJEE, S., Customer knowledge management via social media: the case of Starbucks. *Journal of Knowledge Management*. 2013. vol. 17, no 2, pp. 237-249.
- [10] MEHDIBEIGI, N., DEGHANI, M., YAGHOUBI, N.M. Customer knowledge management and organization's effectiveness: explaining the mediator role of organizational agility. *Procedia-Social and Behavioral Sciences*. 2016. vol. 230, pp. 94-103.
- [11] CUI, A.S., WU, F. Utilizing customer knowledge in innovation: antecedents and impact of customer involvement on new product performance. *Journal of the Academy of Marketing Science*. 2016. vol. 44, no 4, pp. 516-538.
- [12] LEMON, K.N., VERHOEF, P.C. Understanding Customer Experience Throughout the Customer Journey. *Journal of Marketing*. 2016. vol. 80, no. 6, pp. 69-96.
- [13] VON KROGH, G., NETLAND, T., WORTER, M. Winning With Open Process Innovation. *Mit Sloan Management Review*. 2018, vol. 59, no. 2, pp. 53 - 56.