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THE IMPACT OF THE QUALITY MANAGEMENT SYSTEM FOR THE IMPROVEMENT OF WAREHOUSING PROCESSES

Abstract: *Quality and logistics are two areas of business management, which together to penetrate and support through its impact on the growth of competitiveness of the entire supply chain. Despite this, an analysis of the literature shows that still lacks studies on the effects of quality management concept for improving individual logistics processes. Therefore, the aim of this paper is to examine the impact of the quality management system according to ISO 9001 to improve and streamline warehouse processes. Empirical research conducted in September and October 2014, it was extended 17 companies have implemented and certified quality management system according to ISO 9001. The research process has allowed concluded that there is a significant relationship between the implementation of the requirements of ISO 9001 and the improvement of warehouse processes.*

Keywords: *ISO 9001, logistics, warehousing processes*

1. INTRODUCTION

Modern organizations are increasingly aware of the fact that the quality management and logistics are areas that should be combined in order to improve internal processes and maximize customer satisfaction. Implementation of the solutions proposed by modern quality management systems supplemented by selected instruments quality, can undoubtedly a positive impact on tightening relationships within the supply chain and raising the standards of logistics' customer service [8]. Delving into the outlined issues it can be stated that these concepts complement each other, giving a basis for a substantial integration [5]. With this view agrees P. Blaik [1] claiming that higher quality is reflected in a corresponding increase in benefits in logistics and vice versa. A similar view is J. Oxley [4] recognizing that the implementation of quality management systems plays a key role in improving the logistics processes. They oblige the company to identify and document best practices in the processes of handling, storage, packaging and distribution of products, monitoring of contracts and to take corrective action. By analyzing the relationship between quality management system and logistics it is

noted that quality management systems have a significant impact on logistics and production activities throughout the supply chain. However, the extent of this impact is relatively rarely studied.

Therefore, the aim of this publication was to examine the impact of the implementation of the requirements of ISO 9001 for process improvement warehouses. Selecting the operation was dictated by the following reasons:

- The ISO 9001 despite the fact that in recent years it has lost much of its popularity, it is still the most commonly implemented quality management system in the world. This is due to the fact that the main goal of its creators was to develop a universal system addressed to any type of organization. Initially, the quality management systems in accordance with ISO 9001 standards were implemented in large industrial enterprises. Today, they are more popular in all types of organizations, including those that carry out any activity in logistics [2]. According to M. Urbaniak [6] the most common organizational standard used by companies to ensure the required quality and raising its level with the growth expectations of

the buyers are the guidelines contained in ISO 9001. The guidance in this standard includes criteria for the implementation of operational processes (related to product design, purchasing, production, transportation, storage and delivery of goods, installation of equipment at the customer service after the sale).

- Warehouse processes play a key role in maintaining the continuity of production and have a significant impact on minimizing costs. Must therefore be concluded that the warehouse management should focus on ways to improve the efficiency of processes using a variety of management concepts including quality management,
- ISO 9001 International Standards can be an excellent start to TQM, if it is interpreted in a way that encourages the company to begin the process of continual improvement and aligns its entire people toward that goal [3].

Empirical studies were carried out in September and October 2014 on a group of 17 companies with implemented and certified quality management system according to ISO 9001. The research tool was a questionnaire survey sent to management representatives (25 respondents) and warehouse workers (140 respondents). Surveys were enriched with direct interviews with employees of the companies.

2. THE IMPACT OF THE QUALITY MANAGEMENT SYSTEM TO IMPROVE WAREHOUSE PROCESSES

The first question was addressed to both, management and workers and it was related to their attitude towards the implemented system in the context of improving warehouse processes (Figure 1).

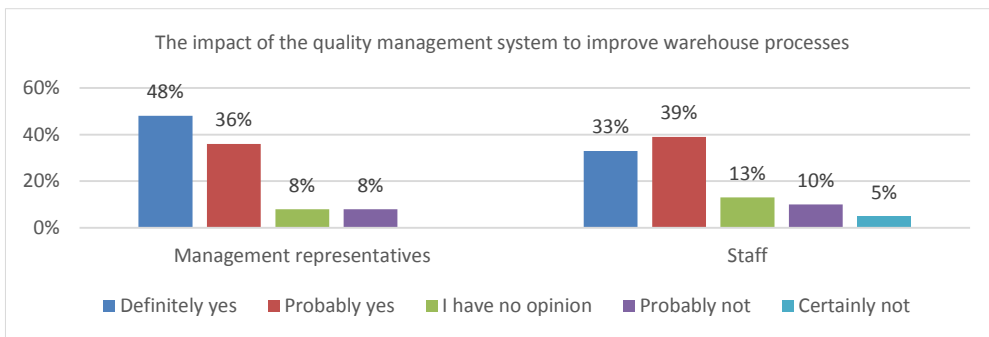


Figure 1 - The impact of the quality management system to improve warehouse processes

Analysis of the data contained in Figure 1 shows that among the staff dominate a positive feedback on the impact of the quality management system according to ISO 9001 on the organization of warehousing processes. Such a distribution of answers certainly clear from the strong emphasis that ISO 9001 norm puts to develop a coherent and logical system documentation which affects the efficient and effective implementation of key processes in the company. Management representatives emphasized that since the implementation of ISO 9001 quality of storage infrastructure and increasing employees' awareness of safety and the importance of the role of internal clients is gradually improving. Employees, in turn, emphasized a positive impact of a standardized

quality management system to organize the various tasks and responsibilities and compliance procedures, which improves the work and minimizes the number of errors and mistakes.

Summarizing it can be concluded that both among employees and board members, dominated favorable opinions on the positive impact of the implementation of the requirements of ISO 9001 to improve internal processes in warehouses. This shows that the procedures undertaken during the implementation of the system, and related to the overall organization of warehousing processes rearrangement produce positive results. Respondents emphasized that imposing requirements through the development of clear

procedures and instructions directly resulting from the implementation of quality management system and regular checks and audits significantly improve this situation. From individual interviews with employees and management representatives indicates, moreover, that since the implementation of standardized quality management system, they are more aware of the scope of their duties, standardized procedures and have been introduced order in the documentation.

In order to deepen the research process asked respondents to determine the influence exerted by a standardized quality management system for individual warehouse processes (Figure 2).

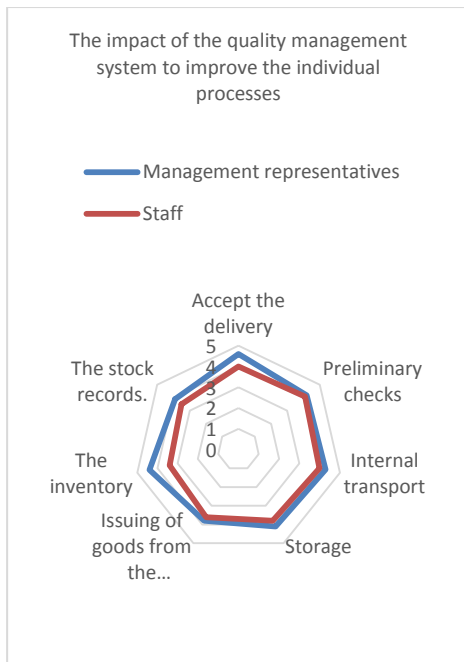


Figure 2 - The impact of the quality management system to improve the individual processes

According to representatives of management processes for which standardized quality management system has the highest impact they are the process of admission to the warehouse and inventory process and internal transport. Further analysis shows that the quality management system has at least a moderate or major impact on the improvement of all processes. Positive impact assessment requirements of ISO 9001 for process improvement warehouse is not surprising

because it obliges the board of the organization in their decisions to conduct broad oversight of the production, taking care to identify the product, the proceedings in an appropriate manner with customer property and security of goods in the distribution process [7]. Business representatives emphasized that the the implementation of system requirements, accompanied by optimization of warehousing processes, changing procedures and work instructions. Newly developed guidelines for employees that have influenced the growth of labor efficiency and minimize errors mainly in the processes of inventory and goods issue. In addition, implementation of ISO 9001 has forced investment in storage infrastructure and was supported quality management instruments.

The same research process consisted of manual workers (storekeepers). Analysis of distribution of responses shows that employees more skeptical about the impact of a standardized quality management system for improving warehouse processes. The biggest impact in their opinion, ISO 9001 has on the organization of internal transport and prior checking. Respondents highlighted that changes in the form of a reorganization of workstations and investment in infrastructure had a positive impact on the effectiveness and efficiency of operations. In addition, they stressed that part of the documentation of system greatly facilitates their work, but also suggested that some documents still require adjustments. On the other hand, according to employees system had by far the smallest impact on the process and inventory records, but that does not detract from the validity of the decision on its implementation.

The final aspect of the research process was to determine the effect of a standardized quality management system to minimize the number of errors and mistakes (Figure 3). This question was addressed only to the representatives of management because of their functions they have access to full documentation relating to complaints.

According to most respondents (74%) after several months of implementation of the quality management system reported a noticeable drop in the number of complaints. Respondents also emphasized that the improved contacts on the supplier-recipient and sourced components meet the increasingly accepted quality standards. From our findings show that the indirect cause of this state of things is to

increase the focus on quality of supply. Organizations applying to the requirements of standardized quality management system, establish long-term relationships with suppliers aimed at improving the technical quality of purchased components and increase the timeliness and flexibility of supply. This view is shared by M. Urbaniak [6] emphasizing that particular importance to the selection and assessment of suppliers are the companies having implemented and certified systems. Furthermore, the implementation of ISO 9001 and cooperation with certified suppliers can eliminate all or most of the inspection, it is due to the fact that quality management systems determine quite stringent requirements to be met by an organization deciding to purchase components or production.

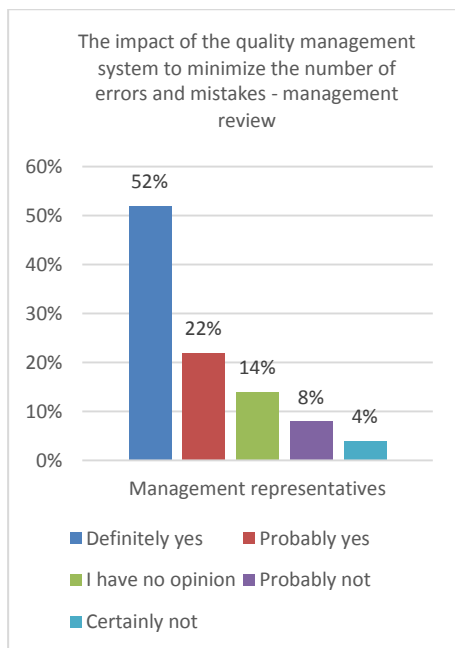


Figure 3 - The impact of the quality management system to minimize the number of errors and mistakes - management review

Some respondents also pointed out that the implementation of ISO 9001 was the impetus for the use of a wider range of instruments of quality management. In seven surveyed organizations also implemented 5S principles and Poka-Yoke.

3. CONCLUSION

Based on the research process and analysis of the literature found that:

- A standardized quality management system significantly improves the proper implementation of warehouse processes,
- Compliance with the requirements of the system documentation and internal audits conducted honestly contribute to minimize the number of errors and mistakes,
- A standardized quality management system limits the formation of defects in the product during storage, transport, or the occurrence of errors in shipping goods and noticeably reduces the number of complaints coming from customers,
- In the ISO 9001 there is contained a number of recommendations, which skilfully developed significantly simplify storage management work,
- Implementation of ISO 9001 resulted in an increase awareness of pro-quality of staff and contributed to the use of instruments of quality management,
- Some management representatives considered that it is worth to develop a quality management system toward TQM.
- In addition, the ISO 9001 with its requirements gives a company a guidance on the definition of the quality management system architecture, based on the process approach and the indications for its continuous improvement. The ISO 9001 with its guidelines governs such areas in a company as: the development of system documentation, management responsibility, employees' rights, methods of communication, maintenance management, acquisition and management, comprehensive implementation of the product or measurement, analysis and improvement.
- Generally it can be assumed that the benefits of the introduction of quality management systems result mainly in sorting out the most important areas of the companies and their integration and to emphasize the leading role of the client in business. In addition, standardized systems contribute to a reduction in measurable and immeasurable loss of quality due to defects and non-compliances, as well as to test new ideas and concepts on quality in the field of companies management [8].

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