



STAGES TO DESIGN THE QUALITY ASSURANCE STRATEGY IN THE SUPPLY CHAIN

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Abstract: *Increase the efficiency and effectiveness of supply chain management determines the competitive position of enterprises. Therefore, companies are looking for concepts to improve processes at the supply chain. According to the authors the implementation of the solutions proposed by modern quality management systems, complemented by selected instruments of quality, certainly can translate into a closer relationship in the supply chain logistics and raising standards of customer service. The aim of the paper is to characterize the basic steps leading to the proper implementation of quality standards in the logistics chain.*

Key words: *Quality strategy, Quality Management Systems, supply chain, improvement*

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. A necessary condition for effective interaction between quality and logistics is to develop a scheme combining these two areas of business management. Quality cannot be implemented in the supply chain in an ill-considered and fragmented, but in a carefully planned way - comprehensively and methodically. The aim of the paper is to characterize the basic steps leading to the proper implementation of quality standards in the logistics chain (Fig. 1).

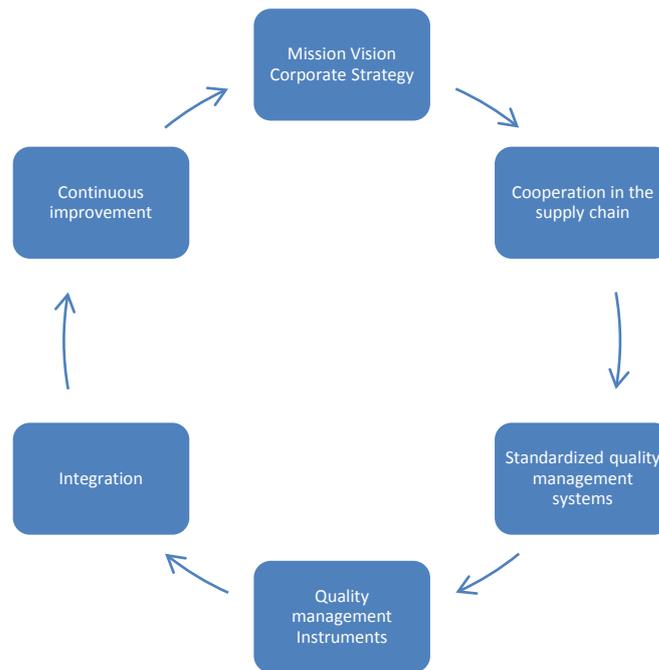


Fig.1 Quality assurance stages in the supply chain application [own study]

2 STAGE 1: MISSION VISION CORPORATE STRATEGY

Construction of a considered strategy has to take into account the mission and vision of the organization who contribute to the supply chain. The vision and the resulting values are the foundation for the strategy in the supply chain (Malindžák, 1996). It should be emphasized that quality management perfectly fits in the strategies implemented in the supply chain. This is due to the guiding principle of quality management and logistics is the efficient implementation of customer requirements by producing goods and providing them fully meet their requirements (Zimon 2014).

In the literature review, it is proposed that Supply Chain Management as a management philosophy has the following characteristics (Metzner, 2001):

1. A systems approach to viewing the supply chain as a whole, and to managing the total flow of goods inventory from the supplier to the ultimate customer;
2. A strategic orientation toward cooperative efforts to synchronize and converge intrafirm and interfirm operational and strategic capabilities into a unified whole; and
3. A customer focus to create unique and individualized sources of customer value, leading to customer satisfaction.

According to the authors complex quality management in the supply chain can significantly boost the effectiveness and efficiency of these tasks.

3 STAGE 2: COOPERATION IN THE SUPPLY CHAIN

Supply chain management is the coordination and management of a complex network of activities involved in delivering a finished product to the end-user or customer. It is a vital business function and the process includes sourcing raw materials and parts, manufacturing and assembling products, storage, order entry and tracking, distribution through the various channels and finally delivery to the customer. A company's supply chain structure consists of external suppliers, internal functions of the company, and

external distributors, as well as customers (commercial or end-user) (Hervani, Helms, Sarkis, 2005).

Therefore, implementing pro-quality solutions in the supply chain, we should seek to implement them by the largest possible number of its cells. It is recommended to develop a general policy of quality and the documents that address the needs and aspirations of individual suppliers. This will help to standardize procedures within the supply chain, develop common objectives and recovery programs. Use of guidelines to the same standards of management will result in the strengthening of relations within the supply chain, which increase the competitiveness of all its cells.

It should be remembered that in a supply chain, firms search for common benefits by pooling complementary resources, skills and capabilities. Cooperation between a producer and a supplier may reduce the total cost, which depends on their scheduling objectives. However, benefits generated by cooperation must be fairly distributed among members, otherwise regulation and adjustments are needed to rebalance the whole chain (Kersten, 2010).

It should also be mentioned that one of the eight basic principles which are based on modern quality management systems is to maintain mutual beneficial relationships with suppliers. In accordance with the provisions of this rule the company should strive to develop forms of cooperation based on mutual trust, loyalty and joint strategies as the most beneficial for all stakeholders.

4 STAGE 3: STANDARDIZED QUALITY MANAGEMENT SYSTEMS

The first step to develop and implement the concept of quality management in the logistics chain, should be implementing a standardized quality management systems. Standardized quality management systems are a set of guidelines that usually focus on improving the main processes in the enterprise and a fuller account of the needs of the customer. According to the authors, especially the recommended system is a system based on the requirements of ISO 9001.

ISO 9001 is the most frequently implemented standard for quality management in the world. The advantage of ISO 9001 is undoubtedly its universality that allows to use it's guidelines in any organization in the supply chain. Implementation of the system may (but is not required unless it fits with the strategy of the supply chain) be completed certificate. An ISO 9001 certificate will provide maximum benefit to your organisation if it approaches ISO 9001 implementation in a practical way. This will ensure that the quality management systems that are adopted, work to improve the business and are not just a set of procedures that your employees will find hard to manage. By adopting an approach that starts out to implement more efficient working practices and focuses on the business objectives of the organisation, you will achieve a system that will help and support your staff, and improve customer satisfaction.

Having reached this point, it should be stressed that the ISO 9000 standards do not refer to the fulfilment of an objective or the attainment of a determined result. In other words, they are not standards that measure the quality of goods or services of a firm, but rather establish the need to systemise and formalise a series of procedures, a whole series of business processes: being ISO 9000 compliant means having implemented a QMS that draws together in standardised and documented procedures the basic processes for the production of the good or service that the client purchases. In short, this management tool is based on systemising and formalising tasks to attain conformity in the fulfilment of specifications established by the client. It must also be stated that the implementation of this type of standard or regulation is voluntary, although it may become a de facto obligation in certain sectors. In

this respect, studies that have analysed firms' motivation to be certified place special emphasis on the role of 'prescriptor' or opinion leader played by the large automobile, energy and telecommunications firms, who saw the ISO 9000 standards as a form of assuring a certain level of quality – in the sense of systemising and formalising the key processes of the firm – in its suppliers and subcontractors, without reducing their production levels (Heras-Saizarbitoria, Casadesus, Marimon, 2011).

Implementation of ISO 9001 in the supply chain, leads to:

- Development of common objectives in the area of quality,
- Strengthening relationships with cooperators,
- Improvement of communication,
- Improvement of the production processes,
- Reduction of costs by standardization of activities (Zimon, Malindžák, 2013),
- Minimize errors.

Implementation of the guidelines of ISO 9001 should be considered as a starting point for further action to improve quality management. Further noteworthy systems should be systems based on the requirements of:

- ISO 10000,
- ISO 22000,
- ISO 9004.

5 STAGE 4: QUALITY MANAGEMENT INSTRUMENTS

Quality management tools support standardized management systems and the impact on the improvement of logistics' customer service in the supply chain.

Quality management instruments are usually implemented along three phases: the strategic planning of quality management, the implementation of quality measures and the phase of ongoing quality control. Strategic quality planning aligns the goals of quality management with the overall strategic goals of the company and develops quality guidelines for the major production, logistics and service processes. The goal of the quality implementation is the accomplishment of the developed quality strategy. The measures for quality assurance must therefore be implemented along all internal and external processes. Quality control consists of the controlling activities that are introduced in order to assure a constant level of logistics service and product quality (Zeidler, 2009).

From the perspective of improving the quality of the supply chain particularly recommended are implementations:

- 5S,
- QFD,
- FMEA,
- Poka-Yoke
- Kaizen

According to the authors, the very process of implementing the concept of quality in the supply chain can be preceded by an analysis of the FMEA. FMEA is an established failure analysis technique which has been applied on fault tolerant design, testability, safety, logistic support and related functions. The purpose of applying FMEA is to analyse the design characteristics relative to the planned manufacturing process for ensuring that the resultant product meets customer needs and expectations (Ebenezer, Devadasan, Sreenivasa, Muruges, 2011). Conducted analysis will allow to design an effective quality management system in the supply chain and allow its rapid acceptance by the individual suppliers.

6 STAGE 5: INTEGRATION

Relatively large range of profits resulting from the implementation of the requirements of the standards of quality management that makes their system becomes more and more popular among companies representing different industries and different business profiles. Organizations operating in the wider logistics industry are no exception. It is worth emphasizing that the implementation of standardized quality management systems in enterprises operating in logistics is the most reasonable because the main tasks of logistics and quality management are converging. The primary objective of logistics management and the quality is the fact that the production of services and products fully take into account the requirements of the customers. Moreover, all the processes at the enterprise should be fully subordinated to this goal. Implementation of standardized quality management systems is only the first step toward process improvement in the logistics chain.

The next step should be the integration of individual systems, that is, including the guidelines and its' basis developing their own philosophy of quality management. This is a very complicated and lengthy process, but its positive conclusion effect of increasing the competitive position of the entire supply chain.

7 STAGE 6: CONTINUOUS IMPROVEMENT

Continuous improvement can be viewed as a formal practice or an informal set of guidelines. Many companies have shifted focus to more formal approaches to project and process management such as Lean / Agile methodologies (Kanban, Kaizen, Scrum, XP). These methodologies prescribe ways to identify savings opportunities and put those savings mechanisms into place. In all Lean / Agile methodologies, continuous improvement is a primary focus, in addition to high customer service standards and the reduction of waste in the forms of cost, time and defects (rework).

8 CONCLUSIONS

Between quality and logistics there are many dependencies. According to the authors methodological build of the concept of quality management in the supply chain has reasonable grounds listed below:

- Quality management and logistics are aimed at achieving common objectives,
- These processes are mutually dependent and mutually supportive,
- Quality management improves the efficiency and effectiveness of the supply chain,
- The quality of products and processes are an integral part of the supply chain,
- Logistics customer service is improving significantly as a result of the implementation of quality concept in the supply chain,
- The concepts of quality management support integration processes in supply chains.

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