



## APPLICATION OF QUALITY MANAGEMENT SYSTEM ON OPERATING COST FOR SMALL AND MEDIUM-SIZED BUSINESS ORGANIZATIONS

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**Abstract:** *Standardized Quality Management Systems (previously associated mainly with large industrial companies) are now increasingly being implemented in small and medium sized organizations. This is due to the fact that the Quality Management System according to ISO 9001 standards, especially for small organizations can be an important tool to show to customers that they have the ability to produce products or provide services consistent with their requirements. The purpose of this paper is answer on the question - how to implement of the requirements of ISO 9001 system affects on the costs of running the SME business?*

**Key words:** *ISO 9001 , SME , Quality Management Systems, operating cost*

### 1 INTRODUCTION

From a global perspective, the successful spread of ISO 9000 standards seems to be related to the very dynamics of the globalization process in western countries (Heras-Saizarbitoria, Casadesu's & Marimo, 2011). Today, globalization, the advancement of technology, shortening product cycles, increasingly sophisticated consumers, and increasing labor costs and volatility in input prices have created an environment where manufacturers must be flexible, adaptive, responsive, and innovative (Su, Shi, & Lai, 2009). Contemporary businesses is increasingly difficult to meet the growing demands of the market. Therefore, more and more the companies are willing to implement the requirements of standardized quality management systems. However, these systems are not only benefits but also costs (Zimon, Sikora, 2013).

Cost of quality due to their complexity, have not been up to now clearly classified and defined. According to Yang the concept of quality costs has been in place for nearly five

decades, but the uncertainty regarding its use still continues (Yang, 2008). It needs to be pointed out that to implement an effective cost of quality system, the categorization and definition of quality elements should be very clear from the beginning (Weinstein, Vokurka, & Graman, 2009).

Authors often consider the cost of quality as a costs incurred by the company in the manufacture of products. Concepts of quality costs in this area relate most to the classification proposed by Juran and Gryn, according to which the quality costs are those costs of the company, which are incurred for the product shelf life, and they also include costs incurred during and outside the production process and the costs of poor quality. In addition, Juran proposes two main groups of the so-called costs (Juran, 1989):

- The cost of “good quality”, which may include all expenses to ensure in the future the production of products which are characterized by excellent quality and,
- "Poor quality costs" which are the cost of all the errors and mistakes, and improper use of resources that can be avoided by increasing the investment in the first group of costs. During the management review an organization should monitor (Larson & Kerr, 2007) the quality objectives, and report as well as evaluate the cost of poor quality regularly. This is an essential part of the continual improvement process.

Similar views on this subject has (Bank, 1996), which recognizes the kind of quality costs for a reduced model of all costs incurred in the production of high-quality product or service, which includes the cost of prevention, cost estimating, cost of internal errors, the costs associated with exceeding customer requirements, as well as costs resulting from lost profits. With these considerations (Sukhija, 2009), agrees that in the overall quality costs include the costs of eliminating errors and defects, plus the cost of errors that were not detected and corrected. Lee, Hasliza & Ramayah (2011) postulates that quality costs as the difference between the actual cost of a product or service and what the reduced cost would be if there was no possibility of substandard service, failure of products or defects in their manufacturing,

Moreover, Feigenbaum (1991) defines:

- prevention costs,
- appraisal costs,
- internal failure costs,
- external failure costs.

Both following aspects, the very definition of “cost of quality”, and unambiguous assessment of the costs incurred during the implementation and improvement of the Quality Management System is very difficult to determine. Without a doubt, the total cost is dependent on the size and characteristic of each individual company and the efficiency of the Quality Management System.

## 2 RESEARCH METHODOLOGY AND RESULTS ANALYSIS

Undoubtedly, the implementation of the Quality Management System is an investment, so it seems reasonable to question its viability in financial terms.

The cost incurred during system's implementation, operation and improvement phases can be a significant burden on small and medium-sized commercial organizations, often beyond their financial capacity. It is believed that this is due to the fact, that ISO 9001 requirements do not fully take into account among the other things, the following barriers faced by a small and medium size firms:

- Flat, single-level organizational structure
- Inadequate value of equity limiting company's ability to self-finance or borrow funds for development projects
- Unfavorable treatment by financial institutions
- Limited ability to attract right mix of personnel

Those difficulties lead to the formation of a following, fundamental question: *How the implementation of the requirements of ISO 9001 system affects the costs of running the business?*

The main objective of research was the selection of right research subjects that would allow the formulation of the most reliable and statistically valid conclusions. For this purpose we obtained permissions to conduct research in organizations characterized by comparable futures such as size, industry, type of business, strategy and management experience. The result of the selection and approval process was a group of twenty two companies representing one purchasing group. The study involved 280 employees associated in 17 small and 5 medium-sized organizations. The final decision, whether to include those companies in our study, was made primary on the fact that they all met the following pre-established conditions:

- Each company represents small or medium-sized commercial organization
- They reflect general tendency, as some of them already implemented a Quality Management System standard, while others are either in the process of implementing or not planning to take that step at all
- Within the group, each of the member organization follows a joint business strategy and operates under very similar conditions, so the cost impact of implementation of ISO 9001 system on their overall performances could be compared and statistically evaluated

Analysis of the literature suggests no clear argument for a positive ratio requirements of ISO 9001 to increase the financial efficiency of the surveyed organizations. This is due to the fact that the effectiveness of these systems in each case should be considered in the context of the goals that the organization wants to achieve the precision of the determination of what others expect of her (Zimon, 2013). Quality objectives are part complementary to other organizations for purposes such as growth, funding specific projects or profitability. Can be, therefore, say that the quality management system can only help to achieve these objectives because the same quality management system is a means, not a goal in itself.

It seems to us reasonable though, to search for answers at the very source, that is, with members of the management boards and teams at companies with certified Quality Management System. In order to obtain an answer to these issues respondents were asked various questions regarding the impact of costs related to the implementation and

maintenance of a Quality Management System on the effectiveness and competitiveness of the organization. Table 1 presents the point of view of top management.

*Tab. 1 Impact of the certification on the organization (according to management)*

<b>How, in your opinion, is ISO 9001 affecting the financial health of your business: (please select as many options as required)</b>	Replies
	in %
Forces the quality of the product above the necessary level, increasing the cost of running a business and driving the price of the products up,	20
By the high costs of implementation and maintenance affect the economic efficiency of the enterprise,	50
By avoiding a cost of non-conformances in products and services, improves the efficiency of a business and decreases the price of the products,	0
Minimizing the cost of internal and external defects increases economic efficiency of your enterprises,	10
Has no effect on the manufacturing cost of product (service)	20

Source: results of own research

The responses to the surveys indicate that, the vast majority of executives negatively assess the impact of the Quality Management System on the operating costs of the organization. According to 50% of respondents, costs related to the implementation and maintenance of the system is so high that undercut the economic viability of the organization. It strongly suggests, that small and medium-sized commercial enterprises, which every day struggles with problems related to payment delays, congestions and backlogs from financial providers, are not financially prepared to carry the cost required for the maintenance of the system. Managers of small and medium-sized commercial organizations, while appreciating the positive aspects of the ISO 9001 standard have, in the first place, care for company's financial liquidity and its economic considerations. There are also opinions that enforcement of the requirements of the quality standard somehow forces the quality of the product beyond the expectation of senior management and implemented strategy, what has in return the negative impact on the price structure of services provided. The vast minority of respondents speak favorably about the impact that the implementation of the system has on the cost of quality. Only 10% of them emphasizes that compliance with the requirements of ISO 9001 minimize the internal deficiencies in the company, what in return brings a profit to the organization.

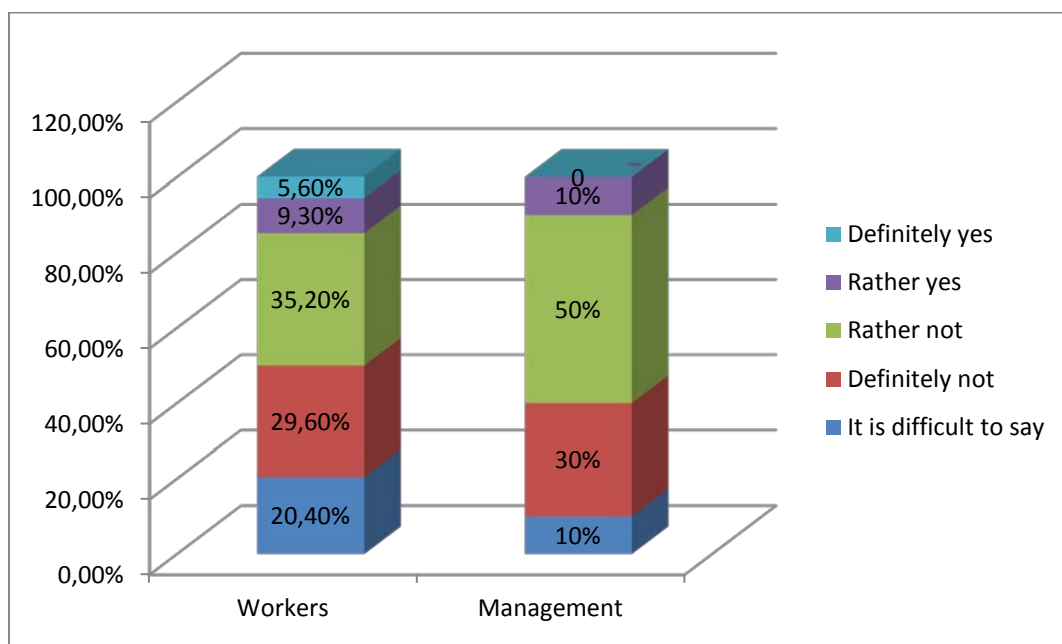
Analysis of employee's responses (Table 2) highlights the similarity to those received from top management. The vast majority of respondents (43.5%) considered that the Quality Management System creates too high quality of service, and forces the increase in prices. About 16% says that after the implementation of the Quality Management System standard service prices remained unchanged, while none of the staff had noticed a reduction in prices of services for several years of operation. Quite a number of opinions are that the implementation of a standardized system may affect the economic viability of the company. It seems, therefore, that the respondents come from the assumption that an attempt to achieve very high levels of service quality can have a negative impact on other aspects of the organization, especially financial.

*Tab. 2 Impact of the certification on the organization (according to staff)*

How, in your opinion, is ISO 9001 affecting the financial health of your business: (please select as many options as required)	Replies
	in %
Forces the quality of the product above the necessary level, increasing the cost of running a business and driving the price of the products up,	43.5
By the high costs of implementation and maintenance affect the economic efficiency of the enterprise,	21.0
By avoiding a cost of non-conformances in products and services, improves the efficiency of a business and decreases the price of the products,	4.8
Minimizing the cost of internal and external defects increases economic efficiency of your enterprises,	11.3
Reduces the cost per unit of product (service)	0.0
Has no effect on the cost per unit of product (service)	16.1
In other way	3.2

Source: results of own research

Another question, which was addressed to the representatives of both management and employees, was formulated as follows: Do you believe that savings arising from the introduction of a Quality Management System according to ISO 9001 are higher than the costs incurred for its implementation and operation? The intention was to deepen the analysis of cost of quality incurred by organizations. Responses are summarized in Figure 1.



**Fig.1** Comparison of savings and costs associated with the implementation of standardized Quality Management System

Source: results of own research

Most of the members of the boards (which are confirmed by direct interviews) argue that the cost of certification appears to be disproportionate to the benefits obtained. Given the above opinions, it's not surprising that among the members of the boards as many as 80% points to the increase of overall cost to the organization after the implementation of the Quality Management System standard. A similar opinion was expressed by 64.8% of the

representatives of the crew. Only 10% of the board members and less than 15% of the staff recognizes that the implementation of the Quality Management System gives the organization more savings than losses. To sum up obtained results, it is obvious that the vast majority of respondents said that the implementation of a Quality Management System according to ISO 9001 is a significant financial burden on small and medium sized business organizations. However, it should be noted that quality costs by themselves do not improve quality (Omurgonulsen, 2009).

### **3 SUMMARY**

The study shows that the costs associated with the implementation and maintenance of the Quality Management System standard is still too high, and effectively discourages representatives of small and medium-sized commercial organizations from implementing ISO 9001 system. More than half of the representatives of respective boards emphasizes that these costs are so high that in consequence could negatively affect the economic health of the enterprise. Employees, in turn, in over 43% cases believes, that the standardized Quality Management System forces very high quality of services, what in turn translates to a very large price increase. In addition, as much as 80% of board members believe that the costs of certification and maintenance of the system are much higher than the savings achieved from its implementation.

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