

QUALITY COSTS ANALYSIS IN CABLE INDUSTRY

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ABSTRACT

Herein the authors give a short review of definitions of quality costs, their structure and control systems. They also display briefly ISO 9000ff standard, as a part of internationally recognised standards. The authors evaluate quality costs as one of the most important sections of ISO 9000ff and business operations in general. In the end, they bring experiences from cable industry in Federation of Bosnia and Herzegovina.

Key words: ISO-standards, quality costs, control systems, cable industry

1. INTRODUCTION

The new conditions of management and market requirements have led to changes regarding the quality. Requirements for quality are now determined by the international and European standards which represent the minimum of standards for every manufacturer. Basic requirements for quality system are standardized and regulated in a series of standards as set forth in ISO 9000 ff. Growing number of companies are trying to comply their own quality system with the requirements and standards of ISO 9000ff, and have it certified by an authorized institution. It is important to emphasize that the positive effects of ISO standards application are visible only after long term of use. Studies have shown that most organizations that employ ISO standards have increased their productivity and efficiency, as well as customer and employee's satisfaction and cost reduction.

2. TQM AND QUALITY COST

Globalization aspect also plays a significant role in expanding the implementation of the quality concept. Trust between manufacturers and customers is of vital importance for international business relations and can only be achieved through valid and proper documented and certified quality management system. Total Quality Management is a new philosophy and a new challenge for those business systems which aim for business excellence¹. Developing and transition countries, due to their lower level of technological development as well as poorer quality culture, lag when it comes to understanding the underlying competitiveness of quality costs. Research carried out in developing

¹ More on this topic: Steinbeck, H.H.: Das Neue Total Quality Management – Qualität aus Kundensicht, Verlag Moderne Industrie, Landsberg/Lech, 1995.

countries shows that this problem is not addressed quite seriously by most of the companies. The reasons are as follows²:

- Lack of knowledge, complexity of this matter;
- Lack of knowledge of the definition of quality and cost structure;
- Difficulties in monitoring costs;
- This cost category is not considered to be essential;
- Due to insufficient knowledge of the Management on this issue;
- Lack of IT support;
- Lack of knowledge about the importance of quality costs;
- Because the Management is afraid of the truth;
- Due to misinterpretation of quality for a trend and the lack of ability of the Management ...

Companies that do not monitor or manage costs of quality but use the traditional system which does not measure the costs of quality impede management in comprehending the actual costs amount and its importance. On the other hand, TQM, as the name says, implies a complete mastery of quality issues for every party engaged in the production and / or product placement and provision of services. Herewith is clearly stated that as far as the TQM system is concerned practically everyone must be involved in it. Implementation and development of the quality management system initiates the need for quality costs monitoring: costs for both quality and non-conformance. Quality costs include all expenditures necessary to correct incurred errors and expenses for prevention of errors. Philip B. Crosby regards the quality cost as the cost incurred when satisfactory quality has not been achieved; adhering to the concept of productivity he says that the cost of quality is: "... a cost that is incurred if something is done in the wrong way or incorrectly." In the existing literature, most authors put the cost of quality into two groups: Costs of conformance and Costs of non-conformance.

Costs of conformance are costs incurred as a result of efforts to provide a quality product or quality services. These include prevention costs (planning, reviewing new products, process control, independent certification of quality, supplier quality surveys, etc.), and the costs of appraisal (input control and testing, control and testing process, final inspection and testing and maintenance of equipment precision etc.). Costs of non-conformance are all expenses that arise from correction of occurred errors. They can be divided into two groups: the costs derived from internal failure (deficiency) and the external failure (default):

Internal failure (deficiency) costs are associated with defects (errors, faults, discrepancy, etc.) that are identified prior to the shipment or delivery of products to the customer. These costs would not have occurred if it had not been for defects in the product prior to the shipment. Examples of subcategories are: rejects, rework, failure analysis, rework of goods in stock, sorting by one hundred percent control, retesting and control, avoidable losses in a process, price lowering etc. Internal failure (deficiency) costs include all costs of non-conformance that are incurred during the production stage or provision of services stage. This group of costs comprises those costs associated directly or indirectly with a faulty defective product or process, its improvement or correction, and with the indirect losses due to reduced efficiency of the process.

External failure costs are associated with defects that have been established or identified after the shipment or delivery of the product to the customer. These costs would also not have occurred if it had not been for defective products. Examples of these costs include warranty costs, customer complaints, the cost of the customer returns, compensation, etc.

Since companies in the cable industry in FBiH do not have a developed systematic monitoring of costs of conformance, but instead they monitor costs of non-conformance in a suitable way, this paper will focus precisely on those kinds of costs.

² Drljača M., Sustav za upravljanje troškovima kvalitete, 3. Hrvatska konferencija o kvaliteti, Zbornik radova: Kvaliteta budućnost Hrvatske, Hrvatsko društvo za kvalitetu i Informat d.o.o., Cavtat, 2001.

3. ANALYSIS OF QUALITY COST IN CABLE INDUSTRY IN FBiH

Based on the analysis of quality costs in the cable industry in FBiH, we are giving a short overview.

Table 1. Analysis of the Costs of non-conformance in relation to total revenue – internal failure costs

SUBCATEGORIES OF INTERNAL FAILURE COSTS	SHARE OF INTERNAL FAILURE COSTS
Scrap	2,23%
Rework	0,05%
Failure analysis	0,01%
Scrap and finishing of the goods in stock	0,00%
Sorting by 100% quality	0,00%
Repeated control and re testing	0,14%
Avoidable losses in the process	0,01%
Price reduction	0,11%

Table 2. Analysis of the Costs of non-conformance in relation to total revenue – external failure costs

SUBCATEGORIES OF EXTERNAL FAILURE COSTS	SHARE OF EXTERNAL FAILURE COSTS
Warranty costs	0,00%
Customer complaints settlement	0,00%
Customer returns	0,08%
Compensation	0,00%

The above mentioned data can only be obtained by using consistent quality ERP software in the entire company. However, registration and analysis of quality costs and subsequent reporting are not mandatory by law, and therefore there is no standardized methodology for monitoring the quality costs. Quality costs are part of the overall cost structure of the business, outside of which they do not exist³. Regardless of the awareness level of the management and employees, the costs derived from quality do exist and their influence is manifested on the business performance of the company.

In order to achieve satisfactory profitability and return on invested capital we must take into account the characteristics of the cable industry, not only in the Federation but also in greater part of Europe, and these characteristics are primarily low gross profit margin and high turnover ratio. It is then that becomes clear how much influence quality costs have on business, and how important cost monitoring and control is. For example, if we assume that net gross-margin is 5%, by reducing scrap from 2,23% to 1,23%, companies would increase net profit for 20%! Moreover, management of product quality and consistency of quality are needed to obtain the required certificates of product quality (VDE, ÖVE and others), which are basic prerequisite for all cable manufacturers for partaking in markets outside their home country. Considering modern market conditions and modern technology domestic market alone is not adequate for any serious manufacturer and therefore going to foreign markets is crucial for manufacturer's sustainability. For all these reasons, the modern quality concepts are focused on manufacturing processes and on putting the emphasis on prevention, which will somewhat result in eliminating causes of the problem and providing production with no defects, reduction of scrap and increase in productivity, total revenue and profitability of the enterprise.

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³Drljača, M., Mala enciklopedija kvalitete V. dio – Troškovi kvalitete, Oskar, Zagreb, 2004.

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