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# PREVENTION COSTS OF QUALITY FOR A PORT OPERATOR

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***Abstract:*** *Globalization is one of the key trends in the business world today. All organization must maintain their cost competitiveness and ensure that the quality of their products and services are meeting their customer's requirements. Cost of quality provides a means to judge the return of quality in any organization.*
***Keywords:*** *cost, quality, prevention*

## INTRODUCTION

Close correlation between product quality and costs of developing it, should not be interpreted as the existence of a proportional relation between the two components.

The systematization of costs of a port operating company on chapters spending and recovery information obtained from the analysis of quality could prove that provides a quality cost reduction through efficient use of resources.

In the analysis of quality costs must take into account that it is manifested throughout the life cycle of a product, including the acquisition and maintenance costs, and those of decommissioning costs.

## COST OF QUALITY

Appropriate ISO 9000, quality-related costs are costs that are proposed to achieve quality, confidence required, and the losses incurred when not achieved the quality of the proposed.

The costs of quality are the cost associated with the prevention, discovery, and resolving of defects in parts. These costs can arise whether the product in the design stages, manufacturing plant, or in the customer's hand. It is important to identify the cost of quality so that we can determine the expenses associated with producing a quality product.

Quality in the long run results in increased profitability.

## QUALITY COST STRUCTURE

If the organization does not offer high quality product or service, it will soon go out of business. But just having high quality will not be enough, because your competitors will also have the high quality. To win, companies will need to offer high quality for a lower price than their competitors. This requires organizations to identify and reduce their quality costs. Of course, highlighting the costs and determine their total value is in practice a difficult action.

The elements of the cost of quality can be grouped into two distinct categories: Conformance Costs and Non-Conformance Costs. These costs, in turn, can be divided into four categories:

1. Prevention Costs
2. Inspection & appraisal Costs
3. Internal Failure Costs
4. External Failure Costs.

Prevention costs are associated with design, implementation, maintenance and planning prior to actual operation in order to avoid defects from happening.

Appraisal costs are spent to detect defects to assure conformance to quality standards. Appraisal cost activities sums up to the "cost of checking whether things are correct". The appraisal costs are focused on the discovery of defects rather than prevention of defects.

Internal failure costs occurs when results of work fail to reach designated quality standards, and are detected before transfer to the customer takes place.

External failure costs occur when the product or service from a process fails to reach designated quality standards, and is not detected until or after transfer to the customer.

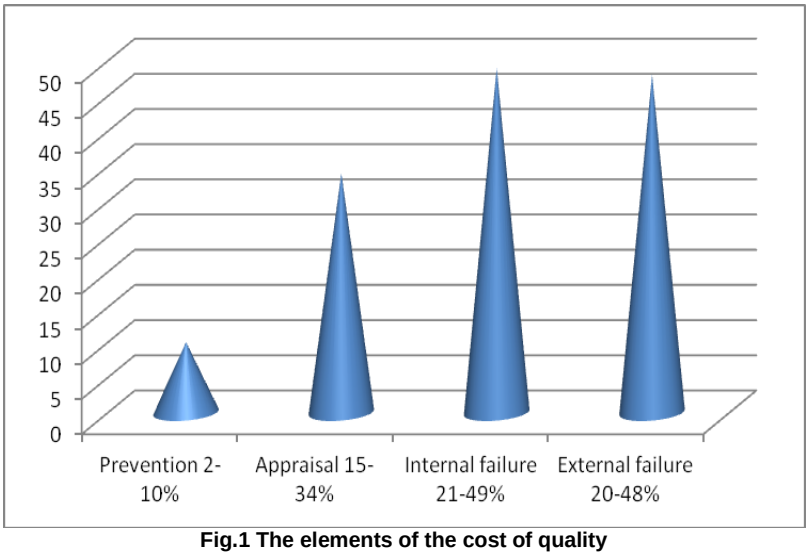


**Fig.1 The elements of the cost of quality**

**PREVENTION COSTS**

The emphasis is on the prevention of defects in order to reduce the probability of producing defective products. Prevention activities lead to reduction of appraisal costs and both type of failures (internal and external). The motto is *"Prevention rather than appraisal" .*

Activities associated with prevention costs in a port operating company:
- achieving and reviewing procedures
- quality planning
- training
- selection process
- study the needs and expectations of customers,
- actions to improve design services;
- environmental impact studies
- technical manuals, organization, quality
- preparation of working standards and responsibilities;
- quality systems, procedures and regulations
- cost planning
- the layout of multiple suppliers
- the application of programming techniques to projects and activities (PERT, GANTT)
- planning with software
- diagrams of work processes
- actions to avoid causing errors
- training needs analysis
- preventive maintenance of port equipment, predict and determine the waiting time
- the system for receipt of complaints;
- cleanliness and order
- review entry applications
- establishing collection and data analysis
- risk analysis and security plans and hygiene
- work planning meetings.

To facilitate quality efforts that will lead to operating cost reduction opportunities is to investment in **prevention** activities.

**CONCLUSION**

Research indicates that 2/3rd of the quality costs may be reduced of their present level, by the commitment of the organization to a process of continuous improvement and company-wide quality improvement.

Recommended, both in production and services, an orientation toward prevention activities.

Management at the highest level in a port operating company had to ensure that quality policy is based on following elements:
- is adequate for the purposes of the organization
- including a commitment to meet and to improve further the effectiveness of quality management system
- provides a framework for establishing and analyzing the quality
- is communicated and understood within the organization
- is examined for its suitability continues.

Guideline on quality management to control prevention, which is estimated by the manufacturer as being more expensive, could lead to a higher efficiency than in the control of the inspection findings as triggers controlled processes, which will allow reduction in non-quality costs by reducing costs, and the sale of larger quantities of products, possibly at a higher price.

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