

# The Application of Quality Cost Management in Inspection and Testing Institutions

Zhao Wang<sup>1,2,3,4,5, \*</sup>, Longfei Xia<sup>1,2,3,4,5</sup>

<sup>1</sup> Institute of Land Engineering and Technology, Shaanxi Provincial Land Engineering Construction Group Co., Ltd., Xi'an 710075, China

<sup>2</sup> Shaanxi Provincial Land Engineering Construction Group Co., Ltd., Xi'an 710075, China

<sup>3</sup> Key Laboratory of Degraded and Unused Land Consolidation Engineering, Ministry of Natural Resources, Xi'an 710075, China

<sup>4</sup> Shaanxi Provincial Land Consolidation Engineering Technology Research Center, Xi'an 710075, China

<sup>5</sup> Land Engineering Quality Testing of Shaanxi Land Engineering Construction Group Co., Ltd., Xi'an 710075, China

\*Corresponding author: wangzhaotougao@163.com

## Abstract

The management of quality cost has fully played a role in quality management in the development of enterprises. Therefore, the quality inspection department needs to fully recognize that cost control can improve its own capabilities and reduce the burden on enterprises. This article mainly outlines the application of quality cost management in inspection and testing institutions for a brief analysis and discussion.

## Keywords

Quality Cost; Inspection and Testing; Cost Control.

## 1. Introduction

Quality is not only an important strategy for enterprise development, but also a standard for consumers to choose products. Therefore, on the one hand, enterprises need to ensure the quality of their products and the reputation of the enterprise to improve their competitiveness. At the same time, in order to obtain the best economic benefits, they need to organically combine quality, cost, and efficiency. Therefore, the quality cost management of enterprises has a significant impact on enterprise management.

## 2. Conceptual Analysis of Quality Cost

Quality cost was proposed by quality management experts in the United States in the early 1950s. It mainly refers to the expenses paid by enterprises to ensure and improve product quality, or to pay for substandard product quality. It not only includes the actual expenses incurred to improve quality, but also includes the losses that have been incurred although not actually incurred. The quality cost consists of four parts: prevention cost, verification cost, internal loss cost, and external loss cost.

## 3. The Significance of Implementing Quality Cost Management in Quality Inspection Institutions

① Enhance institutional vitality and competitiveness

Controlling quality costs is an important means to improve the economic efficiency, enhance the vitality and competitiveness of testing institutions. Testing institutions should control various expenses in the process of improving service quality at a reasonable level through quality cost control, reduce waste, consume and occupy fewer resources, and achieve the best possible service quality. By strengthening quality cost control, they can ensure that the institution has strong vitality and competitiveness in market competition, and continue to grow on this basis.

#### ② Improve management level

The level of quality cost control to some extent determines the modern management level of testing institutions. Quality cost control is a comprehensive task that involves various departments within the testing organization. Therefore, in the process of quality cost control, personnel from various departments should actively cooperate and coordinate actions, implement scientific management, and ensure the smooth progress of institutional cost control. Therefore, strengthening quality cost control can promote and improve the management level of institutions, enhance their ability to respond to market changes, and ultimately achieve the effect of enhancing competitiveness.

#### ③ Necessary conditions for establishing an economic responsibility system

Quality cost control is a necessary condition for establishing an economic responsibility system for testing institutions. Quality cost control should distinguish the economic responsibilities that each department within the organization should bear for the formation of quality costs, in order to carry out reasonable rewards and punishments, promote further strengthening of management by each department within the organization, and control the total quality cost at a lower level.

### **4. Principles to Be Followed in the Application of Quality Cost Management in Quality Inspection Systems**

#### ① Full participation in quality cost management

Strengthening the promotion of cost awareness among all employees, fully mobilizing the enthusiasm of employees to participate in cost control, and creating a good atmosphere of diligence and frugality in handling affairs can effectively implement the goal planning of quality cost management and achieve effective management.

#### ② With the aim of seeking suitable quality costs

The quality cost of an enterprise should be adapted to its product structure, production capacity, equipment conditions, and personnel quality, and testing institutions are no exception. That is to say, it is necessary to establish a quality cost management system based on the characteristics of the testing institutions themselves, and seek suitable quality cost goals and effectively control them.

#### ③ Based on authentic and reliable quality records and data

During the implementation of quality cost management, all records and data used must be true and reliable. Only in this way can accurate accounting, thorough analysis, authentic assessment, and effective control be achieved. Otherwise, it will inevitably become mere formality and unable to obtain benefits.

#### ④ Include the responsibility of quality cost management in all relevant functional departments

Quality cost management is the management of the entire business process, therefore it involves various functional departments within the organization, such as administrative, business, inspection, finance, and other departments. Only by incorporating the statistics and analysis of quality costs into its quality function can this work be carried out persistently.

Otherwise, relying solely on the inspection department cannot carry out quality cost management work.

#### ⑤ Establish a comprehensive cost control system

The cost control system of a testing technology institution includes organizational systems, information systems, assessment systems, and reward systems. While establishing this system, full attention should be paid to monitoring the impact of market changes on cost management of technical institutions and new requirements, so that cost management can truly adapt to market requirements. In addition, we also need to continuously improve the execution of internal systems in technical institutions. If there is a system that is not implemented, it is equivalent to not having it. Therefore, only by establishing a sound cost control system can we truly achieve effective cost control.

## 5. Application of Quality Cost Management in Quality Inspection Institutions

### ① Prevention costs

Quality planning expenses. Quality planning expenses refer to the expenses incurred by relevant departments or personnel for the time required for planning. The time required for planning specific details of the quality management system in inspection and testing technical institutions, such as planning; The time required to prepare program documents, work instructions, etc. according to the needs of the organization; It also includes the time required for professional testing departments to prepare inspection and testing instructions, operating procedures or original records, as well as rules and regulations related to the laboratory.

Process control costs. Process control cost refers to the cost of providing technical guidance to professional inspection personnel for the effective implementation or execution of quality requirements, as well as the cost of controlling the entire time required for quality control and improving existing process capabilities.

Customer survey fees. The essence of quality inspection institutions is to serve the people. Therefore, the cost of customer survey for quality inspection institutions is the cost of conducting relevant surveys and analyses to understand the expectations and needs of the service recipients of the institution, and to enhance mutual communication and understanding with customers.

Cost of quality training and improvement of work ability. In order to improve the quality level, service level, and work ability, quality inspection institutions involve various training costs such as organizing short-term special classes, production technology visit training, business personnel testing ability training, professional technology external learning training, and professional inspection personnel exchange and learning training.

Research and management expenses for the quality system. The quality inspection agency is responsible for the design and management expenses of the entire quality management system, as well as auxiliary expenses.

Supplier evaluation fees. The cost of evaluation activities for suppliers who provide office supplies and drugs or reference materials required for inspection and testing for quality inspection institutions. Including contract supplier evaluation, preparation of qualified supplier registration form, etc.

### ② Appraisal cost

Testing and inspection fees for purchased materials. It includes the evaluation conducted by the laboratory

The cost of purchasing material quality, as well as any expenses that may be incurred by relevant management and office personnel, also includes the travel expenses incurred by inspection personnel when evaluating the purchased materials at the supplier.

Laboratory or other measurement service fees. As a professional testing institution, the accuracy and scientificity of the inspection results are crucial. Therefore, the costs of measurement, calibration, periodic verification, maintenance and upkeep of instruments and equipment related to inspection services should be included in this measurement service.

Material costs for inspection and testing. The material cost of testing and inspection refers to the materials and items consumed for inspection and testing. Including laboratory standard materials, drugs, glassware, testing tools, etc.

Quality audit fees. Quality audit fees refer to the audit fees, capability verification fees, laboratory qualification recognition fees, etc. of the management system of quality inspection institutions, including internal audit and external audit fees.

Customer satisfaction survey fee. The cost of conducting customer satisfaction surveys, telephone follow-up visits, customer visits, and customer symposiums to understand the satisfaction level of enterprises and customers with the service quality provided by quality inspection institutions.

### ③. Internal failure (loss) cost

Rework loss fee. The re inspection fee paid when the inspection results do not meet the requirements specified in the standard due to errors or errors in equipment, environment, personnel, etc. during the inspection process.

Quality accident handling fee. Expenses paid for handling internal quality accidents.

Cost of corrective measures for internal and external audits. The expenses incurred for correcting and improving internal non conformities or defects discovered through internal and external audits.

### ④ External fault (loss) cost

Complaint fees. The expenses incurred for analyzing the causes of customer complaints (applications, complaints), taking corrective measures, and verifying corrective measures.

Liability fee. The customer requests compensation for losses caused by inspection accidents or errors in inspection results.

Other external loss fees. This includes costs such as loss of service opportunities and corrective measures caused by errors and customer dissatisfaction.

## 6. Conclusion

The level of quality cost control ability is a reflection of the management level of the quality inspection department and a guarantee of product quality. Doing a good job in quality cost management control can promote the effective operation and improvement of the quality management system in quality inspection institutions, continuously improve the competitiveness and economic benefits of enterprises, and promote sustainable development of enterprises.

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