

## Application of ISO 9000

## Quality Management

## System in Transportation Industry

The recent development in increasing the competitive advantage in transportation industry highlights the fact that the application of ISO9000 quality management system is the future trends in Hong Kong. The concepts of the PDCA (Plan, Do Check, Act) cycle that embedded in the ISO9000 standard helps the transportation industry to improve their services in not just meeting customer's requirements, but also improve the performance of its quality system. The four main activities in the process model, i.e. (1) management responsibility, (2) resource management, (3) product realization and (4) measurement, analysis and improvement, provide the framework for the process model for continual improvement. This paper explores their relationships with respect to the transportation industry and highlights the key elements and processes including some regulatory and legal requirements in that industry.

Keywords: management responsibility, resource management, product realization, measurement, analysis and improvement, continual improvements, customer satisfaction

### Introduction

The Hong Kong transportation industry faces a severe competition nowadays. The open up of the China market affects the re-direction of transportation services to China. In order to improve competitiveness, the ISO 9000 quality management system model is one of the tools to help the industry to gain benefits in performance improvement. The model of ISO 9000 can be applied in various industries. It involves twenty elements in 1994 revision and four major headings (management responsibility, resource management, product realization, measurement, analysis and improvement) in revision 2000. Dr. Deming's PDCA cycle is applied in both revisions. However, the PDCA cycle is more explicitly reflected in the revision 2000.

The industry may include freight transportation by trucks, air freight and sea freight forwarding services, and freight transportation by inland water. The processes involved are storage and handling of cargo, unloading facilities, purchasing, schedule arrangement, handling of tools and equipment, order processing.

The essential elements and key processes shall be understood in this industry in order to establish the ISO9000 model.

### Management Responsibility

Top management commitment is an vital element for the success of the business. Managers with commitment develop quality policy and quality objectives. They also consider company needs and expectation, as well as regulatory and customer requirement. The fundamental concept of how to determine the objectives is that objectives shall indicate the achievement of the policy. Hence, the objectives shall be relevant to the policy. They shall also be measurable and be deployed to functional level. Customer focus philosophy, quality planning and determination of job requirements help to determine the first step of the planning stage of the cycle.

The quality system shall be realized by means of a documented system. The adequacy and the degree of documentation depend on the nature of the transportation companies. The purpose is to ensure there is a control in operation. What customer wants is the transportation service and is not the documentation.

Top management shall review the quality management system at planned intervals to ensure its continuing suitability, adequacy and effectiveness. Management shall determine the actions for improvement after the review including the resources needed and action plan.

### Resource Management

Resource is another vital element for the success of the business. Company shall determine and provide resources needed in a timely manner, to improve the processes of the quality system and to ensure customer satisfaction. The resource management shall include the assignment of competence personnel, the training and quality awareness program

establishment, and adequate facilities and work environment to achieve the conformity of services. Training shall be provided to staff in safety legislation [factory undertakings (cargo and container handling) regulations], code of practice for safe use of mobile and tower cranes, dangerous goods, general duties and precautions. Other training such as shipping and port control (cargo handling) regulations --- applying to lifting appliances and lifting gear used for cargo handling on crane barges --- shall be provided as well.

## Product Realization

Planning shall start from the identification of sequence of the processes required to achieve the product conformity. Constraints shall be identified in this stage as well. In order to have a better planning, identification of customer requirements, review of product requirements, customer communication are the essential inputs to the planning stages.

The output of planning may be in various forms such as business plan, quality plan, etc. Regulatory and legal requirements such as water transport and harbour management (unloading cargo) regulation, boat operation safety instruction shall be considered.

Sometimes the contract review may involve two folds, i.e. the customer service agreement and operation review on shipping order (related to respective service agreement). In order to minimize risk involved, insurance, emergency preparedness shall be considered. Particular attention shall be made to the terminal document requirements as well.

Usually there are no design activities involved in this industry.

The realization processes also involve

- ➔ 1. *Purchasing functions to ensure that the suppliers can fulfill the conformity of purchased products or services.*
- ➔ 2. *Service operations to ensure that the operation is under control by means of the use and maintenance and monitoring of suitable equipment and device, etc.*
  - *Proper storage and handling of cargo*
  - *Unloadings facilities – cranes, boat facilities, rope and strings, communication equipment, freight trucks, etc.*
  - *Review of accuracy of documents such as shipping documents, customer declarations, manifests, house bills of loading, delivery orders, carrying space booking,*
  - *Control of key processes such as cargo consolidation, handling of import and export of cargo, warehousing for inbound and outbound cargoes.*
- ➔ 3. *Customer property shall be taken care of while it is under the company's control.*
- ➔ 4. *Company shall preserve conformity of product with customer requirements during internal processing and delivery to the intended destination. This shall include the identification, handling, packaging, storage and protection.*
- ➔ 5. *Weight, ruler, lifting gear, load indicator shall be calibrated in defined intervals.*

## Measurement, Analysis and Improvement

In order to achieve and assure the conformity and improvement, measurement and monitoring activities shall be exercised. Applicable methodologies including statistical techniques shall be used to monitor the variations in the service performance. The measurement shall include customer satisfaction, internal audit, measurement of continuing suitability of each process, measurement and monitoring of service conformity, non-conformity services, etc. By analysis of collected data, planning for continual improvement can be established. Actions plan can be generated to improve the quality management system. The mechanism for improvement that ISO 9000 adopted is the corrective and preventive actions. Corrective action is to eliminate the re-occurrence of nonconformity services. Preventive action is to eliminate the occurrence of the potential nonconformity services and their causes. Preventive actions taken shall be appropriate to the impact of the potential problems.

