

# CHAPTER I

## INTRODUCTION



### 1.1 Introduction

These days, the concept of globalisation has stimulated the competitiveness in operating business. In a highly competitive business environment, organisation has to be information-rich and knowledge-oriented in its management. Organisation should be able to evaluate itself, its competitors and business environment to maintain competitiveness. Quality management system hence becomes a crucial input for senior managers to monitor performance effectively.

Quality Management System is the process of determining how successful organisations/individuals have in attaining their objectives. It covers all levels, including individuals, teams, processes, departments and organisation as a whole, with the view of continuous improvement of performance against organisational objectives.

Consequently, an effective deployment and implementation of the quality indicator and its measurement will enable organisation maintain competitiveness in an intensified competitive environment whilst the reasonable return to stakeholders can be expected.

### 1.2 Background

ABC, a selected company, is a small to medium sized company whose specialises in manufacturing, sales and marketing of fluid power and motion control system. It was established thirty years ago as a local agent of hydraulic and pneumatic components. Its expertise in this business has provided a great opportunity for ABC to expand its business from a local agent to a full range products and services provider of fluid power and motion control system. Its products include

varieties of hydraulic cylinders, hydraulic hose, hydraulic fitting, power units and valve blocks.

Its main customers are the manufacturing firms in various industries. In the past, the original product with plain features can serve customer needs. However, the changes in development of technology and manufacturing process require for an additional level of product customisation. The quality control of company product is therefore a key success factor for the company to maintain competitiveness in terms of customer requirement fulfilment in this market.

The main targeted internal benefits of ABC in applying quality control procedure is as the followings:

1. to improve customer focus and process orientation within the company;
2. to improve management commitment and decision-making;
3. to ensure better working conditions for employees;
4. to increase employees motivation;
5. to reduce cost of internal failures (lower rates of rework, rejection, etc.) and external failures (fewer customer returns, replacement, etc.); and
6. to ensure a continual improvement of the quality management system.

Besides, the following external benefits is expected to be generated:

1. a higher level of customer satisfaction through a more confident in ABC products;
2. an improved image to the company; and
3. a more confidence in company products with reliance to the regulatory requirements.

Key Quality Indicators (KQI) are the quality measurement system that critical to an organisation's core business. To ensure that customer requirements are being fulfilled, ABC has set its Quality Indicator (QI) in regards to the quality of product into its current quality control system which is the key success factor of this business.

Example of ABC's Quality Indicator that is used for the purpose of customer satisfaction improvement is shown in the following table.

**Table1.1: Example of ABC's Quality Indicator Monitoring Chart**

Quality Policy	Quality Indicator	Target	Frequency
ABC's executives and employees emphasis on deliver quality products and services with on-time delivery to satisfy customer requirements with the continually quality improvement concept.	1. Transportation Department Deliver products to customer within deadline per time schedule.	100%	Monthly
	2. Billing Department Reduce the inaccuracy rate of billing printing.	< 3%	Monthly
	3. Warehouse Department Stock level to be maintained within the Min-Max target	75% of selected items	Monthly
	4. Human Resources Department Increase employee's skill	More than 30% of total employee has to obtain an additional of one skill	Monthly
	5. Local Purchasing Department		
	- Rate of number approval vendors to total vendors	90%	Quarterly
	- Rate of ordered items with the price higher than the standard price	90%	Quarterly
	- Number of on-time delivery	90%	Quarterly
	6. QMR Number of CAR that can be corrected within the time schedule	100%	Quarterly
	7. Foreign Purchasing Department		
	- Prepare quotation within 3 working days	95%	Monthly
	Number of on-time shipment	95%	Monthly
	8. Marketing Department Customer Satisfaction Survey	Result of more than 90% satisfaction	Quarterly
	9. Quality Control Department		
Percentage of return product to be within the target range	Less than 1%	Quarterly	
Percentage of unacceptable product	Less than 0.5%	Quarterly	
10. Product Engineering Department Percentage of on-time delivery	80%	Monthly	
11. Local Purchasing Department Control rating of Vendor Survey	>95% passed	Bi-annually	
12. Warehousing Department (Factory) Stock level within Min-Max target	75% of controlled items	Quarterly	
13. Product Design Department			
- Speed in product design			
- within 3 days for the new design			
within 1 day for the existing design	> 90%	Quarterly	
14. Maintenance Department			
- Machinery utilisation	At least 85%	Quarterly	
- Percent of emergency maintenance	Less than 1% of total working hours	Quarterly	

According to the above Quality Indicator Table, Quality Indicator itself only shows the quality indicators and target. The strategy of how to achieve these targets however does not included. This directly resulted in an ineffective use of Quality Indicator as a tool to improve internal working process and hence customer satisfaction. Moreover, customer survey has not yet been conducted regularly and/or conducted without the following plan. As a result, customer satisfaction improvement through the use of the Quality Indicators is not fully achieved.

### **1.3 Statement of Problem**

ABC can not achieve its objective of increase in customer satisfaction level through the use of the Quality Indicator. This is resulted from the beginning of the process when the Quality Indicator is set. The Quality Target and Indicator are set individually by a responsible department with less alignment to the company vision. The target is ambiguous and somewhat irrelevant to the quality control policy. The specified quality indicator is unclear and difficult to understand. In addition, the measurement method and period are not well specified. These caused an imbalance of internal process and other business aspects and directly affected to an ineffective development in customer satisfaction.

This problem is supported by the result obtained from customer survey. The customer survey shows that there is no improvement in customer satisfaction even the quality control has been applied throughout the manufacturing and operational process.

Due to a lack of an alignment of company's overall quality policy in the quality measurement, the new methodology of an integration of a management system to the Key Quality Indicator (KQI) should be studied and developed. This will enable ABC to effectively use to KQI at all levels of the company in order to develop its business process, increase customer satisfaction along with staff's capability development according to company's goal.

## 1.4 Objectives of the Study

In accordance with the statement of problem, the study aims to achieve the main objectives, which are:

1. To develop a new quality procedure based on key quality indicators.
2. To improve customer satisfaction.

## 1.5 Scope of the Study

The scope of the study is as follows:

1. To develop quality measurement.
2. This study will be focus on the hydraulic cylinders product line only.
3. To study the customer satisfaction survey result within the period of two months.
4. To define and implement related KQI.
5. To evaluate the effectiveness of the recommended KQI.

## 1.6 Methodology

1. Collect related literatures, journals, Internet and research studies in which the information related to the research contents.
2. Study customer complaint report / customer satisfaction survey.
3. Define customer complaint/satisfaction related problems by using Pareto analysis.
  - Create KQI in accordance to company's quality policy and customer needs
4. Develop KQI and targets and deploy to company's current Quality Management System in terms of Quality Procedure (QP).
5. Implementation
6. Evaluate customer satisfaction survey
7. Thesis write-up

**Figure 1.1: Research Schedule**

Procedures	2004									2005			
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
1. Collect the related literatures	■	■	■	■									
2. Study customer complaint report customer Satisfaction survey						■	■	■	■				
3. Define customer complaint/satisfaction related problems by using Pareto Analysis										■			
4. Create KQI in accordance to company's quality policy and customer needs by using business process chart													
5. Develop KQI & targets and deploy to company's current Quality Management System in terms of Quality Procedure (QP)													
6. Implementation											■	■	
7. Evaluate Customer Satisfaction Survey													
8. Thesis Write up										■	■	■	■

## 1.7 Expected Benefits

This research proposes the methodology to integrate method to the existing quality control in order to effectively use of KQI in relation to the company's quality development plan and strategic plan. The expected benefit is as follows:

1. The Quality Management System can be aligned to the company's strategic plan at all level of the company.
2. The quality measurement of studied department will be set at the standard level in the same business direction.
3. The new methodology will provide management with a comprehensive picture of business operations.
4. The new methodology facilitates communication and understanding of business goals and strategies at all levels of an organisation.
5. Increase customer satisfaction level.

## **1.8 Plan of the Thesis**

Chapter 2 presents theoretical aspects related to Key Quality Indicator development including definition of strategy, level of strategy, measurement tools and techniques, Balanced Scorecard, Key Performance Indicator, quality improvement, Pareto analysis, P and D ratio, and reviews related literatures.

Chapter 3 presents an overview of the case study company in aspects of company background, organisation structure, company product, manufacturing procedure and current problems

Chapter 4 proposes Key Quality Indicator Development procedure and target of selected Quality Indicator. Four steps in KQI development are 1) define factory department' s quality policy target, 2) evaluate critical success factors, 3)define Quality Indicators, and 4)select Key Quality Indicators.

Chapter 5 presents details of selected Quality Indicator including quality procedure and target for the purpose of implementation trial phase and further implementation of the company.

Chapter 6 proposes an analysis of customer complaints and how the ABC company can improve its customer satisfaction by implementation of selected KQI.

Chapter 7 presents a summary on research findings and recommendations for further implementation and further study.