

CHAPTER VII

CONCLUSION AND RECOMMENDATIONS

This chapter presents the issues discussed earlier regarding a new quality procedure for the ABC Company to implement with the purpose of customer satisfaction improvement, and recommendations for further study.

7.1 General

With a highly competitive business environment, the information-rich and knowledge-oriented in company's management is crucial for company success. The company has to evaluate itself, its competitors and business environment to maintain competitiveness. Quality management system is therefore one of crucial tools for company success

Presently, the company has applied some quality procedures as a tool to improve customer satisfaction level. However, the result obtained from customer survey shows that there is no improvement in customer satisfaction even the quality control has been implemented throughout the manufacturing and operational process. Moreover, it reveals that the customer satisfaction has decreased with the major complaints in aspect of quality of product and delivery time.

This research then studied how the effective quality procedure can be deployed into the company's manufacturing and operational process in order to increase customer satisfaction level. With limited of time, the main interest is the hydraulic cylinder's manufacturing section since it is the main business of the ABC company.

According to this study, the hydraulic cylinder's manufacturing section's critical success factor has been set with an alignment to the company's strategy. Then, the quality indicator for each critical success factor has been defined. Only the top two quality indicators is then be selected for the purpose of this study and for

implementation purpose. Customer survey and customer complaints are measurement tools of the improvement from implementation. Customer satisfaction level can be obtained through the result of survey. The result however is only for the implementation period of two months only. Therefore, the improvement in customer satisfaction might be more or less from that of implementation phase. This needs the company to monitor closely and amend the process and indicator's target from time to time.

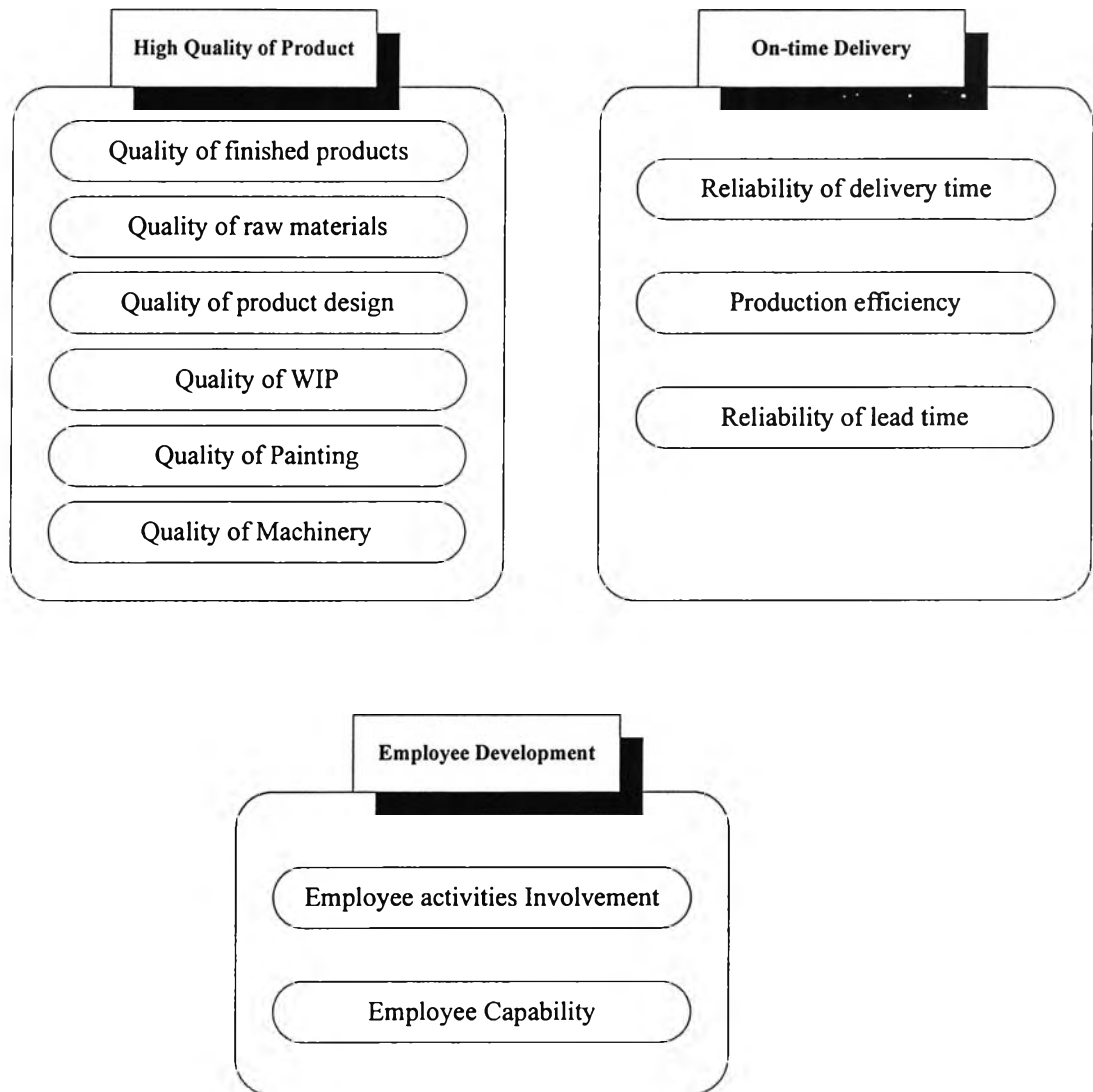
7.2 Key Quality Indicator Development

KQI for hydraulic cylinder division has been defined with the following procedure.

- Define the target of the factory department's quality policy
- Evaluate critical success factors based on customer needs/company's quality policy
- Define and evaluate Quality Indicators (QI) of the factory department.
- Select Key Quality Indicators.

The factory department's critical success factors is summarised in the following figure.

Figure 7.1: Factory Department's Critical Success Factors



Once the company can define the success factors, the Quality Indicator is defined. The Key Quality Indicator is then selected from the criteria of a high correlation to customer complaints and an alignment to company's quality policy and strategy.

Top two Quality Indicators are quality of finished product and reliability of delivery time. The quality of finished products and reliability of delivery's key measurement are 'the number of defects due to quality of finished products' and 'percentage of on-time delivery to total delivery' respectively. Other related

measurements presented in Chapter 5 can be used as a monitoring tool in evaluating result of implementation.

The KQI is then deployed into the hydraulic cylinder manufacturing process as explained in Chapter 5 and 6 in the recommended quality procedure. Once the new quality procedure is applied, the Quality Indicator measurement tool as recommended in Chapter 5 must be applied for the monitoring purpose. However, it can not be conducted within the scope of this study due to a lack of data and limited of time.

The result of new quality procedure implementation can be then evaluated from customer survey result and customer complaint data.

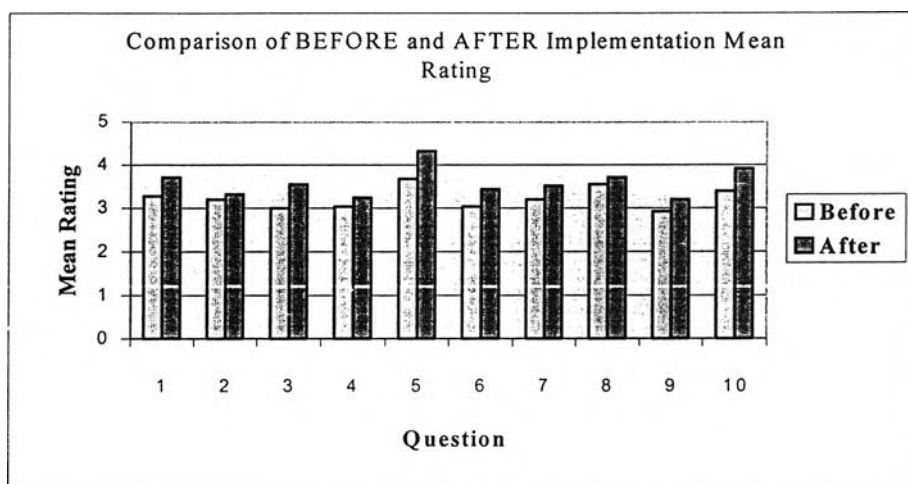
7.3 Key Area Improvement of the ABC Company

According to this study, the ABC Company has implemented the new quality procedure in both quality of product and delivery time aspects during the implementation. The main objective is to increase customer satisfaction level and maintain competitiveness of the company in an intensified competitive environment whilst the reasonable return to stakeholders in a longer term can be expected. The improvement can be positively seen during this trial phrase.

Customer complaints in regards to the quality of finished product and reliability of delivery time reduced from 31 to 18 and 40 to 17 complaints respectively. Average of mean rating result from customer questionnaire is positively affected and increase from 3.24 to 3.60.

Findings from the survey reveal that the overall performance regarding the quality of product and on-time delivery has been improved during the implementation period.

Figure 7.2: Comparison of BEFORE and AFTER Implementation Mean Rating



The average mean rating increased from 3.24 to 3.60. Major improvements are quality of delivery time, quality of product, quality of design and company effort on improvement of product quality and delivery time.

Another evidence for customer satisfaction improvement is a decrease in number of customer complaint regarding the studied issues. The result of survey in major two customer complaint areas comparing monthly result of two-month implementation period to the average result of last quarter of year 2004 in monthly is shown in the following table.

Table 7.1: Improvement in Two Customer Complaint Areas

Implementation	Time	Frequency	
		Low Quality of Finished Products	L a t e delivery
Before	Q42004 (average for monthly result)	31	40
After	Jan 2005	20	25
	Feb 2005	18	17

Again, the company has to take the short-time implementation phase in consideration for further implementation. The expected result might be different in the longer period of time, in terms of level of improvement in percentage. Some problems can be rectified and see the improvement in a shorter time such as quality of product design. This study however can assure the direction of customer satisfaction improvement which is the main objective of this study.

7.4 Implementation Constraints

According to this research, the new quality procedure has been developed from selected Key Quality Indicators. Brainstorming is the major tool used in selecting KQI and setting up the new quality procedure, which is considered to be too abstract.

Moreover, the new quality procedure with selected KQI deployment has been developed with the assumption of the capable staff on board with the full support from management team. The capable staff must have an ability to get the job done in the right direction and understand his/her own job well. However, the author found out during the two-month implementation that the improvement of staff's skill and motivation as well as the management team's support are the top priority for the company to create in order to accomplish this implementation. Another thing the company should take into consideration is the improvement in data gathering and collection process. The author found out that it is rather difficult to obtain the actual result of implementation especially in number of days used in manufacturing process from this company due to a lack of cooperation. Thus, the author has to use the result of customer survey and customer complaint, which is the indirect result of implementation in terms of delivery time to conclude the direction of improvement. The conclusion from the survey therefore can only assure the direction of improvement in customer satisfaction.

7.5 Recommendations for Further Study

According to this study, the procedure with KQI deployment is set with the information taken from the last quarter of 2004. This is a short period of time whereas the detail of manufacturing process can not be studied in depth, especially for the made-to-order product type. Nonetheless, the implementation period of two months can provide the company a direction of improvement in customer satisfaction level. The level of changes can be different from the result taken in this implementation phase. The company should therefore examine the problem of product quality and lead time reliability with additional time and effort. The deployment of KQI into the manufacturing process is however the initial guidance as a basic foundation for further improvement. Additionally, a support from top management team of the ABC company is vital for a success of KQI deployment and implementation. The company should revisit its culture of one-man show and change it if necessary prior to set KQI plan in other departments.

Furthermore, the other departments can use this study as a guideline of how to define KQI and apply it into the business and operational process in order to achieve an increase in customer satisfaction level and maintain competitiveness in the market.