Chapter 7
Conclusions and Recommendations

7.1 Conclusions

This thesis is concerned with incoming inspection and supplier evaluation in a case factory with the purpose to examine the current practice and propose ways to improvements. The first step was to identify problems in the current practice and try to figure out root causes. A cause-effect diagram was used as a tool to gather opinions and ideas regarding possible causes of problem from all people concerned. The existing practice in incoming inspection was identified in four major areas which were MAN, Machine, Material, and Machine &Measurement. Results from this finding suggested necessary improvements in each area to enhance overall effectiveness of incoming inspection process. After all these problems had been sorted out, an inspection plan and standardized work instructions for inspection of each key raw materials were created.

Regarding the system for evaluating suppliers, the existing system was found to be inadequate and was not comprehensive enough to measure all important aspects of a supplier. Only suppliers' product quality and delivery performance had been measured in the existing system. In addition, the existing evaluation system had been designed by the factory side alone without consulting with other concerned departments. Rating of suppliers had also been done by factory alone. The new system was aimed to overcome these shortcomings. The new evaluation system measures the supplier's performance in four major areas which are product quality, delivery, pricing, and service, providing a more comprehensive view on a supplier. Rating of suppliers in each of these areas requires joint collaboration from all departments affected by that area of supplier's performance to ensure that suppliers are viewed from all angles. Furthermore, audit system was also added as another important activity to assess suppliers' internal processes and facility, making sure the their internal systems are supporting their good performance The cross-functional team approach was emphasized throughout all stages from identification of the problems under the existing system, trough design and implementation of the new system,

The newly established inspection plan and supplier evaluation method was put into practice since March 2002. A six-month period was set for observation of the results

after implementing the new systems for raw materials inspection and supplier evaluation. The results showed high amount of materials rejected at receipt inspection during the first few months of implementation and a subsequent decline in following months. This implies the tougher nature of the new incoming inspection practice and suppliers' ongoing attempts to improve their quality. In addition, overall service of suppliers has demonstrated improvements which were agreed by the majority of evaluating people. Delivery performance also improved. On-time deliveries has improved from 85 percent and 83 percent for masking paper and pigment/dye respectively before implementation to 95 percent after implementing the evaluation system. As for effects on final product quality, there were a remarkable decline in defects caused by masking paper and pigments. In addition, carrying out this project also encouraged the company to rethink about its ultimate objective which is to satisfy customer, and from there formulate appropriate policy on how to deal with suppliers in order to leverage to the company's success.

7.2 Recommendations

1. As explained earlier, the inspection plan proposed in this thesis was created as an initial plan, thus it needs to be fine-tuned to be more suitable in the future. After a certain period of monitoring suppliers' performance, the company would be able to know about the quality of each supplier of each material. This information, together with material acceptance records, can aid the company in deciding if tighter inspection is needed for which material and which material can use reduced inspection.

2. In order to accurately determine the amount of defective materials entering the production, the company should try to find ways to detect in-process defects at each stage of production. Based on current capability the company may not be able to do so, but some acrylic sheet companies in the West has already been able to do. The company then should carry out a study on how to install such system.

3. The proposed supplier evaluation system measures all suppliers using the same criteria and weightings given to each quality category. The company may adjust the weights given to each criterion to be more suitable if it thinks some suppliers

4. Because of limited timeframe, at the time this thesis was written the results of ratings for all suppliers had not been ready thus only key suppliers were used in analysis. However, as discussed about validity of rating scale in chapter 4, after the company have obtained rating results for all employees, the company can then study the central tendency and dispersion of the rating scores obtained by suppliers. From there the company will be able to more scientifically decide as to how to adjust the rating scale to be more appropriate in putting suppliers into their right classification levels. Statistical principles can be used in making such decision. For example, the company may determine approximately how many percent of suppliers should fall within each classification level. Using the mean score and information about score dispersion, the company will be able to set score range in each level based on statistical ground.