Chapter 3
Background of the Case Factory and Current Practice in the Areas of Incoming Inspection and Supplier Evaluation System

This chapter gives a brief description of the company's background and explains current situation from observations in the studied company with respect to its incoming inspection and supplier evaluation activities.

3.1 Background of the Company in this study

The company (will be referred to as "ABC" company throughout thesis) in this study is one of the largest producers of cast acrylic sheets in South East Asia. The company is headquartered in the heart of Bangkok and having its plant located in Bangpoo Industrial Estate, Sumutprakarn Province. The company was established in 1989. Since its inception as a small, family-owned business, the company has grown rapidly to become one of the biggest in South East Asia through several capital raising activities and investments from foreign partners.

Brief details about the studied company are detailed as follows:

Type of Business:	Manufacturer and distributor of cast acrylic sheet.
Product:	Acrylic sheets of various sizes and a wide range of colors (more than 20 sizes in over100 colors)
Employees	About 250 (about 30 in the head office the rest in the factory)
Management Style	Financially the company has changed from a single-owner company to become a joint venture with foreign partners. Board of directors are now comprised of representatives from all investing groups, however, management team is still dominated by family members of the original owner who still remains Chairman of the Board.

Sales&Marketing	The company sells to both domestic and overseas markets in over 20 countries around the world, with the proportion of about 60:40 for overseas sales to domestic sales.
Competitive Position	Domestically the company is competing with four major competitors almost the same size of the company. However, in the international marketplace the company is competing with numerous producers located around the world including those in lower-cost countries.

3.2 Company Structure

The company's organizational structure is somewhat simple as shown in the chart below.

Figure 3.1 The Company's Organization Chart

Figure 3.2 illustrates how the organizational structure in the factory looks like. Apparently this is somewhat different from a standard organization chart, as work seems to be divided among key people rather than departments. Each key person oversees more than one job function (For example, Manager B is taking care of both quality control and warehouse & delivery). The reason for adopting this kind of organization setting so far is due to limited number of qualified professionals in the early years of the company and the fact that the work in some areas was to little to justify a separate department. The result was that one manager had to oversee more than one area of activities, some of which is not area of their expertise.

3.3 Manufacturing Process of Acrylic Sheet

A briefing about the manufacturing process may be useful. A simplified manufacturing process is illustrated in the chart in Figure 3.3.

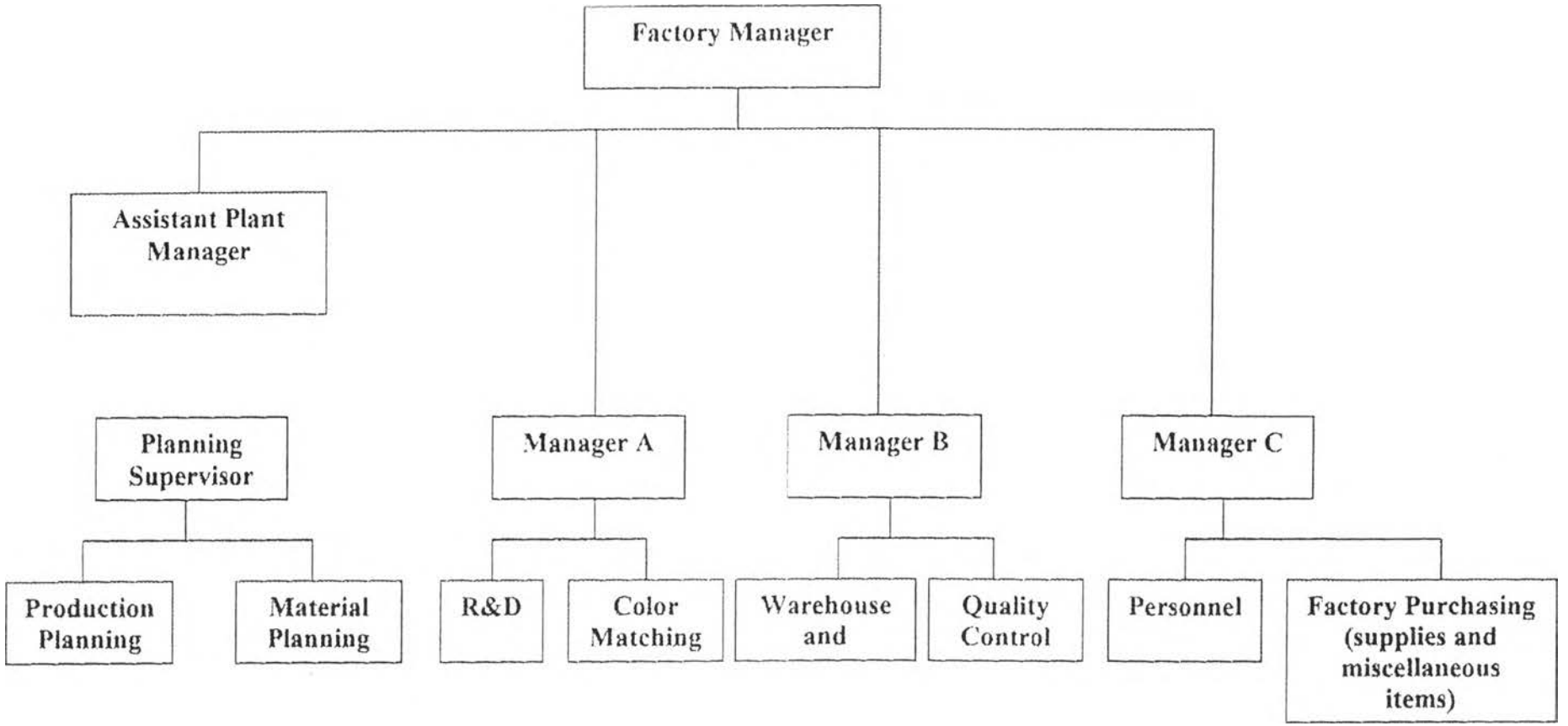


Figure 3.2 Factory's Organization Chart

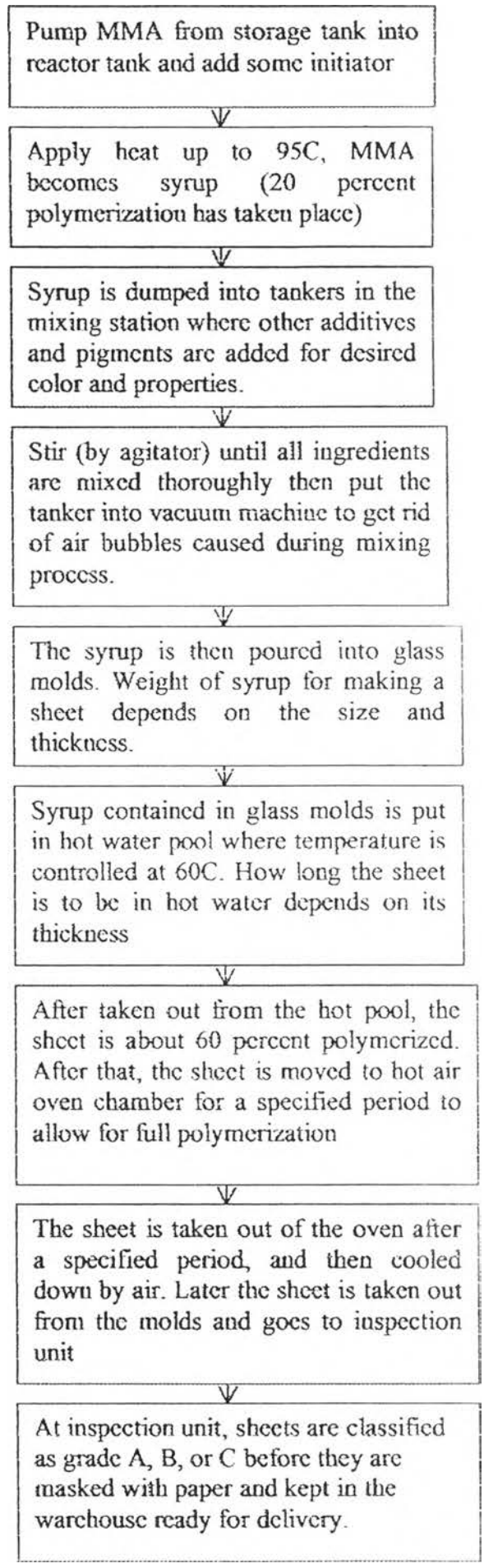


Figure 3.3 Brief Manufacturing process of cast acrylic sheet

3.4 Purchased materials and their role on the organization

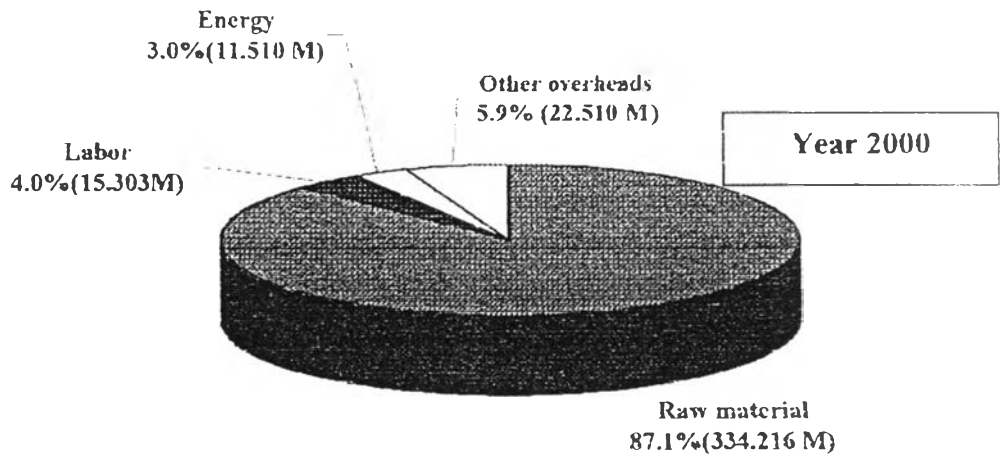
In order to understand well the importance of incoming inspection and supplier evaluation process. Let us look at how products/ services from suppliers contribute and have impact on the performance of the company.

3.4.1 Purchased materials and cost of production

Acrylic sheets can be said to be a product with low added value. For this kind of products, profit margin is relatively low. In the case of the company this can be shown by the following figures from year 2000 and 2001.

	2000	2001
Sales Revenue (Million)	456.616	362.549
Cost of Sales (Million)	383.539	303.336
Percent Cost of Sales	84.00%	83.67%
Gross Profit Margin	16.00%	16.33%

From the above figures cost of sales is as high as 84 percent of sales revenue A more detailed breakdown of this cost of sales reveals some fact as shown in Figure 3.4 below



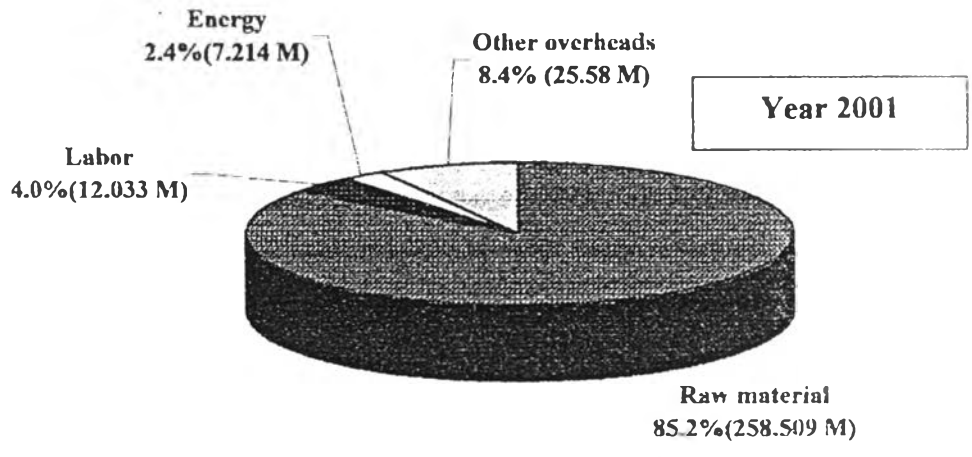


Figure 3.4 Breakdown of production cost for the year 2000 and 2001

From the product cost breakdown, purchased materials obviously represent the largest cost element. It is clear that if we can reduce this cost of purchased materials (through better product quality and less defects), we are likely to improve our profitability substantially.

3.4.2 Purchased Materials and their effects on company's performance and profitability

Like any other businesses in today's business competition, quality plays a significant role to the survival of sheet companies and is one of most important facets of competitiveness.

- Industry average profit margin is in the range of 10-12 percent (data provided by Itochu Asia Corporation, one of the world's major MMA producers and a major shareholder of the company). Being commodity product by nature, pricing is usually determined by the market rather than by the producer. The implication is any loss produced in the producer's process cannot be passed to customers. It is the producer that has to bear the entire loss and this will certainly affect the company's bottom line. The company has struggled hard in bringing down the product defect rate from

more than 15% to 8% within the last two years. It is this huge amount of defects that has created substantial accumulated loss over years.

- Large-volume production means that every percent improvement in production yield would result in substantial amount of money saved. In the case of the company, with its current annual sales of about 500 million Baht, by reducing defect rate by 2 percent, the company will be able to increase profit easily by almost 10 million Baht. (Cost of products sold is approximately 80 percent of selling price)

- Recent trend is that many acrylic sheet producers are planning to relocate or expand their facilities into lower-labor-cost countries such as China and Vietnam. From this it can be foreseen that future competition could be more intense with introduction of low priced sheets into the market. In order to remain competitive, the company must strive to keep its costs as low as possible. Therefore, it cannot afford to produce such amount of defect it has been doing, as this loss adds cost to the product.

- Emergence of new competitors will bring to customers greater variety of choices. Products with lower quality will be likely to be wiped out of the market.

With this increasing awareness for the importance of quality, the company has strived to improve its product quality. So far many attempts have been made to improve internal factors in the plant including improvement of production process, upgrading of machinery and raising the standard of working people. Substantial reduction in defects has been achieved (from more than 15 percent to about 8 percent within two years). However, after all of these areas have been sorted out, the rate of improvement seems to be standstill at the rate about 8 percent, no matter what efforts put into improving internal factors. It is now that management comes to realize that one important area, raw material, which adds significant variability to the production process has been overlooked. It is expected that more than 50 percent of loss in finished products have something to do with raw materials. The next section discusses and estimates economic loss potentially incurred from raw material problems.

3.4.3 Economic Consideration on the Effect of Raw Materials' Quality Problem

Expressing the material-related loss in monetary term can provide a clear picture for the importance of raw materials.

Table 3.1 shows typical defects found in acrylic sheets and their potential causes (suggested by R&D). Defect rates shown are average figures during Jan 2001 to Dec 2001. From Table 3.1, average defect rate during this period was about 12.7%. An Internal brainstorming was set up to find out the causes. The brainstorming team consisted of managers from R&D, production, and QC. The author participated in the meeting as an observer from Administration department. The brainstorming concluded that materials should have significant effect on defects. As explained earlier it is very difficult and requires complex investigation to pinpoint how much defect is really caused by substandard material because defects are actually the combined result from raw material, process, and other numerous factors.

For simplicity let us make a conservative assumption, which is supported by various publications that at least 30 of defects can be traced back to quality problem in raw materials. With current overall defect rate standing at about 10-12 percent of total production, quality problems of raw materials is likely to affect 3.2 to 4 percent of total production. This amount is huge considering high volume produced each year. Yearly production is about 7,000 MT, thus the defect is 210-250 MT. This can be converted to about 14-15 million Baht. Compared to 12 million profit of last year, this is a huge opportunity to improve the company's profitability. With present annual sales of about 500 million, every one percent reduction in defect can be translated into approximately 4-5 million Baht saved.

In addition to this loss caused directly by defects, there are also other costs incurred as consequences of these defects, though perhaps less obvious. Below are significant costs incurred from producing one defective item.

1. Cost of material used to produce such defective item
2. Labor cost used to produce this defective item
3. Overhead cost (indirect material, indirect labor, energy cost, machinery wear, etc.) used to produce this defective item
4. Cost of inspecting this defective items

5. Opportunity cost considering that the same resources and time used in production of the defective item can be used to produce other good products.

Another significant effect from defects is that by producing substantial defects at 10-12 percent as at present, the production planner usually finds it necessary to produce more than the actual ordered quantity in order to prevent shortage of raw materials of a portion of them are found defective.

Defect Type	Details	Potential Causes	Percent Occurrence
Thickness Variation	Thickness variation across the sheet is higher than specification	- Poor surface quality of tempered glass molds - Pressure exerted on C-clamp is not well controlled	3.4%
Color Deviation	Sheet color is different from that of standard	- Inconsistency in the shade of pigments received from suppliers - Human error in measuring the quantity of pigments.	2.1%
Wrinkle	Wrinkle on the sheet surface normally found along the edges	- the sheet is overcooked or undercooked (inappropriate curing time in oven and water pool) - Polymerization process is too fast due to the condition of catalyst	1.9%
Bubble	Air bubbles in the sheet, can occur in any part of the sheet	- Incorrect dosage of catalyst used - Catalyst may not be in good condition	1.5%
Sunk Mark	- Sunk mark on the sheet surface	- Inappropriate amount of catalyst - Condition of catalyst	1.1%
Masking Paper/Film ** (Customer Claim)	- Masking paper/film lift up during storage. - Masking paper is very difficult to remove and get torn during removal	1. Insufficient glue or glue with insufficient adhesion. 2. Too much glue, changed type of glue, or old-stock masking paper	1.7%
Total			**12.7%**

Table 3.1 Typical Defects and Potential Causes

3.4.4 Human-related issues relating to purchased raw materials

As raw materials affect quality of finished product and the work of many people, there are some peoples' problems arising in manufacturing organizations. The company is no exception. Following are typical problems related to purchasing and use of raw materials

- Production always blames purchasing for buying in poor quality materials and inspectors for passing bad items to be used in production, resulting in quality problem in finished products.

- For the purchasing side, they always complain about their difficulty in sourcing materials based on unclear specifications and production requirements. Based on the purchasing manager, certain requirements in the specifications seem to be irrelevant to the proper functioning of the products Purchasing always questions the appropriateness of the specifications and accuses production of setting unrealistic specifications, making frequent change without good reasons, making it hard for purchaser to find qualified suppliers.

The buyer-supplier relationship is also affected by this unclear specification and inconsistent inspection practice. Without a common understanding between the company and it suppliers, disputes often occur whenever a quality problem is found in the material and there is no proof as to whether the material is really bad or the inspection is not providing correct result.

3.5 Quality Management and department responsible

From the organization chart in the Figure 3.2, there is no separate department and dedicated professional responsible for the quality issues. This clearly reflects a serious lack of awareness of the importance of quality.

Being a small to medium-sized, family-run manufacturing company, the job description for each company and person in the organization was not so clear-cut. Quality Control department has just been added in the organization chart two years ago. In the past, quality control function was not shown in the organization chart but

was understood to be the responsibility of production supervisors and was overseen by Assistant Factory Manager.

However, even with the so-called "Quality Control" department, it seemed that most of the jobs supposed to be taken care of by QC has not yet been performed. Without a formal guidelines and experienced personnel with sound understanding in quality control and assurance, the main tasks being performed by quality control department now are mainly just inspection of raw materials, finished products, and keeping information from these inspections.

3.6 Current Systems for Incoming Inspection and Evaluating Suppliers

This section explains the present situations in the area of incoming inspection and supplier evaluation

3.6.1. Incoming Inspection

- **Department responsible**

As explained earlier there is no separate department to take care of quality issue. Rather, the job of quality control is put as just part of the jobs of a manager, who is also handling warehouse and delivery. Therefore, there is no manager to fully concentrate on inspection tasks. The job of checking incoming goods is thus assigned to the supervisors.

- **Scope of Responsibility**

The inspection department is responsible for checking the quality of incoming material to ensure conformance to specifications and product requirements.

- **Personnel**

At present there are only two supervisors and three other receiving workers. None of these people has college education and scientific background. Nor have they received any formal training regarding material properties and inspection practice.

- **Testing and Inspecting**

Testing and inspecting methods were established by R&D professionals who are aware of the necessity of the chosen characteristics to fitness for use of the final product. However, field inspection is to be conducted by inspectors who are not aware of this knowledge.

Testing for certain characteristics sometimes require complex tests other than visual inspection. Material testing is thus the responsibility of R&D department.

Not all inspection and testing procedures have been documented and put in official form. In addition, formal system to maintain record of testing and inspection has not been established. Changes in procedures are occasionally done without updating the document.

3.6.2 Inspection methods of key raw materials

There are four types of raw materials being used in the production:

1. Methyl Methacrylate Acrylate (MMA monomer) is the most important raw material. It is one kind of monomer in liquid form. MMA is a downstream product of petrochemical refining industry, thus it can be supplied by only handful of producers worldwide.
2. Chemicals and additives: these include process initiator added before and chemical ingredients added during the polymerization process to give the final products desired properties and characteristics.
3. Masking Paper/ Film. These masking paper/ films are masked on the acrylic sheets to protect them against scratches and surface damages during storage and transportation.
4. Mold Glass. Mold glass is not part of the final product, but it is very important as molds determine the shape of acrylic sheets. Mold glass plays a vital role to the sheet quality, especially those properties related to surface and appearance of the sheet. A good mold glass must be flat and has even thickness across the pane.

Here we will proceed to look closely at how inspections are being conducted for each type of raw material.

1. MMA

MMA is normally delivered in a long tanker. Once entering the factory's compound, the inspector will first check the quantity delivered which is normally expressed in term of kg. A weighing bridge near the factory's gate is used to measure the weight of the trailer before unloading and after unloading. The difference is the weight of MMA unloaded into the tank.

As for other qualities of the MMA, they are generally expressed in term of specifications which are related to physical and chemical properties. Due to the unavailability of necessary equipment in the company's lab, inspectors were just instructed to check the Certificate of Origin against the specifications.

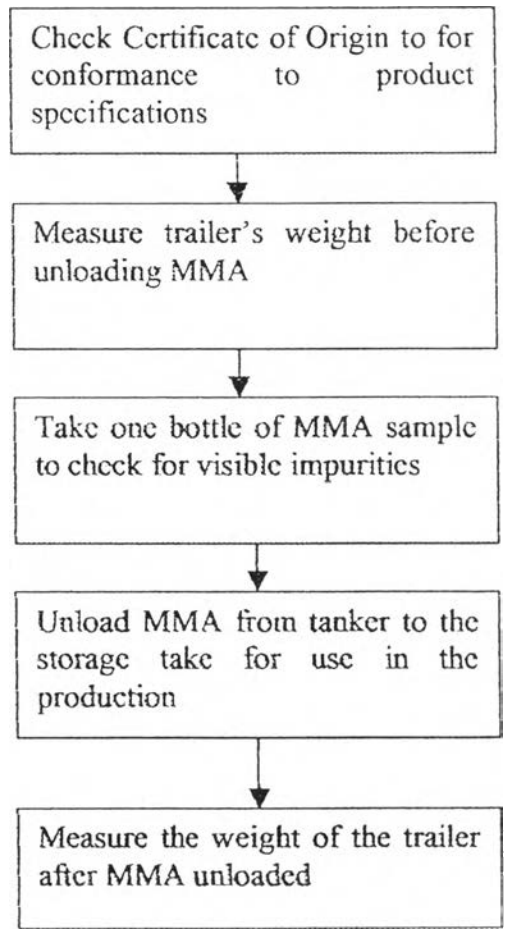


Figure 3.5 Inspection Process at Receipt of MMA

2. Additives

Additives are chemicals added to MMA monomer in order to obtain desired properties. Specifications of these additives often involve many physical and chemical properties. Testing of these additives is not done routinely because necessary equipments are not available internally. Test will usually be conducted in cases of new suppliers submitting the goods for trial. In these cases, testing will be done in-house for certain product characteristics which the company has equipment and ability to conduct the test. Other properties will be sent out to be conducted by other recognized testing companies/ organizations. Tests will be conducted also in cases where there is a doubt about quality of goods in some lots. Properties to be tested and methods used in the tests have not been put in written format.

3. Pigments/ Dyes

Pigments are purchased from two suppliers in Taiwan. Incoming inspection for pigments was just for checking the quantity delivered against that invoiced and the shade of pigment/dyes. It is important that the shade of a particular pigment/ dye be constant over different lots, as deviation in pigment/ dye shades has been the main source of color shade problem in the final sheets. However, inspection for color shade can be done only visually due to lack to sophisticated equipment. This inspection for color shade is very subjective and ineffective as a color can be viewed differently by different individuals and even by the same individual under different lighting conditions. Regarding sample for test, now the guideline is to take a sample of 10 percent of the submitted lot to test for conformity. If the first drum is acceptable, the whole lot is accepted. If any drum in the first sample turns out to be unsatisfactory, then the second sample of another 10 percent is selected for testing. If the second sample is Ok, then the whole lot is accepted, otherwise the whole lot is rejected.

However, there were cases where the company had to accept the pigment though found under specification because there was no pigment available for production and rejection means the company will have to wait at least for a month for the replacement lot. In these circumstances, the company risks producing defective sheets by using defective pigment/dye.

4. Masking Paper/ Film

Masking paper is usually delivered in large quantity because of high shipment and transportation cost. The goods are normally packed in cartons. The inspector will check the arriving cartons to make sure the quantity is correct. Important quality characteristics of masking paper are its thickness and more importantly its adhesion strength. However, due to lack of necessary equipment there is no such test for these properties.

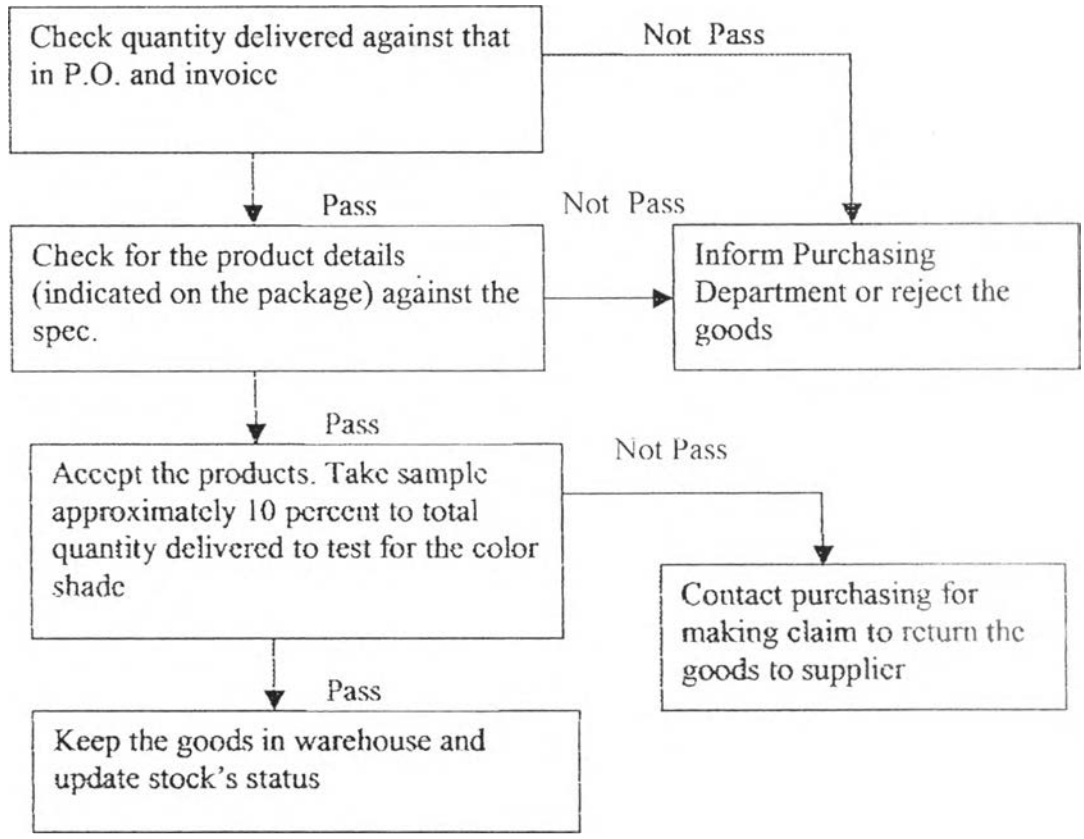


Figure 3.6 Inspection process for receiving of pigment/ dye

3.7 Supplier Evaluation System and Selection of new suppliers

3.7.1 Overview of Current Supplier Base

As of 30 May, 2002, there were a total of 137 suppliers in the company's supplier base. Shown in Table 3.2 is the summary of purchases from January 2002 to May 2002, broken down for each type of material.

Material	No. of suppliers	Purchased amount (THB)	Percent	Years doing business with the Company
MMA	1	85,134,8,00	71.18	6 years (after the MMA provider became shareholder)
Masking Paper	2	11,748,239	9.82	More than 10 years
Mold Glass	2	4,013,034	3.36	One about 10 years, another new source for about 3 years
Additives	5	1,601,200	1.34	N.A.
Pigment/Dye	2	1,370,321	1.14	Since the company's start
Others	125	15,741,765	13.16	N.A.
Total	**137**	**119,609,449**	**100.00**	

Table 3.2 Distribution of purchased values on suppliers

From the above table, the five main materials (MMA, masking paper, mold glass, additives and pigments) provided by 12 suppliers account for nearly 87 percent of total purchases. The implication is that by focusing on improving quality of incoming products and suppliers of these product items, the company is likely to improve substantially. This is the reason why this thesis chose to focus on these items.

Most of suppliers currently providing goods/ services have been selected long time ago, some since the start of the company. At that time the company had no systematic basis of how to choose a supplier. Some suppliers were chosen because they were the only ones accessible by the company or those willing to produce products for the company when demand was low during the early years of the company' operation.

3.7.2 Department responsible and involved in supplier assessment

At present, two departments are involved in the process of supplier evaluation, though not in a well-coordinated fashion. Purchasing is responsible for keeping track of price movement of raw materials, while factory is concerned with the quality of materials fed to their production and how on-time deliveries are. However, there is no formal form of communication and coordination between the two departments. Worse, sometimes these measurements are ever carried out as tools for accusing each other. For example, the production keeps record of material problems and late deliveries to use in defending themselves when there are problems about quality in the finished products or some shipments cannot be shipped on-time, accusing raw materials' problems as culprit for the occurring problems.

3.7.3 Current method used to assess suppliers

The company has just begun a system for evaluating suppliers since the last quarter of 2001. The system was created by the factory and is very simple whereby a supplier performance is measured by only two criteria, which are:

Product Quality - Suppliers are assessed for the level of their product quality measured by percent of lots rejected. The index is equal to total number of products rejected during the assessment period divided by total number of products submitted. This index is then multiplied by 50 which is the full mark for product quality characteristic.

Mark for product quality = (Total number of products rejected/ Total number of products submitted) x 50

Delivery Performance - is represented as percent of on-time delivery. The index is simply derived from total number of on-time delivery divided by total deliveries made during the assessment period. This index is then multiplied by 50 which is the full mark for delivery performance characteristic.

Mark awarded for delivery = (number of on-time deliveries/Total deliveries) x 50

Examples of the forms currently used for supplier evaluation can be found in Appendix A.

Marks awarded for both parts are then combined to get the total score. The full mark is thus 100. A combined score of over 85 is considered satisfactory. If a supplier scores much lower than this level, the factory will inform and ask the purchasing to contact the supplier. A letter explaining the cause of the problem and a promise to correct the problem is sometimes required.

The job of keeping suppliers' performance record belong to the factory while purchasing only cares about price movement. There is no means to link these two areas of concerns together.

Supplier evaluation is not a serious practice at present. While records are kept to monitor suppliers' performance, there is no clear policy as how to deal with suppliers based on the assessment result; how to reward high-performance suppliers, how to deal with those with poor performance, etc. In short, the system for evaluating suppliers have not been tied to policies of other areas of business.

3.8 Current Problems Regarding Purchased Raw Materials

There has been a prime concern over the quality of raw materials purchased from suppliers. Significant amount of defective materials had been suspected to pass into production. However, so far the company has not been able to really measure this amount because the production process is in such a way that after all ingredients have been mixed in liquid form, the mixture will go through all the stages and in-process inspection is not possible based on the company's current technology. After the sheet is solidified and taken from the mold, there is no way to identify exactly the causes that have made the sheet defective, as there are too many factors involved. Therefore it is of crucial importance that the company ensures effective measures are practiced so that minimum amount of defective materials can be passed into production.

Figure 3.7 illustrates the prime causes for possible slippage of substandard raw materials. This was obtained by internal brainstorming with participants from all departments concerned. As can be seen in the figure, there are two main reasons. First is the quality of suppliers themselves. Without good selection process, some suppliers that should not have been dealt with in the first place have been included in the

supplier list. In addition, lack of effective evaluation system makes it impossible to correctly assess the performance of each supplier in order to take proper action and instruct them as to how to improve. The consequence of having unqualified suppliers is that they always supply the company with consistently low quality materials. This situation is worsened by the lack of effective inspection plan to screen out bad items at receipt. These problems are clearly depicted in Figure 3.7.

3.9 Analysis for Problems in the Current Inspection Process

In order to improve incoming inspection and supplier evaluation systems, the weaknesses of current systems must first be identified. The brainstorming technique was held among representatives from concerned departments (quality control, purchasing, production, lab) to list out factors likely to be the causes of the problem. For incoming inspection problem, using cause-effect diagram, the Team listed out and concluded on a number of root causes as shown in Figure 3.8. Four areas are considered which are Man, Machine, Method, and Material.

Man – Because there was no clear job description, written work instruction for inspectors, most of them appeared not to have standard working practice. In addition, there was no training for correct ways to conduct inspection/ testing.

Machine – Measuring/ Testing equipment were not in good condition and some equipment were not available.

Method/ Measurements- This may be the most important problem. There was no written inspection plan in written format for inspecting people to follow as the standard practice for testing/ inspection.

Material – This is the result from selection and evaluation of suppliers. When the amount of defective materials from suppliers is huge and not consistent, it becomes more difficult to detect these defective items and the chance of accepting defective materials becomes higher.

Details of these problems along with ways to improvements are shown in Table 3.3.

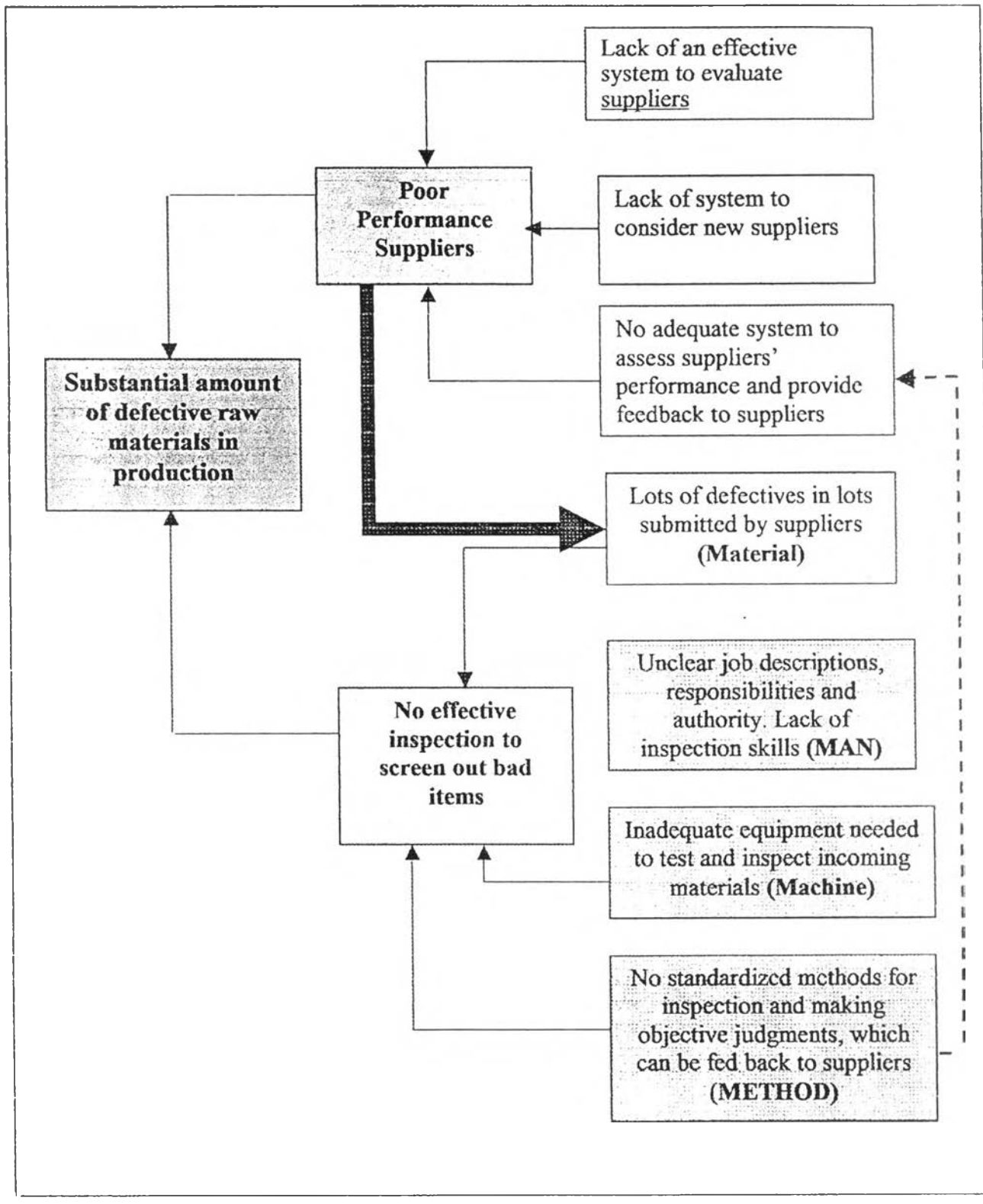


Figure 3.7 Diagram showing the causes of substantial amount of defective raw materials

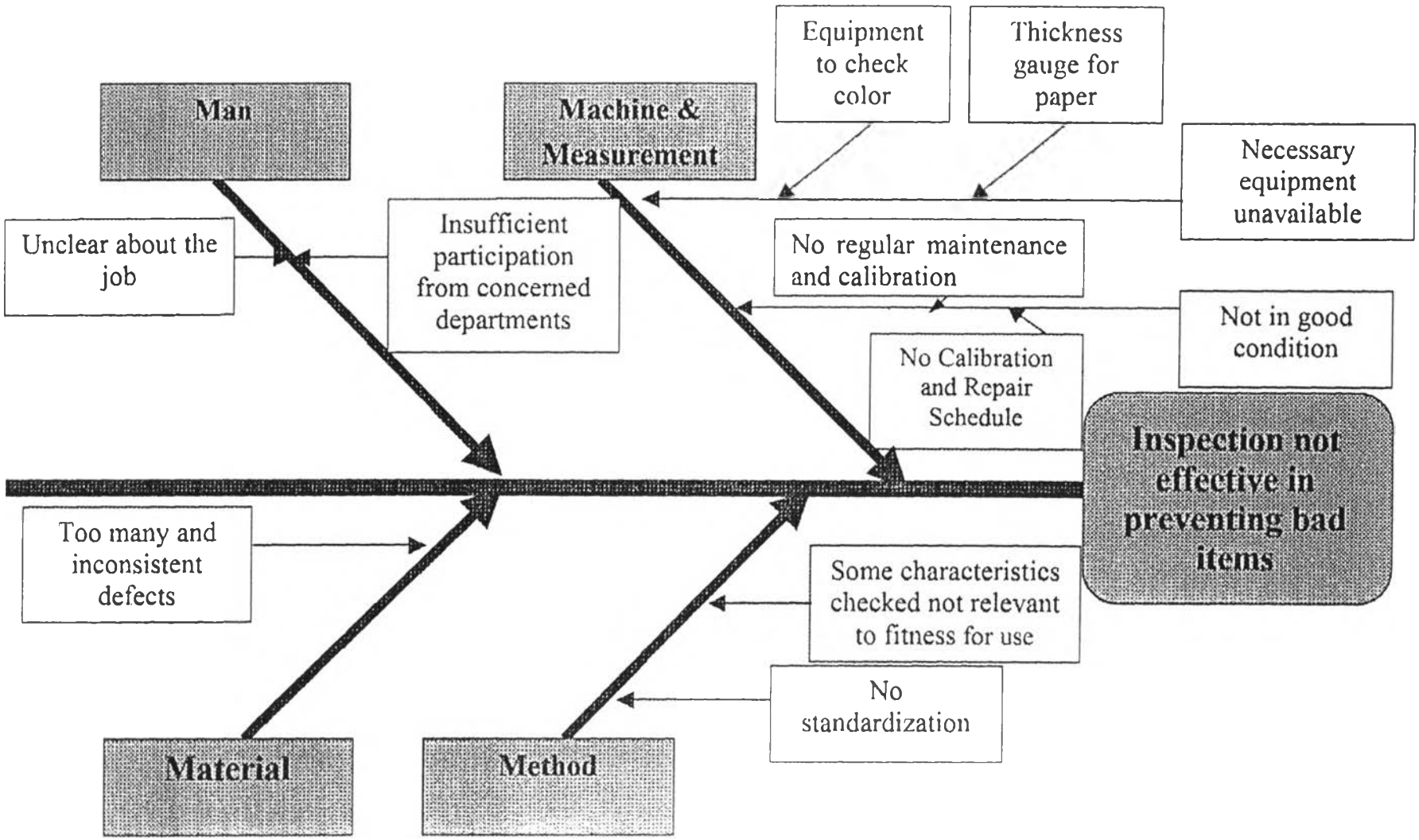


Figure 3.8 Cause-Effect Diagram to identify causes for inspection problem

	Problems Observed	Consequences	Possible Solution
1. Man	1. Unclear responsibility and authority of inspectors and QC department	1. Inspectors are not so clear about their responsibility and authority to reject incoming materials, resulting in pressure on inspectors.	1. Clarify the jobs to be performed by each department and assign specific duty and authority to each person.
	2. No involvement from concerned parties in defining inspection criteria, material specifications and action to be taken when problems occur.	2. Specifications and inspection criteria may not be appropriate, irrelevant to the requirements really needed for the materials to function properly	2. Existing specifications must be revised and new one created by a joint panel with representatives from all departments concerned.
	3. Inspectors are not well-trained about specifications and inspection methods	3. Incorrect inspection method can result in incorrect and confusing results difficult to interpret.	3. Provide regular training to inspectors and concerned people

Table 3.3 Causes of problems in the existing incoming inspection

Factors	Problems Observed	Consequences	Possible Solution
2. Machine/ Measurements	1. Some necessary equipments are not available, e.g., spectrophotometer to be used to measure color. 2.Some instruments are not in good condition, giving inaccurate and unreliable results	1. Subjective evaluation must be used instead. Different inspectors may judge the same item differently. 2. Incorrect judgment may be made from incorrect information.	1. Production and R&D suggest to management equipment that is worth investing. 2. Calibration and maintenance plan should be set up to ensure equipments are always in good condition.
3. Method and Measurements	Lack of standardized inspection procedures and guidance for making objective judgments.	Different inspectors practice somewhat slightly and may make different judgments on the same item.	Inspection methods must be standardized, documented, and adopted companywide.
4. Material (from Supplier)	1. The majority of materials are chemicals, which normally are defined by many physical and chemical properties, which are very difficult to measure, even in lab. 2. Some suppliers are not providing sufficient information. For example, no COA, or providing documents that do not match with the product lots. .	1. Not all lots and all types of chemicals can be tested in-house. The company must then rely on product information supplied by suppliers. 2. Judgments are made based on insufficient information, especially for items difficult to inspect.	1. Ask suppliers to provide necessary information for every lot submitted. 2. There must be a system to ensure that the company is dealing with qualified, trustworthy suppliers. (a good selection system and a evaluation system are needed.)

Table 3.3 Causes of problems in the existing incoming inspection (Continued)

3.10 Analysis of Current System for Evaluating Suppliers

The Team proceeded to examine the current method used to evaluate suppliers and listed out a number of drawbacks. Ideally, these benefits should be expected from a good supplier evaluation system

1. The system should help improve buyer-supplier relationship
2. It should encourage continuous improvements to suppliers
3. It should provide suppliers with feedback about their quality
4. It should provide useful information for the buying organization in making buying decision with its suppliers

The current system does not seem to produce any of these benefits. It was practiced merely for internal reference purpose and worse as a defensive weapon for the decline of efficiency in the plant (by linking quality problem with poor suppliers' performance).

Below is the summary of the drawbacks observed in the current system used to evaluate suppliers. From these identified problems, we can generate a set of desired features of the new system as shown below. These features will be taken seriously into consideration when designing the new system. The design process and detail of the new evaluation system is discussed in chapter 5.

Existing System	Desired Features in the New System
1. No clear objectives	1. A system with clearly defined objectives
2. Performance assessment was based solely on two operational criteria (delivery and product quality)	2. A more comprehensive view on suppliers' performance though the use of more appropriate criteria
3. Evaluation system was designed and used by factory alone	3. More involvement from concerned departments in all stages from design to implementation
4 Assessment results were of little use in buying decision	4. Assessment should be linked closely to buying policy
5. No incentives given to promote continuous improvements.	5. Incentives should be built into performance assessment for promoting suppliers' continuous improvements.

Area to Consider	Observed Problems	Consequences	Possible Solutions
Objective	There is no clear objective for the evaluation system being practiced at the moment. It is serving only record purpose.	People see little use of the system, thus giving little attention on it.	A new system must be created with objectives clearly defined.
Criteria Used for evaluation	1. Performance assessment is presently based on only product quality and delivery 2. There is no supplier audit to verify if the suppliers really meet requirements.	1. The assessment result fails to reflect suppliers' true performances 2. There is no means to verify if suppliers really meet the company's requirements	1. Other meaningful criteria must be selected and added to measurement. 2. Incorporate an audit to the system
Buyer-Supplier Relationship	1. The system does not promote suppliers to work on continuous improvement. 2. Buying decision is most influenced by price, sometimes even ignoring quality and delivery and service.	1. Long-term suppliers tend to be complacent to improving. 2. Suppliers care little about quality and service, focusing more on how to cut price.	1. Rewarding and incentives granted to suppliers must be tied with their performance 2 Buying decision must be based on overall result, not on price only.

Table 3.4 Drawbacks of the current Supplier Evaluation System

Area to Consider	Observed Problems	Consequences	Possible Solutions
Involvement of concerned or affected departments	1. It is not clear to which departments this supplier evaluation task belongs. 2. Not all departments affected or having contacts with suppliers' products/ services are involved in the assessment process.	Many people do not see the importance of this evaluation and some suspect its validity	Involve all departments concerned (purchasing, QC, R&D, etc.) through the design, planning, and implementation of the system.
Use and share of Information	1. The assessment result is not used in other decisions regarding buying and suppliers 2. Result is not shared to suppliers	1. People see no use of the assessment effort 2. Suppliers do not get any feedback and do not where they need to improve	1. Result from assessment must be used in other key decisions. 2. Results of assessment should be fed back to suppliers on a regular basis, allowing them to know where they perform well and poorly.

Table 3.4 Drawbacks of the current Supplier Evaluation System (Continued)