

CHAPTER I

INTRODUCTION



1.1 Introduction to the business

In common, processing time is one of important factors to effectively serve the customer demands. Especially, in machine spare part industry which needs to process varieties of products according to customer orders, processing time and quality are normally the most significant parameters for most customers to decide on purchasing or doing business with the company. Therefore, competent manufacturer who are capable to launch product quicker and more qualified can survive in high competitive market. Determining and properly setting standard processing time for each product is quite necessary for the manufacturer to make the most precise processing plan. However, since the way to set the standard time obviously requires numerous data and information of product, the system that can efficiently control and manage these data become one of the most important issues for any firms.

This thesis will put emphasis on establishment and implementation of the Product Data Management system (PDM). PDM can be defined as the electronics handling and control of product information throughout the whole product life cycles across system and organization boundaries by means of vaulting, work flow and product structures. It was designed for storing, controlling, and managing documents and other information about products.

Generally PDM system needs a basic set of functions which are an electronic vault and sets of user and utility function. The electronic vault is a storage area for all kinds of product information. The main duty of PDM vault is to keep the principle data in 'vault' where all changes are monitored, recorded, and controlled all the time. The user functions provide the way into the system's ability to store, retrieve and manage data. They are vault management, workflow, process and procedures management, product structure management, part classification and group technology, and project and programmed management. The utility function connects with the computer environment, and insulates the user from it.

However, this thesis will put emphasis on two main basic functions, which are an electronic vault and set of user functions. According to the user functions, the classification of product is one of the most important parts. While firms try to manage product data, they have to classify their products first. Since the product part number used to be the key to access any information in the database, classification and coding system then becomes one important theory used in this thesis. The classification and coding system means the system used for classifying anything by using the logical method. It allows user to search items quickly via the available information of them.

Consequently, this thesis will be proposed in two principle phases. First, it concerns the development of the classification coding method. Second, it deals with the establishment of company database used for collecting product data and determining the standard time.

1.2 Background of the business

The case company is a small manufacturing company. It produces and also designs machine and spares parts. The principle products of the company are spare parts of all machines involved in can manufacturing industry such as punch cutter, die cutter, blank cut edge, scroll shears set, seaming roll, seaming chuck, strip feeder and stacker machine. The products can be classified into three main types: Spare Part, Assembled Spare Part, and Machine. The Spare part is a product that does not need any assembly such as punch cutter. The Assembled Spare Part relates to products consisted of more than two parts.

Quality Control is monitored throughout the entire production process in order to meet standard requirements set by the original design and prototype. The company has integrated the use of modern computer, CAD/CAM in its designing and has incorporated CAM System directly with the machine's CNC. Since the company produce small batches of a wide variety of products, the production process of the company can be classified as the process-focused, or Job shop.



Figure 1.1: Products of the company

The target customers of the company are can manufacture industries located in Bangkok, Samutsakorn, and Samutprakan province. However, the company currently has had major customer who can provide order habitually already. At present, the company is operated by 18 staffs working at five different departments, and all of them are controlled by a director. The director is the only one who can make any decisions and contact with customers.

1.3 Statement of problems

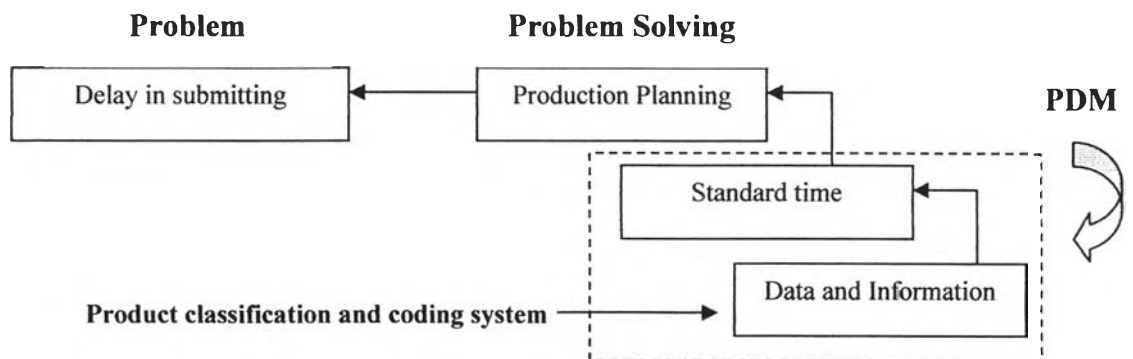


Figure 1.2: Problem and Problem Solving

Since it was found, the company has been developing and increasing the capacity of both machines and employees in order to support the increase of customer's orders. Nowadays it is facing with problems occurred in different function such as management, finance, marketing, production, and human resource. However, this thesis will only focus on solving problems of production function.

At present, the most influential problem of the production department is delay in submitting product to the customers almost 100% of the due date time. Therefore, it is necessary to find the causes of this delay urgently. To find the causes, the company should have production planning first. Since the production planning can show the schedule of production, which brings the company to the proper due date time. Anyway, to create the production planning, the standard time or lead time of each product is obviously required, and in order to find the standard time, the company has to collect all data and information of product first. Presently, the data and information of product are kept in documents, which is not durable and easy to get damage. Moreover, it is very time consuming when individual wants to find historical information of a product. In addition, when there are some changes in size of a product correlated to others, it is difficult to know what product they are. Consequently, the first thing that the company should do is to establish the system that allows it to manage and control all data efficiently.

1.4 Objectives of the study

The objective is to develop a computer database system and to establish classification and coding system that suitable for the company.

1.5 Scope of the study

This thesis will focus on establishing a computer database system including the classification coding system. It will not concern the utility functions since the implementation of utility function requires high investment in IT objects such as LAN system and computer's hardware and software.

1.6 Expected results

1. The company should have more efficient data management system.
2. Product having similar standard time should be classified and coded together.
3. The system will be used easily and provides convenience to persons who use it.
4. The system has to be prepared for supporting data of new products in the future.
5. The employees understand the objective of the system and are able to use it.

1.7 Expected benefits

1. The company can reduce time to market
2. The company can managed secure data throughout product life
3. The company can use the standard time for creating the production planning control. Moreover, this system will be used to be the base system when the company wants to make production planning system.

1.8 Methodology

1. Study related literature, journal, and other application in PDM system and Database management.
2. Collect all necessary data and information of products and users
3. Design and develop computer database and classification and coding system
4. Record all data of the target product classes.
5. Implement the system into the company
6. Analyse and evaluate the results of the implementation.
7. Summarize the result of study and recommend further studies.
8. Thesis write-up and submission