



# CHAPTER I

## INTRODUCTION AND BACKGROUND OF THE STUDY

### 1.1. Introduction

Ever since after World War 2, Japanese products and culture has been revealed to other countries. Until now, many of Japanese products are well known around the world including vehicles, electronics, technologies, foods, and etc. Apart from Sushi which is the well known unique Japanese food, whoever comes to visit Japan will not forget to bring back a snack souvenir that can be kept and packed in the suitcase in order to share the taste of Japanese recipe with others who are waiting at home. Such well known souvenir is a Japanese rice cracker.

With the rapid growth of Japanese economic, the consumable resources in Japan have been more and more expensive and including labour costs. Many of Japanese manufacturing industries has chosen to rebase its manufacturing plant in other lower cost country, including Thailand, China, Taiwan, Malaysia, and others.

Rice cracker manufacturing also followed the same trend as it requires a lot of labour contribution, and major raw material is glutinous rice which cost rather high in Japan. Many Arare manufacturers have set their plants in Thailand and China where the labour cost is much lower and the glutinous rice can be locally cultivated.

With the certain major market, Japan, the Arare manufacturers have to do the best to maintain the existing market and try to expand its snack market share in other area especially the product has been introduced in many countries around the world including United States of America and Europe.

## 1.2. Rice Cracker Snack business characteristic in Thailand

With more Chinese manufactures entering the business, the rice cracker manufacturing business in Thailand has become more competition. Japanese rice cracker is the well known Japanese snack gift, and souvenir. It can be found in every store in Japan and also found in most of the Japanese stores in many countries around the world.

*“Arare (あられ, pronounced /arare/, lit. hailstones) is a type of bite-sized Japanese cracker made from glutinous rice and flavored with soy sauce. It originated in Japan and was brought to the U.S. by Japanese immigrants who came as plantation workers in the early 1900s. In Hawaii, this snack is often called Kakimochi (fried rice paste) or mochi crunch....”* Source: <http://en.wikipedia.org>

Figure 1.1: Traditional Japanese Snack Store



The studied business is Japanese Rice Cracker manufacturing business, to be referred to as XYZ Company. The XYZ produces various kinds of products made from the glutinous rice dough which will be cut to pattern then baked and seasoned as per recipe. This rice cracker product, also called ‘Arare’ in Japanese, can be made to order in various kinds of pattern, size, and seasoning depending on customer demand.

Figure 1.2: Various type of Arare product



As measured by volume production, 52% of company product exported to Japan as premium products, which is equal to 65% of company turnover, and the remaining volume of 48% has been distributed all over the world including USA, Europe, Austria, Taiwan, and Thailand in various requirement of qualities and recipes, see table 1.1.

Table 1.1: XYZ Total Sale in 2006

TOTAL SALE VALUE IN 2006			TOTAL SALE WEIGHT IN 2006		
COUNTRY	USD	%	COUNTRY	WEIGHT (KG)	%
JAPAN	6,209,060	65%	JAPAN	1,703,739	52%
U.S.A.	1,246,506	13%	NETHERLAND	825,372	25%
NETHERLAND	1,020,966	11%	U.S.A.	458,077	14%
TAIWAN	845,412	9%	TAIWAN	156,618	5%
AUSTRAL	114,767	1%	AUSTRAL	91,085	3%
U.A.E	23,592	0%	U.A.E	10,982	0%
MALAYSIA	11,582	0%	MALAYSIA	4,590	0%
HONG KONG	7,740	0%	HONG KONG	4,050	0%
<b>TOTAL VALUE</b>	<b>9,479,624</b>	<b>100%</b>	<b>TOTAL WEIGHT</b>	<b>3,254,513</b>	<b>100%</b>

Customer profiles can be separated to continuous order customer, and discrete order customer. The first type comprises mainly Japanese retailers and wholesalers who sell traditional product in Japan. Packaging characteristic can be either retail pack by company itself or wholesale pack which will be unpacked and repackaging again by customers. Since the Japanese is the originator of the product and the product is generally sold for premium gift or souvenir, Japanese



### 1.3. Problem statement

The Company has currently 1,038 products and more than 80 ingredients for seasoning. Such diversity of products creates considerable production complexity that also provides great flexibility. Current product code does not support the manufacturing understandable of the product characteristics.

While the production control, scheduling, and planning are significantly important to the effective production. The current production planning has wholly relied on few human resources who have very good knowledge on the product and supplier. The problem shows when the planners are sick, leave, or resign.

Apart from the constant demand from major Japanese customers, which already have certain production schedule, there is 30% of production capacity available which will be able to fit in other made-to-stock products. However, since making of new product require machine set up, the arrangement of made-to-stock product need to ensure to be most optimized and suit to the current production plan as much as possible in order to ensure high productivity and work efficiency.

### 1.4. Objective

To develop a production planning system that can help the planner to justify production plan that is best fit to customer orders by calculate and response available-to-promise date back to marketing department.

### 1.5. Scope of work

This thesis will study on:

- a. Generate the new product coding procedure in order to aligned with the production process and product characteristics
- b. System should be able to group product for group production and can be manipulated on the schedule in order to deliver order in time or report worst case on delay production.

