

## **Productivity Expansion in Massimo Bakery**

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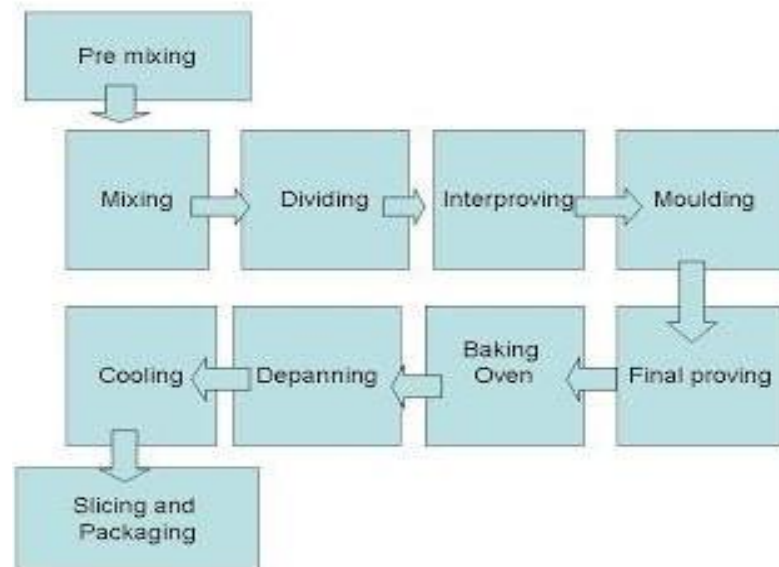
**Abstract:** *In today's competitive world, it is important to improve constantly for both manufacturing and service industries. Quantity with quality is a main characteristic which helps a company to stay in the competition. Technology has been taken leaps of development lately and this has brought an escalation in the customer demands. Bakery products become a regular food in most parts of the world and are essential commodities today. There is a high potential for business growth in selling bakery products. The case study deals with the issues faced by bakery industry and provided some recommendations to resolve the existing problems in the bakery. The main aim is to study the current productivity and capacity of the plant, analyse it to find areas of improvement and make an improvement proposal to meet the forecasted increase in demand. In the workstation, the processing time is different and the longest time consumption is identified as a bottleneck. The identified bottleneck station is analysed to reduce the processing time which increases production rate.*

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### **INTRODUCTION**

In Malaysia, food production sector plays a significant role for the economic development of the country. The industry has contributed to export earnings, foreign exchange earnings, employment creation and the empowerment of women. In recent years, the sales value of manufactured bread, cakes and other bakery products in Malaysia was approximately 1.96 billion Malaysian ringgit. To sustain the positive growth, it is necessary to ensure the proper utilization of resources. Financial growth of any industry largely depends on minimizing cost of raw material, labour cost, waste minimisation, excess work, productivity improvement and so on. By minimizing all these, it would be possible to improve the productivity at its maximum level. The production term in any process or procedure means to transform a set of inputs into a specified set of output. The production system of food products industry can be shown by the following diagram:

Flow chart for bread manufacturing process



Productivity improvement is one of the core issues towards manufacturing excellence and it is necessary to achieve good financial and operational performance. It enhances customer satisfaction and reduce time and cost to develop, produce and deliver products and service. Productivity has a positive and significant relationship to performance measurement for process utilization, process output, product costs, and work-in-process inventory levels and on-time delivery. Improvement can be in the form of elimination, correction (repair) of ineffective processes, simplifying the process, optimizing the system, reducing variation, maximizing throughput, reducing cost, improving quality or responsiveness and reducing set- up time.

Productivity is the ratio between output of wealth and the input of resources used in the process of production. Productivity measurement turns a comparison of outputs to inputs normally by calculation of a productivity index. Productivity improvement can be done by modifying ineffective processes, simplifying the method, optimizing the system, reducing variation, maximizing turnout up quality or responsiveness and reducing set-up time. Productivity can be also achieved by increasing the value-added content of products, or by decreasing the unit cost of production or decreasing the work content of the production, or line balancing of the production line or by a combination of all. Productivity improvement is the continuous improvement process of any type of activities.

## BACKGROUND OF THE COMPANY

**Company History:** In 2011, The Italian Baker Sdn Bhd, a 100%-owned subsidiary of FFM Sdn Bhd introduced Massimo, a brand known for its high quality breads baked with unmistakable Italian passion. The office of the company is situated at Jalan Perigi Nenas 6/1/KS 11, Taman Perindustrian, Pulau Indah, 42920 Pelabuhan Klang, Selangor Darul Ehsan, Malaysia. The production house is placed at Batu 15 ½ Sungai Pelong,

47000 Sungai Buloh, Selangor Darul Ehsan, Malaysia. The Massimo is renowned in the world of Italy fashion and the very name in itself denotes luxury and prestige, synergizing traditional style with modern design. Similarly, the Massimo bread is in the class of its own superior quality bread combining the tradition of the Italian human baking passion with modern days technique to ensure that it always retain that authentic fresh from the oven taste. Using high- quality flour from FFM and other quality ingredients to ensure the same consistency and quality in every loaf, Massimo breads are baked under stringent quality assurance to meet the demands of today's consumers. The name Massimo is chosen to be the brand name for the entire product with the tag line "Wholesome Goodness Maximum Satisfaction". Built upon the tradition of providing wholesome goodness to all. Today, Massimo bread is a must-have on the breakfast table of Malaysians. There are varieties of product Massimo provides to the market, among them Massimo Sandwich Loaf, Massimo Sandwich Loaf with Wheat Germ, Massimo Fine Wholemeal Loaf, Massimo 100% Whole Wheat Loaf, Massimo Cream Rolls, Massimo Chiffon and so on.

### **CURRENT OPERATION**

Mr. Badrul Hisam, the CEO of the company, observes the operation of bread processing facility. The raw materials like flour, grains, sugar and so on, are purchased from local sources along with importation, processed at the facility, and sold to customers for distribution. The plant manager, Mr. Tan Hainsen is expecting a plant modernization to upgrade the technology in the company. The old machines consume a lot of energy that it makes impact on the production and increase the cost of production. While the plant performs well enough now, modernizing equipment would allow the plant to increase capacity per hour, which is particularly advantageous because the factory has enough demand to cover the additional capacity. Currently, the company operates 5 days a week, in two shifts of 50 workers per shift. The workers are paid \$12 per hour. Adding a third shift is not possible because the plant needs to be cleaned during this time.

### **PROBLEM**

The company is contemplating a plant modernization to upgrade existing equipment, which should increase the plant's output while lowering energy costs. This is because energy is one of the most prime factors in production line. According to the World Energy Markets Observatory (WEMO) report, Malaysia's energy usage is increasing day by day and the rate 4.8% per year. The industry consultants noted that energy for transportation is also rising in coming next 25 years with an annual expansion rate of 5.3%. The 19th edition WEMO indicated the country's final energy requirements will triple by the year 2030, judging by the current consumption levels. The power generation industry in Malaysia says that they have to spend more than RM15bil per annum to meet the demand for electricity and this amount could spike this year due to high prices of fuel and coal. For this reason, they extended the price of per unit energy cost.

The baked goods market in Malaysia is a dynamic and fast moving industry. It is not uncommon to see a number of bakeries closing their doors while a few more mushroom in an area. The bakery suppliers can include conventional stand-alone bakeries,

commercial bakeries producing baked goods for retail outlets, bakery counters, cafés and stalls in shopping malls, baked goods and pastry wholesalers who supply both mixes and completed goods and home-based bakers providing artisanal and handmade breads and cakes. A report notes that the Malaysian market has seen positive growth of baked goods as more products are consumed at meal times in place of rice and noodles. According to Euro monitor Market report on packaged food, the baked goods market has been growing on average about 3% per annum. Nonetheless, the baked goods market has become more competitive over the years. New bakery chains have entered the market and new trends such as bread with healthy ingredients have helped other businesses flourish. Additionally, the cost of production has increased as prices of raw materials such as sugar, salt and wheat flour have gone up in recent years. The cost of research and development has also risen. The Massimo managing director has seen his fair share of bakery suppliers closing down in the last 20 years. He says that market forces have moved so fast that many of their suppliers couldn't react. The challenge for most businesses, he says, is to offer the right product mix and productivity.

Another issue faced by the industry is the shortage of labour. Most of the workers are of the older generation or foreign. In recent days foreign workers are facing immigration problem. So, they are not eager to work in Malaysia for longer time. This type of incident makes problem for small industry like Massimo. Because they have to appoint and train the new worker again, it is costly and time consuming. On the other hand, small industries are unable to entice younger workers with hard work and low salary. There has been an increase in use of technology among manufacturers but balance between automating and maintaining manual labour to enable the company to be flexible in its production. However, if anyone can produce the right and good products, can readily find a consistent consumer base that is willing to spend the money in exchange for taste, indulgence and experience.

In Massimo using the current equipment, around 4000 breads can be processed each hour, while the new plant would be able to process 6000 breads per hour. The Massimo wants to use updated equipment that was made by the same manufacturer of the existing equipment. The production personnel of the company feel that it is not impossible for them to learn to use the new equipment quickly to add new production capacity in the company. Though the machines and equipment are new and the workers are capable to use the equipment, the costs to train workers are assumed to be negligible. The production manager, Bjorn Pedersen, is doubtful about the benefit of the plant modernization. He argues that the older equipment is already paid on the contrary they have to spend \$20,000 per week for the new equipment.

This type of cost includes not only principal and interest but also installation of the equipment. The controller, Salehin Ramlee cares that all of the decisions related to costs and expenditure should be included in the analysis and discussion as well as the different energy consumption of the new equipment must also be accounted for in the decision. By using the old one, energy costs are presently \$10 per unit, and the company has to face 2,000 units of energy per week for the existing plant. Whereas they start to use the new machines with the modernization of the plant, the consumption of energy would be reduced by 50% of the previous figure.

### **CONCLUSIONS AND RECOMMENDATION**

Productivity improvement is an important issue in food products industry. The profit earning of food products industry largely depends on productivity improvement. This study shows the way of finding gap of production process and operations of old and new era. By implementing work study and method study and established new effective process for particular operation, the company can increase productivity. Especially this study shows the improvement of productivity in new and old line of food products manufacturing industry. The line balancing is the key point to increase productivity to particular products. For the sake of limitation we could not apply this technique to all products. By reducing work content to improve productivity, change manufacturing concept could be used for our work. This study shows the productivity difference between old and new machines.

### **DISCUSSION QUESTIONS**

1. What is the productivity of the manufacturing process, with the equipment presently in use?
2. What would be the productivity of the plant if the new equipment were bought and used?
3. What would be the amount of supplementary expenditure on equipment that would make productivity of the two structures equal?
4. What might occur if energy costs increase in the future?