SUPERVISOR'S AND PANEL APPROVAL

'I hereby acknowledge that i have read this works and in my opinion this works is sufficient in terms of scope and quality for the submission and be awarded the Bachelor Degree of Technology Management (Innovation Technology) with Honors'

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THE FACTORS INFLUENCING THE IMPLEMENTATION OF LEAN MANUFACTURING: THE CASE OF ORIENTAL FOOD INDUSTRIES MELAKA, MALAYSIA

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This Report Submitted In Partial Fulfillment of The Requirements For The Award Bachelor of Technology Management (Innovation Technology) With Honors

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DECLARATION

"I hereby declare that this thesis entitle" Factors Influencing the Implementation of Lean Manufacturing: The Case of Oriental Food Industries Melaka, Malaysia" is my own work except for the quotations summaries that have been duly acknowledge"

Signature :

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DEDICATION

I dedicate this thesis to my beloved parent who always supports me during my time doing this research. They have given me financial and moral support to motivate me to finish this research. Other than that, I would like to offer my gratitude to my supervisor and panel which have given me great advice and insight in what I have to do to complete this research. Furthermore, this last piece of gratitude has to go to my fellow friends who have been through thick and thin in order for this research to be completed..

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ABSTRACT

Implementation of lean manufacturing is becoming a necessity for the Oriental Food Industries Sdn Bhd, as it is one of the rapidly growing company in Malaysia. The increase in demands and the competitiveness of the industry have caused the meeting the demands while still being competitive becoming more and more challenging. This study aims to identify the factors that influence the Oriental Food Industries Sdn Bhd in Melaka, Malaysia to implement lean manufacturing. Furthermore, this study includes limitations of lean manufacturing. The data collected via a series of interview were analysed using qualitative method. In conclusion, the implementation of lean manufacturing solved the problems of increasing waste product that arise due to conventional method of manufacturing which is ineffective and inefficient. Besides that, implementations of lean manufacturing have been proven to cut the cost of production which in return increases the profit of the company.

Keywords: Lean Manufacturing, Snack Industry

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ABSTRAK

Pelaksanaan pembuatan lean menjadi satu keperluan bagi Oriental Food Industries Sdn Bhd, kerana ia adalah salah satu syarikat yang berkembang pesat di Malaysia. Peningkatan permintaan dan daya saing dalam industri telah menyebabkan memenuhi permintaan sementara masih berdaya saing menjadi semakin mencabar. Kajian ini bertujuan untuk mengenal pasti faktor-faktor yang mempengaruhi Oriental Food Industries Sdn Bhd di Melaka, Malaysia untuk melaksanakan pembuatan lean kajian ini merangkumi batasan pembuatan lean. Data yang dikumpul melalui satu siri temu bual dianalisis secara kualitatif. Kesimpulannya, pelaksanaan pembuatan lean dapat menyelesaikan masalah peningkatan bahan buangan yang timbul kerana kaedah konvensional pembuatan yang tidak berkesan dan tidak cekap. Selain itu, pelaksanaan pembuatan lean telah terbukti dapat mengurangkan kos pengeluaran yang mana hasilnya boleh meningkatkan keuntungan syarikat.

Kata kunci: Pembuatan Lean, Industri makanan ringan

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LIST OF ABBREVIATIONS AND SYMBOLS

UTeM -	Universiti Teknikal Malaysia Melaka
DR-	Doctor
Sdn-	Sendirian
Bhd-	Berhad
RM-	Malaysian Ringgit
USD-	United States Dollar
FAMA-	Federal Agricultural Marketing Authority
B-	Billion
SME-	Small Medium Enterprise
QA-	Quality Assurance

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CHAPTER 1

INTRODUCTION

1.1 Background of the study

Melaka occupies a total land area of 1650 square miles and in southern region of Malaysia (Melaka State Government, 2016). It has a population of approximately 931,210 and population density of 493 per km2 (Department of Statistic, 2016). Melaka is well-known as an industrial city, the industry that this research focuses on is the snack industry. Snack industry in Malaysia is rapidly growing, in 2011 it is reported that Malaysia's traditional snack industry is growing rapidly with the sales figure hitting RM200 million (66 Million USD) for the year 2010. According to the growth data for the country's snack industry released by Federal Agricultural Marketing Authority (FAMA), the chips represent the biggest market share of the snack industry with their sales figure amounting to RM102.1 million (34 Million USD). (Potatopro.com, 2011)

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According to a research conducted by (Directions, 2013)., Malaysia is one of the five leading countries in ASEAN in snack industry accounting for more than 85% of the population of the region. Together, these five countries represent a 3.5B USD snack market growing at 11% a year in 2013. Snack industry growth in Malaysia is more influence by modern trade penetration as compare to urbanization with regards to per-capital consumption levels. This shows signs of a maturing market in terms of both growth and per-capita consumption.

Usually, the manufacturers use a traditional method to produce the product. According to (Reeb & Leavengood, 2010) traditional manufacturing separate different functional operations. Value-added manufacturing facilities, for example, typically arrange engineering, customer service, scheduling, and marketing as separate departments. Processing steps are separated in sequential operations such as rough-cut milling, surfacing (planing/sanding), cut-up operations, finishing operations, and others. In some companies, these various operations take place in different buildings, requiring materials to be transported over long distances. The final product becomes part of the finished inventory, which takes up space and may need to be moved several times before eventually being loaded onto trucks or railcars and shipped to customers. This type of manufacturing is inefficient as it produces a lot of waste and increase the production cost.

Lean manufacturing also known as Toyota Production System, the essence of lean manufacturing is to relentlessly work to eliminate waste. Lean manufacturing was developed in 1930 after the Second World War by Tachii Ohno, Kiichiro Toyoda and others at Toyota. Lean manufacturing is considered as a manufacturing philosophy which is adopted by companies to ensure that the costs involved in production are reduced and unnecessary wastes are eliminated from the production mechanism (Alhuraish, Robledo, & Kobi, 2014). The lean in Lean Manufacturing eliminates all waste, waste is defined as any activity that creates no value and value is defined by the customer(Reeb & Leavengood, 2010).

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The seven categories of waste stated by (Ohno, 1988)are overproduction which is defined as producing product or results that don‘t give value to the customer. Waiting is the waste of time when no value is being added to the product or service. Transportation is known as unnecessary moving or handling which causes delays in moving material. The fourth categories of waste is inventory which can be identified as unnecessary stored materials, work-in-process, finished products. Motion is the movement of equipment, inventory, or people that adds no value which is the fifth categories of waste. Besides that, over-processing or unnecessary processing and procedures that add no value is considered as waste. The last type of waste is defects or producing defective products.

Lean Manufacturing is a system which has tools that is use to achieve the objective of lean. Kaizen also known as continuous improvement is describe as do not stop striving for perfection after initially completing the steps that resulted in reduced effort, time, space, cost, mistakes, and defects while becoming better at offering products and services that the customer wants.(Reeb & Leavengood, 2010). JIT is tool that is use to reduce the waste of inventory. The simplest tool available in lean manufacturing is the 5 S which are sort, store, shine, standardize and sustain. 5s are used for workplace organization so that the process can proceed effectively and efficiently.

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1.2 Problem Statement

The Oriental Food Industries Sdn Bhd in Melaka is continuously growing at a rapid rate. This rapid rate of growth is due to the increase of population in Melaka and the competitiveness in the industry. Using the traditional method of manufacturing is inefficient as it produce a lot of waste. Although the goods provided is sufficient to sustain the company, the waste that come with the increase in production is weighing down on the companies‘ ability to increase their profit and because of this some companies‘ have been put out of business due to the inability to cope with the cost that come with the production process. As we know, the lean manufacturing has been in the manufacturing industry for a long time but due to the obstacle only found in snack industry has caused the snack industry to suffer some lost due to the inability to implement the lean manufacturing. Examples of those barriers are the nature of the plant, the nature of the product and the nature of process(Dora, Kumar, & Gellynck, 2015).

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1.3 Research Question

Based on the problem statement, researcher creates three research questions regarding the factors influencing the implementation of lean manufacturing in Oriental Food Industries Sdn Bhd in Melaka, Malaysia. These research questions are the keys activities for this research progress.

1. What are the factors required in order to successfully implement lean manufacturing in Oriental Food Industries Sdn Bhd in Melaka, Malaysia?

2. What are the advantages of lean manufacturing in Oriental Food Industries Sdn Bhd in Melaka, Malaysia?

3. What are the limitations of lean manufacturing in Oriental Food Industries Sdn Bhd in Melaka, Malaysia?

1.3 Research Objective

The criteria of the research objectives are based on the research question constructed. So, the research objectives proposed to answer the research question in this study.

1. To identify the factors to successfully implement lean manufacturing in Oriental Food Industries Sdn Bhd in Melaka, Malaysia

2. To investigate the advantage that lean manufacturing brings to the Oriental Food Industries Sdn Bhd in Melaka, Malaysia

3. To understand the limitations lean manufacturing in Oriental Food Industries Sdn Bhd in Melaka, Malaysia

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1.4 Scope of the study

The scope of this study is the Oriental Food Industries Sdn Bhd which is located in Melaka, Malaysia. Information and data required for this study will be obtained from the selected company that are interviewed by the researcher and other responsible parties in Malaysia. The reason this study is conducted in the Oriental Food Industries Sdn Bhd is to gain insight on the current method used by the company and to inform other company about lean manufacturing.

1.5 Limitations of the study

There are a number of constraints on this study which are time, cost and location. The limitation of time is that the researcher has a finite amount of time and is unable to fully research the topic at hand. For the limitation of cost, it is very costly for the researcher to conduct this study fully and due to the financial of the researcher it is not possible to fully understand it. The limitation of location due to the research being located in the snack industry in Melaka it is not possible to provide a full global view on the subject research as there will be geographical differences and also culture differences.

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1.6 Key assumptions of the study

The researcher assumes that the respondent for this study will answer the question ask during the interview honestly and without bias. Furthermore, the researcher assumes that the respondent chosen will provide excellent cooperation during the interview. The last assumption made is that this research will provide an insight view of the industry and what lean manufacturing can provide to the snack industry in Malaysia. In addition, it is assuming that the information and data obtained are accurate and standardized.

1.7 Significance of the study

This study aims to unravel the factors which have promote the use of lean manufacturing practices in the Oriental Food Industries Sdn Bhd and the factors which have cause some firms to have higher success rate than other. Furthermore, this study aims to help other companies that wants to implement lean manufacturing but are at lost as to what to focus on to successfully implement lean manufacturing. Moreover, this study provides the advantages that lean manufacturing bring to the company that practices it and also the factors limiting its full implementation.

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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In this section, previous research is gather and studied to ensure its viability to be use in this research theoretical framework. The model framework use will encompass theories that have been researched previously. Lean manufacturing have been for quite a while and there are many research conducted to study its effectiveness however little is known about the implementation of lean manufacturing in snack industry. To further increase the knowledge on lean manufacturing and its implementation in an industry which have many obstacles is the reason for this research. The main purpose of the use of lean manufacturing is to increase productivity, improve product quality and manufacturing cycle time, reduce inventory, reduce lead time and eliminate manufacturing waste. Lean system attempt to eliminate waste through continuous improvement (Kaizen) processes across the value chain within the organization (Azuan, Syed Ahmad, 2013). The figure below is an example of what lean manufacturing is about. The diagram shows how the theories are related to one another in this study. The purpose of this research is to study the theories related.

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Figure 1: House of lean

Source: (Begam, Swamynathan, & Sikkizhar, 2013)

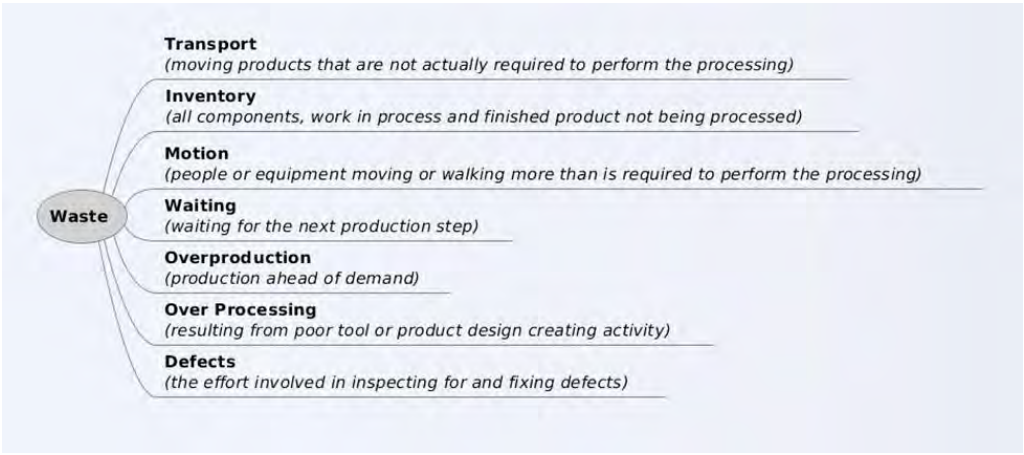

Figure 2: 7 Type of Waste

Source: (Ohno, 1988)

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