INVENTORY PLANNING AND CONTROL IN DATARAN SETAR SDN. BHD.

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Report submitted in partial fulfillment of the requirements
for the award of the degree of
Bachelor of Engineering in Manufacturing Engineering

Faculty of Manufacturing Engineering

UNIVERSITI MALAYSIA PAHANG

June 2016

SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis and in my opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Bachelor of Engineering in Manufacturing.

Signature   :

Name of supervisor   :

Position   :

Date   :

STUDENT'S DECLARATION

I hereby declare that the work in this thesis is my own except for quotation and summaries which have been duly acknowledged. The thesis has not been accepted for any degree and is not concurrently submitted for award of other degree.

Signature   :

Name   :

ID Number   :

Date   :

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LIST OF ABBREVIATIONS

A   Availability

BOM   Bill of Materials

C   Cycle of the Order

EOQ   Economic Order Quantity

ERP   Enterprise Resource Planning

ES   Exponential Smoothing

GS   Gross requirements

MAD   Mean Absolute Deviation

MAPE   Mean Absolute Percentage Error

MPS   Material Production Schedule

MRP   Manufacturing Resource Planning

OC   Order Receipts

OL   Order Releases

R   Reorder point

RMSE   Root Mean Square Error

RSFE   Running Sum of Forecast Error

SME   Small Medium Enterprise

SS   Safety stock

TMC   Toyota Motor Corporation

TS   Tracking Signal

WMA   Weighted Moving Average

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ABSTRACT

Inventory management is the most important business process for every production company as it relates to purchases, logistic, sale and also services. It is related to control the stock of raw materials for the company's production. The main objectives of this thesis are to calculate sales data from the company, to optimize the quantity of raw materials and to analyze the best alternative solution to the company's problem. By using production planning and control method, the company's problem was solved. Step by step of production planning and control method such as forecasting, aggregate planning, master production schedule, materials requirement planning, bill of materials and order policy are to determine when and how many of each items should be order.

ABSTRAK

Pengurusan inventori adalah proses perniagaan yang paling penting bagi setiap syarikat produksi kerana ia berkaitan dengan pembelian, logistik, penjualan dan juga perkhidmatan. Ia adalah berkaitan dengan mengawal stok bahan mentah untuk pengeluaran syarikat. Objektif utama laporan ini adalah untuk mengira data jualan dari syarikat itu, untuk mengoptimumkan kuantiti bahan mentah dan untuk menganalisis penyelesaian alternatif terbaik untuk masalah syarikat. Dengan menggunakan perancangan pengeluaran dan kaedah kawalan, masalah syarikat itu dapat diselesaikan. Langkah demi langkah perancangan pengeluaran dan kaedah kawalan seperti peramalan, perancangan agregat, jadual pengeluaran utama, bahan perancangan keperluan, bil bahan, dan polisi order untuk menentukan bila dan berapa perlu diorder untuk setiap unit item.

CHAPTER 1

INTRODUCTION

1.1   Background

Dataran Setar Sdn. Bhd. is basically doing a sewing fabrications service for company, individual person and many more. Their main distribution center is located in Kuala Lumpur and having a branch at Pekan. They are sewing all types of fabrics into variety of clothes, bed sheets, pillow case, uniforms and many others. Their orders are increasingly by months and Dataran Setar is putting more effort on their inventory system to control the flow of goods and optimize the inventory cost.

The distribution of materials and goods are also essential for a company´s development and without the capability to transport, deliver and store products at the right time and place, the development will affect and gradually stop. More and more companies realize today the importance of inventory management, and that an effective inventory control could be a competitive advantage.

Inventory planning and control is to hold the inventory into desired level. The desired level are keeps changing based on customer demand and supply of goods. Supply of goods also includes raw materials, work in progress, finished goods, packaging, components consumable products and many more (carson, 1958).

The functions of inventory planning and control are same as inventory management. Company usually very consider about this inventory because it leads to their expenses in business. Inventory planning and control also include forecasting to determine the inventory that should have in the hand to meet customer demand. It is the most important process during the operation of a manufacturing company to purchase, sales and logistic activity.

1.2   Problem Statement

The problem of Dataran Setar Sdn. Bhd. is the safety stocks are not ready when it comes to customer orders. They should have their own stock so that when customers want to orders, they do not have to wait for the new stock to deliver to the store. If this not happen, they could increase their sales annually and gain profit gradually.

Therefore, we intense to upgrade their inventory level by applying some methods and tools to overcome their problem.

1.3   Objective

The objective of this thesis are to calculate data from the company, to optimize the raw quantity of the materials and to analyze the best alternative solution to the company's problem. Thus, we can analyze the inventory level economically.

1.4   Limitations

The scope of the thesis is to covers inventory planning and control at sewing fabrications service company. This research only focused on the inventory management, planning and control at the fabric store. The process at the production line is not considered and only calculate the number of products, not the colors of every fabric. Only three types of clothes are considering in this thesis which are corporate shirt, uniform operator and uniform driver because they are the main product of the company.

CHAPTER 2

LITERITURE REVIEW

2.1 Introduction

In this chapter we are going to discuss the literatures about inventory management and control. As we can see nowadays, every business in this world is trying to achieve a balance in inventory including what is needed by company and customers demand by considering the reduction of cost as a main factor. By considering this problem, it is called as inventory management or inventory control. Overviews of the sewing fabrication service are inventory management and control, Economic Order Quantity (EOQ), forecasting, Wagner-Whitin algorithm and many others methods and systems.

2.2 Inventory Planning and Control

2.2.1 Definition

Inventory is a stock of any items used in an organization (Jacobs & Chase, 2013). Inventory planning and control is the process to optimize the quantity and timing of inventory. Jacobs and Chase (2013) says that it is the process of decisive the optimal quantity and timing of inventory for the purpose of supporting it with sales and production capacity. Inventory planning has a direct influence a company's cash flow and profit margins especially for smaller business that rely upon a quick income of goods or materials.

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