IMPROVEMENT OF INVENTORY STORAGE LAYOUT

QHALEILA BINTI SALIM

(2012226968)

A thesis submitted in partial fulfillment of the requirements for the award of
Bachelor of Engineering (Hons) Mechanical

Faculty of Mechanical Engineering
Universiti Teknologi Mara (UiTM)

MARCH 2015

"I declared that this thesis is the result of my own work except for the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any Degree and is not concurrently submitted in candidature of any Degree"

Signed: _____

Date: July 9, 2015

Qhaleila Binti Salim

2012226968

ACKNOWLEDGEMENT

First and foremost, Alhamdulillah, praise be to Allah SWT for giving me health, knowledge and strength to complete this project.

I am grateful to have such an understanding supervisor, Dr Azianti, whose kindness, superior level of tolerances and generous guidance made it possible for me to work on a topic that was of great interest to me hence the reason I chose the title in the beginning. It was a great pleasure having her as a supervisor.

I am also hugely thankful to Ms Shaheenaz Adam, my former supervisor in Solo Labeler (M) Sdn. Bhd for finding time to reply to my questions, for providing me with materials and in-depth knowledge on this topic. I am extremely grateful for her assistance and suggestions throughout my project.

To my family, I would like to dedicate my gratitude for always giving me words of advice and never ending support. To my friends, thank you – especially to my group who has been nothing but helpful throughout the semester.

ABSTRACT

Solo Labeller (M) Technology Sdn. Bhd. (SLMSB) is a small, independent manufacturing company that produces disproportionately high number of parts in a very limited space of stock area. As such, SLMSB has faced significant challenges in organizing their finished parts and WIP efficiently in meeting the growing demands of machine orders. One of the main problems they encountered was too much time wasted for traveling and searching for the correct parts to be retrieved. This indirectly has increased the inventory and production costs due to the delayed machine delivery orders.

As part of the this study, the stock area was investigated, and some improvements have been proposed using visual representation which depicted the critical racks, critical paths and waste occurred in term of time and distance. The visualizations helped to collect consensus as to the main area of inefficiency and to determine the appropriate layout and rack reorganization in the department. The proposed improved layout was based on grouped parts by their sub-assemblies and pooled together high frequency picked items nearer to the machine assembly area with easy-to-reach shelves locations. The implementation of the improved layout has resulted in approximately 15 percent reduction of travel distance, 34 percent reduction of walking time and 26 percent reduction of searching time.

Table of Contents