CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The industrial engineering function highlights working with people to do things better, faster, safer, and help the company save money and stay competitive. Engineer figure out how to do things better and engineer processes and systems that improve quality and productivity. Industrial engineers make significant contributions to manufacturing companies by saving money while, at the same time, making the workplace better for fellow workers.

One of the important industrial engineering activities is to analyze the job or workplace. This is to be used for quality and productivity improvement specially the workers activity, working space, materials, machines, jigs and fixtures, tools and other equipment in the production department.

In this highly competitive world, the desire and expectation for high-quality and reliable goods are growing on a daily basis. Consumers now have access to products of higher design, quality and functionality at lower prices than were previously possible. Productivity becomes the dominant issues in the market place where customers make their buying decisions based on product quality; sometimes they can even pay more for what they consider as high quality product.

Productivity improvement is one of the core strategies towards manufacturing excellence and it also 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 processing, simplifying the process, optimizing the system, reducing variation, maximizing throughput, reducing cost, improving quality or responsiveness and reducing set-up time.

1.2 BACKGROUND OF PROJECT

This project describes a model which has been developed to direct and generate productivity improvement in a group of manufacturing companies. The companies are of all sizes including Small and Medium Enterprises (SMEs) and form a cross-section of industries and abilities with regard to manufacturing. There is a wide range of manufacturing efficiency improvement methods available to the companies, such as Just in Time (JIT), or a range of lean manufacturing tools. The selection of appropriate tools for manufacturing improvement, together with their applicability, incorporation and acceptance within operations is a major problem for many companies.

1.3 PROBLEM STATEMENTS

Nowadays, many company want improving their output and productivity to achieve their yearly target by eliminating some causes and production time that affect profit for company. In electronic manufacturing company, production floor layout involves selection and arrangement of equipment such as machines used to manufacture products. Today, there are many methods exist to design, analyze and redesign the production floor layout to improve productivity of a production line.

WITNESS simulation used to assist layout generation and simulate whether the proposed new layout is efficiency and possible to achieve goal of company or not (Roslin, 2008). By using simulation software, production line evaluation can be performed in a short time because can model the actual problems in the simulation software rather than rearranging the actual machine first before evaluation.
Affected from this problem, the management must to reduce customers complain. The quality product must be achieved. Then, input and demand also must be maintained and stable.

1.4 OBJECTIVES

The objectives of this study are to:

i. To identify problems in existing production floor layout.

ii. To design and improve manufacturing production floor layout by using WITNESS simulation software and by observation during the collection data of cycle time.

iii. To measure manufacturing performance such as production quantity, lead time, bottle neck and by using cost effectiveness analysis.

1.5 SCOPES

i. Use Education tools with WITNESS Simulation software.

ii. Selected manufacturing industries for collecting the data from HIROSE ELECTRIC (M) SDN. BHD at assembly line department by FX15 series model.

iii. Increasing productivity and reducing cost compare the preview company targeted.

1.6 IMPORTANCE OF THE PROJECT

To practice the knowledge and skill of the student that has gathered before in solving problem using academic research. This project also important to train and increase the student capability to get know, research, data gathering, analysis making and then solve a problem by research or scientific research.