

INDUSTRIAL, MANUFACTURING, & SYSTEMS ENGINEERING

CAPSTONE PROJECT /INTERNSHIP SUMMARY



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Type of Capstone (research, teaching, practical application): Practical Application

Capstone Project Title: Lean Project Efficiency, Productivity & Optimization of Floor Usage

Year and semester: Fall, 2015



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INTRODUCTION

Infinitio Si Logistics is a business that provides international logistics, specializing in The North American Free Trade Agreement (NAFTA) supply management. At Infinito's facility, the company handles many different kind of products such as food, household, and accessory items among many others. In this project, the 5S methodology was implemented in order to identify the main problems and its root causes within the facility that impeded Infinito to have the items ready to meet its cutomers's demands. Production of completed labels would never meet their daily demand, all due to the fact that efficiency was below 40%.

The scope of the project of our project was to analyze the flow of product items within the facility. In doing so the following problems were identified. The warehouse had no specific departments; therefore

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no realistic type of layout existed. This was a major issue, since all of the merchandise was lost and mixed in with shipped products, received products and finished labeled products. No work standardization was ever applied, not even the thought of introducing it to permanent employees or those who were brought in by an agency. The warehouse has an area of 35 x 28 ft. sq. filled with clutter that consists of unnecessary items. We relied on 5S to eliminate waste from a poorly disorganized facility.

PROJECT OUTCOMES

Throughout the project several emphasis areas were targeted, which are composed of methods and industrial ergonomics, industrial layout, safety engineering, production and inventory control, systems engineering, simulation, and statistic quality control/reliability.

We went about our project by following the 5S step methodology which the steps are sort, straighten, shine, standardize and sustain. The first 3 steps were very important and were the ones in which we implemented the industrial engineering methods previously mentioned. Step number two, straighten, is where we recognized a facility layout was needed which helped determine the flow of the facility and helped develop a physical arrangement of machines and specific stations. This was vital in our project which helped us reach on of our main objectives which was to increase the velocity of products through the system.

Furthermore, the comparison of the before and after was extremely noticeable and beneficial towards the company. Handling material was no longer an issue, visibility of departments was finally established, and the “U” process work flow was working accurately.

Efficiency was also another negative factor within the company since it never surpassed 40% due to the fact that there was no utilization of any sort of methodology. The methodology that was decided on to be implemented was to calculate the minimum number of workstations in order to obtain the idle time of all tasks and calculate the efficiency of the product labeling. One of the objectives was to increase efficiency up to 60%, in which all cases it ended up being higher than the target. Verification of the process needed to be tested at the actual production line at Infinito. The results from the production line portrayed a decrease in the task times and an increase in the overall efficiency. The methodology was a success in the production line.

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INDUSTRIAL ENGINEERING PROGRAM ASSESSMENT

Overall it is a beautiful experience to utilize tools used in school, but on actual situations rather than work problems. One will encounter that it does differ plenty, and it will make the student have an idea of what to expect after graduation and working within a similar company. Experience makes one grow as a person, even though at times it might seem challenging it is best to become prepared.