

# INDUSTRIAL, MANUFACTURING, & SYSTEMS ENGINEERING

## CAPSTONE PROJECT /INTERNSHIP SUMMARY



**Your Name:** Sandra Minjares, Daniel Gil, Jimena Porras

**Type of Capstone (research, teaching, practical application):** Capstone

**Capstone Project Title:** Lead Time Reduction and Layout Analysis in CareFusion (BD)

**Year and semester:** Spring, 2016



### INTRODUCTION

The project consisted of investigating the company's opportunities with the 3mL applicators production assembly line, and the layout analysis of the same production area for the preparation of arrival of two new automatic machines.

An analysis of the 3mL production line was made to show the potential improvements that could be done in order to decrease the lead time when producing new production lots, and an analysis of the current layout with the preparation and set-up for the arrival of 2 new automatic machines. The focus of the capstone was in local level in El Paso, however, the impact of such project would be at international level, because the company is now owned by a global corporation that has customers all over the world, and such customers can be of the local company. So the company is now prepared for these orders.

The team had specific goals and outcomes to be of reducing by 5% or more the assembly line lead time. Also, errors and dead time to be reduced by 50%.

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The purpose of the project was to find the potential areas where an improvement could be done in the 3mL production area, specifically with the automatic machines; as well to the analysis of layout in the same area in order to accommodate two new machines that soon will arrive to the company. This, to accomplish our goals of reducing the lead time.

To take this project was relevant as the team could help with the preparation for future scenarios where new customers that require higher quantities of product could be sufficed successfully, thus giving the local facility, the possible manufacturing of those quantities without a problem.

To organize the project, the team had to divide the entire project in phases all based on the DMAIC methodology, and with the help of time organizational charts, the team could work successfully with all the stages, in time, efficiently, and with results.

### PROJECT OUTCOMES

The outcomes of the project were, an Increase in productivity and efficiency in the 3mL production line, a decrease in Lead Time, and maintain outputs, within acceptable ranges for the arrival of new automatic machines.

The results included: head count reduction, lead time reduction, dead time reduction, increase in output, optimization of space in the layout for the new machines, and economical benefits for the company.

Positive feedback from industrial partner and the associates from the 3mL production line were achieved during the project since the results were accomplished as expected.

According with the initial proposal our goals were achieved.

Some of the specific benefits for the client were: cost reduction per piece, head count reduction, and optimization of the layout.

The biggest contributions of the project were all the benefits previously mentioned, but in focus, more to the increase in output levels of the machines, giving the company more output in less time, and with a lower cost involved in the process.

If something could be done differently during the project it will be to invest more time in the project in order to keep improving more areas, or for future projects, and its follow ups.

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### INDUSTRIAL ENGINEERING PROGRAM ASSESSMENT

What we enjoyed the most during the project was that we could apply the different branches of study of the industrial engineering courses into a real world scenario. Additionally, we applied and enhanced our skills while working in a hands on project with the company. Overall it is a beautiful experience to utilize tools used in school, but on actual situations rather than work problems

What we learned that we think will help us the us was the disciplines that have to be taken into consideration to be able to achieve the objectives and goals in projects