

INDUSTRIAL, MANUFACTURING, & SYSTEMS ENGINEERING

CAPSTONE PROJECT /INTERNSHIP SUMMARY



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

Capstone Project Title: Standardization of Sandwiches at Sprouts Farmers Market.
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INTRODUCTION

Sprouts Farmers Market at El Paso,

Is a company started in 1943 in Arizona by a family, focused on making organic fresh food affordable for everybody. The first store opened in the United States, today there are more than 280 stores across the country operating in 15 states and employing 24,000 persons.

This chain of supermarket is emphasized on organic food, selling food in bulk, vitamins and supplements, packaged groceries, meat and seafood, Deli, baked goods, frozen foods, dairy products, household items and natural body care which includes body lotion, hair products, deodorants and others.

Sprouts famous slogan is “At Sprouts we embrace healthy living learn and grow together respect and serve one another maximize potential always enjoy the journey”.

The objective of this project was to develop standards (SOP's), so every sandwich will taste and look the same across every store. By doing enough research and time studies, another goal was to improve the material handling. This consisted of developing efficient replenishment plans based on daily and weekly demands. It was also observed that the Non-Value Added elements of the procedure consisted mostly of wasted time by finding and gathering materials. We proposed different scenarios in order to reduce and improve the processes, and define a better flow of associates and materials. Our proposed standard layout consisted of having all materials and tools used in making sandwiches to be within reach of the employee to minimize all if not most Non-Value Added elements.

Even though we feel confident of the outcomes we obtained, our project cannot be proven to be effective yet since Sprouts would have to invest in remodeling their Deli Department in accordance to the layout we proposed.

As far as organizing our project throughout the semester, the best method we found was to develop a Gantt Chart in week 1 of the semester and determine all the elements that at that point were considered important to us. Once all elements were foreseen, we broke them down by setting goals for each week. This consisted of commitment of all team members to be up to date with the tasks we had set ourselves too. We were able to stay ahead most of the time until we had few obstacles along the way such as not having full access by the stores and getting approval of Management to do research at the stores. The order we followed in detecting and fixing the problem was the DMAIC procedure. This enabled us to follow the proper approach, we also finalized our Senior Presentation by elaborating each procedure and how it helped us eventually improve and control this process.

PROJECT OUTCOMES

To standardize the sandwiches, we started by creating a process flow chart to analyze the process of each product. This process flow enabled us to analyze closely all the Value-Added elements that are required to build the sandwiches/wraps. After this was done, we had a good understanding of the workflow and all of the Non-Value added elements that was inefficient for the procedure such as (gathering ingredients, walking, etc.) Once this was well established, we used the Process Failure Mode and Effect Analysis (PFMEA) to detect which process functions had the Highest Risk Priority Number (RPN). After this analysis was done, we focused on how to fix the critical/highest RPN's.

Proposed Layout Cost and Benefits

Proposed Layout has an estimated Cost of \$3000-\$5000 in consideration that all old equipment will be removed and replaced with New Equipment. If old equipment is used then this cost can significantly be less than the proposed amount.

- The benefits of this investment will reduce the time lost in walking to the fridge and searching for items.
- Process flow of making sandwiches will be more efficient.
- Has potential to reduce most if not all non-value added elements.

Work Triangle Principle

The kitchen work triangle is a concept used to determine efficient kitchen layouts. The primary tasks in a kitchen are carried out between the cooktop, the sink and the refrigerator. These three points and the imaginary lines between them, make up what kitchen experts call the work triangle. In the case of the Deli Dept, the main points will

INDUSTRIAL ENGINEERING PROGRAM ASSESSMENT

One of the constraints of the project and most important was food safety. Since the employee must wash their hands every time they touch other things that is not the sandwich, and switch gloves for the safety of the consumer. Each ingredient had a 15 minutes limit of exposure. If the food is more than 15 minutes out of the fridge then it must be thrown away, because it can reach a temperature of 32 degrees and is easier to create bacteria.

- Each sandwich product had to be sold within 3 days of creation, if otherwise then it had to be thrown away. This rule is followed in order to ensure high quality products for the consumer.

- The Deli department shared areas and the fridge with the bakery and the meat department.
- This project had no budget but the cheapest and most convenient alternatives were considered through the entire process of this project.

One last constraint was that Sprouts does not have a specific time of production, since there is only one employee making sandwiches and other activities. The employee will organize the day and depending on the number of sandwiches available and sold, workers will decide to make more or not.

For the purpose of future pursuers of Industrial Engineering, it is important to understand all the different tools that are thought and expected from an Industrial Engineer. Industrial Engineers need to have the ability to break down complex procedures and most importantly be able to standardize that procedure, in order for any common man to be able to follow in a safely and efficient manner. The concept of Standardization, in this case sandwiches, is a rewarding learning experience in the manner that we will take these concepts for application in our future careers.