

Project Title: Weeke 1 Efficiency Improvement Project

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The Marco Group, Inc. located in Neosho, Missouri is a manufacturer of a variety of seating, office, classroom, and storage-related items. They use a variety of material altering equipment, and one of the most critical is the Weeke BHP CNC Router (Weeke 1). It is expected to perform at an 85% efficiency rating. Weeke 1 currently has a varying monthly efficiency rating between 40% and 60%. This equates to a substantial loss in revenue. The objective of this project was to recommend ways to improve Weeke 1's efficiency to at least 70% by project completion. This project used the DMAIC model standards and concluded with making improvement recommendations. The DMAIC model is an acronym for Define, Measure, Analyze, Improve, and Control. The process is used to increase performance, streamline resource usage, eliminate non-value adding steps, and improve the overall efficiency of a business process. The define phase consists of understanding what the problem is. The measure phase is used to collect data pertinent to the project. The analyze phase determines what the root cause of the problem is. The improve phase tests the change(s) to the system. The control phase tracks the improvements and, if necessary, restarts the process.

The project was setup to track the amount of downtime the machine experienced over a two-week period. The downtime was categorized into 15 different sections, tracked daily by the operator. The financial impact of the downtime was determined to be around \$25,000 per year.

The data collected showed that the machine operator was spending too much time on non-value adding steps and waiting for material to be brought to or moved away from the machine. The recommendations that were proposed to the operation manager showed that efficiency could be increased to around 74% with minimal adjustments. This would surpass the project goal of 70%.