POSTER SUMMARY

USE OF A TIME AND MOTION STUDY TO IDENTIFY A CONSTRAINT IN A SUGAR PACKING STATION

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Abstract

A chain is only as strong as its weakest link. The Theory of Constraints, which comprises of five steps, serves to identify and then strengthen this link. The five steps are generally considered to be: (1) identify the constraint, (2) develop a plan for overcoming the constraint, (3) focus resources on Step 2, (4) reduce the effect of the constraint by expanding capability or reducing work load and (5) repeat the process. This poster focusses on the first step of the Theory of Constraints, which aims to identify the rate limiting step (constraint) using a technique known as a Time and Motion study. The work was carried out for a back-end sugar packing station.

A Time and Motion study is a useful tool that can be used for continuous improvement to increase productivity by systematic observation, analysis and measurement of the separate steps for a specific job. The objective of the time and motion study was to determine the bottleneck in achieving the design capacity of a 25 kg packing line. The poster details the methodology employed and the interpretation of the results obtained in order to meet the objective.

The Time and Motion study identified the scale cycle time (filling and dispensing of sugar into the weighing hopper and product bag, respectively) as the initial constraint. Recommendations were also made in line with Steps two to five of the Theory of Constraints.

Keywords: Theory of Constraints, bottleneck, Time and Motion Study, packing station, productivity, continuous improvement