

Production Capacity Improvement with Theory Of Constraint at Heavy Equipment Component Industry

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Abstract

PT. XYZ produces heavy equipment components which will be supplied to heavy equipment companies, required by the heavy equipment industry, civil works, automotive, agricultural equipment and other industries. Examples of products produced by the company are bucket 0.97 products which are supporting components of excavator heavy equipment products. The company has problem with the bucket production line capacity which currently cannot reach the desired production target. The purpose of this study is to analyze the capacity of the bucket production line related to efforts to increase bucket production capacity using the Theory of Constraint (TOC) approach. Based on the results of standard time data collection, calculation of needs and availability of production capacity for each work station is calculated. Next we do identification of the bottleneck work station and the bottleneck station exploitation stage, followed by the sub-ordination stage and the evaluation of the proposed improvement related to capacity problems that occur. The analysis shows that there are several work stations that become bottleneck stations. The exploitation stage is carried out by providing several proposed improvements in the form of adding work station facilities as well as providing a time buffer at the bottleneck work station. To support the proposed improvements, a number of proposed improvement scenarios are simulated using ProModel 6.0 Software.

Keywords

production system, production line, bucket, capacity, TOC