

**DESIGNING PRODUCTION PLANNING AND CONTROL SYSTEM BY
APPLYING DISPATCHING RULE: A CASE STUDY AT A PACKAGING
MANUFACTURER**

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.



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ABSTRACT

Designing Production Planning and Control System by Applying Dispatching Rules: A Case Study at A Packaging Manufacturer

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This research is conducted in a packaging manufacturer that is a customer-driven company that provides both mass production and customized product. Currently, the company is facing several problems regarding the amount of safety stock on hand, the parts inventory, and the production planning itself which includes the production scheduling. This research proposes a new design of the production planning system by applying dispatching rules to help with the current problems faced by the company. The redesigning of the production planning and control system includes the new production strategy (pull system), implementing a new safety stock calculation, the use of dispatching rules for the sequencing of the production schedule and the production scheduling with the help of Gantt chart. A comparison will be created to compare the current company's condition with the new design of the production planning and control system. The comparison consists of the safety stock calculation, parts inventory on hand and the economic analysis. From the improvements, positive results are obtained. Total final parts inventory and average daily parts inventory are reduced up to 38% and 37% respectively. Safety stock sub product A, B, C and D reduced by 75%, 83%, 77% and 72% respectively. Total final parts inventory and safety stock holding cost are reduced by 59% and 77% respectively.

Keywords: Production Planning and Control, Pull System, Dispatching Rules, Safety Stock, Inventory, Packaging Manufacturer.

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DEDICATION

I dedicate my thesis to Fransiskus Xaverius Dimas Adrian Brahmantyo and Mamed.

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