

**UNIVERSITI TEKNOLOGI MARA**

**TECHNICAL REPORT**

**OPTIMIZING MANUFACTURING SYSTEM USING QUEUING  
SYSTEM AND SIMULATION  
P54S18**

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## Abstract

Manufacturing is the main focusing to produce a product. As we can see in the new era of globalization, satisfaction from customers' unique demands and the decreasing of lead time in production become the general trends of the companies. The problems faced by the manufacturer are the product have to wait and queue for a certain period of time before proceed to another process and this made them to not achieve their target on the production to be done in a day with the larger number of quantities. The objectives are to minimize the waiting time for the product line and to evaluate the service time, which include in the packaging process to produce the final quality product in M/M/1 model by using ARENA software. This study will use primary data collection of queuing system and simulation process which will become the procedure of data collection. There are many characteristics and mathematical formula that will be used in this research which is single-channel models will be elaborated by using queuing system characteristics. Overall, this research can be concluded that some of the processes is unstable and the manufacturer is moderately operated since the value of the utilization rate is low.

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