WASTE ELIMINATION BY USING VALUE STREAM MAPPING WITH SIMULATION: A CASE STUDY IN A PLASTIC FIRM

By

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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

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One way or another, in a competitive environment like these days, a company must be able to adapt toward changes. As one of the most known concepts, lean has gained great awareness not just in manufacturing field but also in the service business. Toyota Production System (TPS) also known as Lean defined VSM as the blueprint of lean improvements in a system. The creation of current state map aims to highlight the current condition, while the future state map aims to give the picture of improvement using lean tools. However, the decision to make such changes need more justification and information if the improvement will function accordingly. This is where a simulation model takes place. The integration from a static result of VSM maps to a dynamic result of VSM models in the simulation could support the decision making in a planning phase. This study takes place on the manufacturing floor of a plastic injection moulding company. The development of VSM has highlighted the main waste in the current state map and elimination of waste in the future state map. Furthermore, simulation models of both maps were constructed to justify the best possible improvements for eliminating the waste.

Keywords: Current State Map, Future State Map, Lean, Simulation, Value Stream Mapping, Waste

DEDICATION

I dedicate this thesis to my beloved parents, beloved brothers, beloved sister, beloved friends, and for those fellow engineers who seek a problem to solve while enduring the cold yet warm night of laughter and struggle together.

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