

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

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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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TABLE OF CONTENTS

STATEMENT BY THE AUTHOR	2
ABSTRACT.....	3
DEDICATION	5
ACKNOWLEDGEMENTS	6
TABLE OF CONTENTS	7
LIST OF FIGURES	11
LIST OF TABLES	13
CHAPTER 1 – INTRODUCTION	14
1.1 Background.....	14
1.2 Thesis Purpose.....	15
1.3 Thesis Scope and Limitation	15
1.4 General Statements of Problem Area.....	16
1.5 Research Problem.....	16
1.6 Assumption.....	16
1.7 Thesis Structure	16
CHAPTER 2 - LITERATURE REVIEW	18
2.1 Lean	18
2.1.1 Brief History of Lean	18
2.1.2 Principles of Lean	19
2.1.3 The Goal of Lean	21
2.1.4 Muda or Waste	21
2.1.5 Lean Tools.....	22
2.2 Value Stream Mapping	23
2.2.1 Brief History of VSM	23
2.2.2 Simple and Essential Tool.....	24
2.2.3 Application of VSM.....	25
2.2.4 Crucial Things Showed Through VSM	26
2.2.5 Symbols of VSM.....	27
2.2.6 Creating a Value Stream Map	27
2.2.6.1 Product Family Selection	29
2.2.6.2 Current State Drawing.....	29
2.2.6.3 Future State Drawing	30

2.2.6.4	Work Plan and Implementation.....	31
2.2.7	Calculation for VSM.....	31
2.2.7.1	Takt Time	31
2.2.7.2	Inventory lead time	32
2.3	Simulation.....	32
2.3.1	Simulation in Support of VSM	33
2.3.2	Strength and Weakness of Simulation	34
2.3.3	Verification and Validation	34
2.4	Cycle Time Preparation	35
2.4.1	Uniformity Test.....	35
2.4.2	Adequacy Test.....	35
2.4.3	Standard Time	36
CHAPTER 3 – RESEARCH METHODOLOGY		37
3.1	Data Collection Methods.....	39
3.1.1	Direct Observation.....	39
3.1.2	Discussion.....	39
3.2	Validity Test.....	40
3.3	Simulation Model Verification and Validation	40
CHAPTER 4 – RESULTS AND DISCUSSIONS		41
4.1	Data Collection.....	41
4.1.1	Company Overview	41
4.1.2	The Product.....	41
4.1.3	Demand.....	43
4.1.4	Production Process.....	43
4.1.4.1	Production Process: Raw Material Preparation	45
4.1.4.2	Production Process: Mixing	45
4.1.4.3	Production Process: Injection Moulding.....	47
4.1.4.4	Production Process: Spur Grinding.....	49
4.1.4.5	Production Process: Packaging	50
4.1.4.6	Production Process: Shipping	53
4.1.5	Cycle Time.....	53
4.1.5.1	Cycle Time: Raw Material Preparation and Shipping.....	53
4.1.5.2	Cycle Time: Mixing	54
4.1.5.3	Cycle Time: Injection Moulding.....	55
4.1.5.4	Cycle Time: Spur Grinding	56

4.1.5.5	Cycle Time: Packaging	57
4.1.6	Setup Time	58
4.1.7	Working Time	58
4.1.8	Number of Operators Involved	59
4.1.9	Inventory Quantity	59
4.2	Data Preparation	60
4.2.1	Uniformity Test	60
4.2.2	Adequacy Test	62
4.2.3	Standard Time	63
4.2.4	Takt Time	64
4.2.5	Inventory lead time	64
4.3	VSM Development	65
4.3.1	Product Family Selection	65
4.3.1.1	Part Quantity Process Routing (PQPR)	65
4.3.1.2	Financial and Customer Relation Perspective	66
4.3.2	Create Current State Map	66
4.3.3	Simulate Current State Map	71
4.3.3.1	Simulation Adjustment (Current State Model)	71
4.3.3.2	Simulation Result (Current State Model)	72
4.3.4	Model Verification and Validation	73
4.3.5	Analysis of Current State Map	74
4.3.5.1	Cycle Time	74
4.3.5.2	Production Lead Time	74
4.3.5.3	Inventory	75
4.3.5.4	Takt Time	75
4.3.6	Create Future State Map	76
4.3.7	Simulate Future State Map	78
4.3.7.1	Simulation Adjustment (Future State Model)	78
4.3.7.2	Simulation Result (Future State Model)	79
4.4	Current State and Future State Model Analysis	80
4.4.1	Production System	80
4.4.2	Work-in-process (WIP)	81
4.4.3	Raw Material Quantity	82
4.4.4	Raw Material Requirement	82
4.4.5	Finish Product Inventory	83

CHAPTER 5 – CONCLUSION AND RECOMMENDATIONS	84
5.1 Conclusion	84
5.2 Recommendations	84
GLOSSARY	85
REFERENCES	86
APPENDICES	89
APPENDIX A – CONTACT REPORT	90
CURRICULUM VITAE	95

