

IMPLEMENTATION OF WASTE REDUCTION TO OVERCOME EXCESSIVE OVERTIME IN WAREHOUSE OPERATION OF A 3PL COMPANY

THESIS

Submitted in Partial Fulfillment of the Requirement for the Bachelor of
Engineering Degree in Industrial Engineering



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The author realizes that this final project is still far from perfect. Therefore, the author sincerely apologizes for any shortcomings that may be found in this work. It is hoped that this final project may be useful for readers as a source of learning and reference. Constructive criticism and suggestions from readers are warmly welcomed to further improve the quality of this work.

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TABLE OF CONTENT

CHAPTER	TITLE	PAGE
	Cover Page	i
	Approval Page	ii
	Declaration of Originality	iii
	Acknowledgement	iv
	Company Approval Letter	v
	Table of Content	vi
	List of Tables	ix
	List of Figures	x
	Abstract	xii
1	Introduction	
	1.1. Background	1
	1.2. Problem Exploration	2
	1.2.1. Warehouse Employee Overtime	7
	1.2.2. Rejected Item	12
	1.2.3. Identification of the Problem Focus	14
	1.3. Problem Statement	15
	1.4. Research Objective	16
	1.5. Scope of Limitations	16
2	Literature Review and Basic Theory	
	2.1. Literature Review	17
	2.1.1. Research Related to Warehouse Operation	17
	2.1.2. Research Related to Business Process Mapping	24
	2.2. Basic Theory	27
	2.2.1. Warehouse Definition	27
	2.2.2. Warehouse Functions	27
	2.2.3. Type of Waste	29
	2.2.4. Waste in Warehouse Operation	30
	2.2.5. Process Activity Mapping	31
	2.2.6. Value Stream Mapping	33
	2.2.7. Business Process Mapping	34

	2.2.8. ECRS Analysis	35
3	Alternative Solution Selection	
	3.1. Root Cause Analysis	37
	3.2. Development and Selection of Alternative Solution	45
	3.3. Method and Tools Selection	47
	3.3.1. Waste Identification Method	47
	3.3.2. Business Process Mapping Method	49
4	Methodology	
	4.1. Methodology	51
	4.1.1. Empathizing	52
	4.1.2. Defining	53
	4.1.3. Ideating	54
	4.1.4. Prototyping	55
	4.1.5. Testing	57
	4.2. Research Uniqueness	58
	4.3. Standards and Code of Ethics	58
5	Data Processing and Analysis	
	5.1. Detailed Activity	62
	5.1.1. Sorting Route	64
	5.1.2. Drafting Invoice	65
	5.1.3. Invoice Grouping	66
	5.1.4. Order Picking	67
	5.1.5. Packing and Loading	67
	5.1.6. Delivered Invoice Checking	68
	5.1.7. Sales Realization	69
	5.2. Warehouse Activity Data	70
	5.2.1. Uniformity Test	73
	5.2.2. Adequacy Test	77
	5.3. Waste Identification	78
	5.3.1. Process Activity Mapping	80
	5.3.2. Current Value Stream Mapping	84

5.4.	Waste Root Cause Analysis	87
5.4.1.	Sorting Route Waste	87
5.4.2.	Drafting Invoice Waste	89
5.4.3.	Invoice Grouping Waste	92
5.4.4.	Order Picking Waste	94
5.4.5.	Packing and Loading Waste	98
5.4.6.	Delivered Invoice Checking Waste	100
5.4.7.	Sales Realization Waste	105
6	Prototyping	
6.1.	ECRS Analysis	107
6.2.	Proposed Design	111
6.2.1.	Document Organizer	112
6.2.2.	Stock Card	112
6.2.3.	Kanban Board	113
6.2.4.	Standard Operation Procedure	115
6.2.5.	Improved Business Process	120
7	Implementation	
7.1.	Implementation Process	129
7.1.1.	Implementation of Document Organizer	129
7.1.2.	Implementation of Stock Card	130
7.1.3.	Implementation of Kanban Board	131
7.1.4.	Implementation of SOPs	132
7.2.	Time Comparison	137
7.3.	Future Value Stream Mapping	140
8	Conclusion and Suggestion	
8.1.	Conclusion	142
8.2.	Suggestion	142
	References	143
	Appendix	147

LIST OF TABLES

Table 1.1.	Sales Impact of Incorrect Item over Two Weeks	13
Table 2.1.	Literature Review Warehouse Operation	20
Table 2.2	Literature Review Business Process Mapping	26
Table 2.3.	Symbols in Value Stream Mapping	34
Table 2.4.	Business Process Mapping Symbol	35
Table 3.1.	Generated Alternative Solution	45
Table 3.2.	Detailed Possible Alternatives Solutions	46
Table 3.3	Method Selection for Waste Identification	48
Table 3.4	Tools Selection for Business Process Mapping	49
Table 5.1.	Data Invoice Sorting Process	71
Table 5.2.	Uniformity Test Recapitulation	74
Table 5.3.	Adequacy Test Recapitulation	77
Table 5.4.	All Activities Average Duration	80
Table 5.5.	Process Activity Mapping	81
Table 5.6.	Activity Summary	84
Table 5.7.	Sorting Route Root Cause	88
Table 5.8.	Drafting Invoice Root Cause	91
Table 5.9.	Invoice Grouping Root Cause	93
Table 5.10.	Order Picking Root Cause	96
Table 5.11.	Packing Loading Root Cause	99
Table 5.12.	Delivered Invoice Checking Root Cause	102
Table 5.13.	Sales Realization Root Cause	106
Table 6.1.	Eliminated Activities	107
Table 6.2.	Combined Activities	108
Table 6.3.	Rearrange Activities	109
Table 6.4.	Simplify Activities	110
Table 7.1	Data Improved Activity (Time)	137
Table 7.2	Time Comparison Before and After Implementation	139

LIST OF FIGURES

Figure 1.1.	Warehouse Condition	2
Figure 1.2.	Warehouse Condition from Above	3
Figure 1.3.	SIPOC Diagram	4
Figure 1.4.	PT XYZ Business Process Warehouse Focused	5
Figure 1.5.	Warehouse Employee Overtime Frequency in One Week (Hours)	7
Figure 1.6.	Dropper Waiting for Invoice Checking	10
Figure 1.7.	Number of Incorrect Item	13
Figure 2.1.	Process Activity Mapping Chart	31
Figure 2.2.	Value Added Analysis Questions	32
Figure 2.3.	Value Stream Mapping	33
Figure 3.1.	Cause Effect Diagram	37
Figure 3.2.	Interrelationship Diagram	43
Figure 4.1.	Research Methodology	51
Figure 4.2.	Empathizing Phase	52
Figure 4.3.	Defining Phase	53
Figure 4.4.	Ideating Phase	55
Figure 4.5.	Prototyping Phase	56
Figure 4.6.	Testing Phase	57
Figure 5.1.	Business Process for Identifier	62
Figure 5.2.	Sorting Route Activity	64
Figure 5.3.	Drafting Invoice Activity	65
Figure 5.4.	Invoice Grouping Activity	66
Figure 5.5.	Order Picking Activity	67
Figure 5.6.	Packing and Loading Activity	68
Figure 5.7.	Delivered Invoice Checking Activity	69
Figure 5.8.	Sales Realization Activity	70
Figure 5.9.	Current State Value Stream Mapping	85
Figure 5.10.	Bound Document	92
Figure 5.11.	Current Stock Card Design	94
Figure 5.12.	Return Document Handling	100
Figure 6.1.	Document Tray	112
Figure 6.2.	Proposed Stock Card Design	113

Figure 6.3.	Kanban Board Design	114
Figure 6.4.	Sorting Route SOPs	116
Figure 6.5.	Drafting Invoice SOPs	116
Figure 6.6.	Invoice Grouping SOPs	117
Figure 6.7.	Order Picking SOPs	118
Figure 6.8.	Packing and Loading SOPs	118
Figure 6.9.	Delivered Invoice Checking SOPs	119
Figure 6.10.	Sales Realization SOPs	120
Figure 6.11.	Improved Business Process (To Be)	121
Figure 6.12.	Sorting Route Improvement	122
Figure 6.13.	Drafting Invoice Improvement	123
Figure 6.14.	Invoice Grouping Improvement	124
Figure 6.15.	Order Picking Improvement	125
Figure 6.16.	Packing and Loading Improvement	126
Figure 6.17.	Delivered Invoice Checking Improvement	127
Figure 6.18.	Sales Realization Improvement	128
Figure 7.1.	Before and After Implementation	130
Figure 7.2.	Implementation of Document Trays	130
Figure 7.3.	Implementation of Stock Card	131
Figure 7.4.	Implementation of Kanban Board	132
Figure 7.5.	Implementation of SOPs	133
Figure 7.6.	Implementation of Poster in Packing Area	133
Figure 7.7.	Implementation of Poster in Warehouse Storage	134
Figure 7.8.	Implementation of Poster Kanban Board	134
Figure 7.9.	Implementation of Poster Box Preparation	135
Figure 7.10.	Implementation of Poster Stock Card	136
Figure 7.11.	Future State Value Stream Mapping	140

ABSTRACT

Excessive overtime has become a persistent issue in the warehouse operations of PT XYZ, a 3PL company. Employees frequently exceeded the legally permitted limit of 18 hours of overtime per week. This condition arose from extended working hours that went beyond the daily threshold of 11 hours, creating challenges for multiple stakeholders, including the depot head, warehouse staff, and sales personnel.

To analyse and address the problem, several structured methods were employed. Process Activity Mapping (PAM) was first used to classify warehouse activities into value added, non-value added, and necessary non-value added categories. This was followed by the application of Value Stream Mapping (VSM) to visualize the flow of activities and measure the cycle time of the entire process. The root causes of delays and inefficiencies were then examined using the Why and Whys analysis, which uncovered several underlying issues contributing to waste. Based on these insights, the ECRS principle (Eliminate, Combine, Rearrange, Simplify) was applied to redesign workflows and propose targeted improvements aimed at reducing working hour.

The implementation of these methods resulted in significant improvements within warehouse operations. The targeted initiatives included the redesign of several activities, the modification of the stock card format, the introduction of a kanban board, and the establishment of Standard Operating Procedures (SOPs). Following these solutions, the average employee working hours were successfully reduced to 10.72 hours per day, keeping them within the threshold of 11 hours per day and thereby ensuring compliance with the legal overtime regulation of 18 hours per week. Furthermore, cycle times across key warehouse processes were reduced by 16.7 percent, equivalent to 65.9 minutes, demonstrating a measurable improvement in overall efficiency.

Keywords: Overtime, Working Hours, Third-Party Logistic, Waste Reduction, VSM