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LEAN SIX SIGMA FRAMEWORK FOR SME SECTOR APPERAL MANUFACTURES IN SRILANKA

by

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This thesis was submitted to the Department of Mechanical Engineering of the University of Moratuwa in partial fulfilment of the requirements for the Degree of Master of Engineering in Manufacturing Systems Engineering

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DECLARATION

This Dissertation paper contains no material which has been accepted for the award of any other degree or diploma in any University or equivalent institution in Sri Lanka or abroad, and that to the best of my knowledge and belief, contains no material previously published or written by any other person, except where due reference is made in the text of this Dissertation.

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ABSTRACT

The purpose of this research is to develop integrated lean six sigma (LSS) framework for Sri Lankan Small & Medium scale apparel manufacturing industry. Both Lean and Six Sigma are key business process strategies which are employed by companies to enhance their manufacturing performance. However whilst there is significant research information available on implementing lean or Six Sigma individually there is very little information available to integrate approach.

This research used the concept of critical success factors to develop the framework. Relevant critical success factors found in literature assumed as valid and applicable to Sri Lankan SME Apparel manufacturing sector. Found out the most influencing factors through the questionnaire spread out among the selected sample set of manufactures. The difficulties may encounter during the implementation and the factors describe the nature of industry also found out from the collected data. On the basis of collected data the framework was formulated.

The design, development and implementation of a LSS model shown here provides a simple yet highly effective approach to achieving significant improvements in a company's product quality, cost and delivery. The model combines contemporary lean and six sigma strategies and offers practicing production/process/manufacturing managers and engineers with a strategic framework for increasing productive efficiency and output.

The research provides the live application of the model in a selected manufacturing organisation and the results obtained.

TABLE OF CONTENT

TITLE.....	1
ACKNOWLEDGEMENT.....	11
ABSTRACT.....	III
1.INTRODUCTION.....	1
1.1 Objectives	2
2.LITRETURE REVIEW.....	3
2.1 Six Sigma	3
2.11 Methodologies & tools	4
2.12 Six Sigma Organisational Architecture.....	7
2.2 Lean	9
2.21 Methodologies & tools.....	10
2.3 Lean Six Sigma	18
2.4 Six Sigma & lean Six Sigma Frameworks.....	22
3. APPERAL INDUSTRY IN SRI LANKA	26
4. METHODOLOGY.....	29
4.1 Limitations and Assumptions	29
5. RESULTS & RECOMMENDATIONS.....	31
5.1 General factors Findings.....	31
5.2 Effect of the Critical Success factors.....	32
5.21 Effect of Critical Success factors in Initiation phase.....	34
5.22 Effect of Critical Success factors in Implementation Phase.....	36
5.23 Effect of Critical Success factors in Sustaining phase.....	38
5.3 Difficulties may encounter during the projects.....	40
5.4 Recommendations & Implementations.....	40
5.41 Initiation phase.....	40
5.42 Implementation Phase.....	41
5.43 Sustaining phase.....	43
5.5 Proposed Frameworks.....	44
5.6 .Deliverables of the frameworks.....	46
6.LIVE IMPLEMENTATION IN COMPANY A.....	47
6.1 Applying six Sigma Concepts.....	49
6.2 Application of Lean.....	51
6.3 Employ motivation& sustainability of Implementation.....	53
6.4 Achievements realized through LSS Process.....	54
7. CONCLUSION.....	55
BIBILIOGRAPHY.....	56
APPENDIX A : Questionnaire	A1-A3
APPENDIX B : VSM Of the Company.....	B
APPENDIX C: Sample Set.....	C

LIST OF TABLES

Table 2.1: Differences between DMAIC and DFSS.....	7
Table 2.2: Fundamental differences between six sigma and lean.....	18
Table 5.1: Results of General Factors	29
Table 5.2: Critical success factors & sources obtained	30
Table 5.3: Results obtained form the Questionnaire for Initiation Phase.....	31
Table 5.4: Statistical analysis & results for the initiation Phase.....	33
Table 5.5: Results obtained form the Questionnaire for Implementation Phase.....	34
Table 5.6: Statistical analysis & results for the Implementation Phase.....	35
Table 5.7: Results obtained form the Questionnaire for Sustaining Phase.....	35
Table 5.8: Statistical analysis & results for the Sustaining Phase.....	37
Table 5.9: Difficulties may encounter during projects.....	38

LIST OF FIGURES

Figure 2.1: Six Sigma Architecture.....	6
Figure 2.2: Major Tents of Lean Manufacturing.....	8
Figure 2.3: Customer & Producer point of Views of three strategies.....	16
Figure 2.4: Lean Six Sigma (Best of both worlds).....	17
Figure 2.5: Change's Six Sigma Framework for SMEs.....	19
Figure 2.6: Park's Six Sigma framework.....	20
Figure 2.7: Six Sigma implementation framework for SMEs.....	21
Figure 2.8: Lean Six Sigma framework.....	22
Figure 5.1: Proposed frame work for Overall Project.....	42
Figure 5.2: Proposed frame work for detail project implementation.....	43
Figure 6.1: Annual absenteeism & turnover rates in Company A	44
Figure 6.2: Pareto analysis of year to date quality related....	46
Figure 6.3: Cause & effect diagram of CTQ issue.....	47