

**MEASUREMENT AND IMPROVEMENT ANALYSIS OF SUPPLY CHAIN
MATURITY LEVEL USING SUPPLY CHAIN MATURITY ASSESSMENT
TEST (SCMAT) IN A 3PL COMPANY: CASE STUDY AT PT XYZ SUPPLY
CHAIN**

By

Steeven Yosi
11209011

A thesis submitted to the Faculty of
Engineering and Information Technology

in partial fulfillment of the requirements
for the
BACHELOR'S DEGREE
in

INDUSTRIAL ENGINEERING

SWISS GERMAN UNIVERSITY 

SWISS GERMAN UNIVERSITY
EduTown BSD City
Tangerang 15339
Indonesia

July 2013

REVISION AFTER THE THESIS DEFENSE ON 26TH OF JULY 2013

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.

Steven Yosi

Student

Approved by:

Date

Ir. Irvanos Tertiana, MBA

Thesis Advisor

Date

Aditya Tirta Pratama, S.Si M.T

Thesis Co-Advisor

Date

Dr. Ir. Gembong Baskoro, M.Sc

Dean

Date

Copy 5

Steven Yosi

ABSTRACT

MEASUREMENT AND IMPROVEMENT ANALYSIS OF SUPPLY CHAIN MATURITY LEVEL USING SUPPLY CHAIN MATURITY ASSESSMENT TEST (SCMAT) IN A 3PL COMPANY: CASE STUDY AT PT XYZ SUPPLY CHAIN

By

Steeven Yosi

Ir. Invanos Tertiana, MBA, Advisor

Aditya Tirta Pratama, S.Si, M.T, Co-Advisor

SWISS GERMAN UNIVERISTY

The purpose of this research is to address the measurement process of supply chain maturity using Supply Chain Maturity Assessment Test (SCMAT), and further analyze the next plan for the improvement plan. Supply Chain Excellence roadmap will be used as reference for prioritization analysis, then using the maturity score and the priorities, prioritization matrix could be created. The proposed roadmap for improvement will be created based on prioritization matrix and the interview and observation of the warehouse according to the best practice tags. This research will be conducted on the Spare part logistic (SPL) warehouses of the company, by distributing the SCMAT questionnaire to the upper management level of the warehouses and the operation department. The finding of this research is that the SCMAT is industry generic, which means can be used in various industries, and also can be customized to comply with the company's role.

Keywords: Supply Chain Maturity Assessment Test, Maturity Model, Roadmap, Prioritization Matrix, Business Process Maturity, Supply Chain.



DEDICATION

I dedicate this theses for my beloved family, my beloved best friends and fellow students who might benefit from this theses.



ACKNOWLEDGEMENTS

First of all the author wishes to express gratitude to Allah SWT for the countless blessings and guidance on the while process of completing this research.

The author also owes profound gratitude to Ir. Invanos Tertiana, MBA and Aditya Pratama, S.Si, MT as the advisor and co-advisor of this research. Through their endless guidance, help, motivation and advice have made this theses possible.

The author would also like to say biggest thank to Andika Bayupati for giving me an opportunity to do the research in PT XYZ Supply Chain, and also to Elfani Sari as the advisor from the company. I am extremely grateful to have them for providing such a nice support and guidance despite their busy schedules.

Furthermore, I would like to express my gratitude to my classmates, Industrial Engineering batch 09, especially to my future consultants, Irwan Dani & Dimas Arie Purnama, and to hyung, Bima Fastabiqul Khoirot for their endless motivation, and for making this college journey much more fun, enjoyable and memorable.

Most importantly, none of this would be possible without the love, patience and endless support from my family. I would like to sincerely thank my family especially my dad, Seiji Yoshioka and my mom, Inggit Kadir. Not to forget my 2nd family, Ario, Vidya, Nindya, Garindra, Vinca, Kevin, Aditya, Yudita, Shabrina, and Fadlil who are always be there through my ups and downs.

Lastly the author would like to thank to friends and to those who have supported in any way in the process of completing this theses.

TABLE OF CONTENTS

	Page
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.....	16
1.4 General Statements of Problem Area.....	16
1.5 Research Problem	17
1.6 Assumption	17
1.7 Thesis Structure	17
CHAPTER 2 – LITERATURE REVIEW	19
2.1 Introduction.....	19
2.2 Supply Chain.....	19

2.3 Definition of Supply Chain Management	19
2.4 Driving the Supply Chain Performance	21
2.5 Maturity Models.....	23
2.5.1 Model Conceptualization and Structure of Maturity Models	
2.6 Business Process Maturity (BPM)	26
2.5.1 Level in Business Process Maturity	
2.7 Business Process Orientation (BPO)	28
2.8 SCMAT.....	30
2.8.1 Requirement for A Quick Assessment Tool	
2.8.2 Development of SCMAT	
2.8.3 SCMAT Model	
2.9 Best Practices	34
2.9.1 SCMAT Best Practice Database	
2.9.2 Strengths and Weaknesses	
2.10 Roadmap	40
2.10.1 Supply Chain Excellence Roadmap	
2.11 Implementation Approaches	44
CHAPTER 3 – METHODOLOGY	46
3.1 Introduction.....	46
3.2 Research Design.....	46
3.3 Research Framework	47

3.3.1 Pre-test	
3.3.2 Data Collection	
3.3.3 Data Analysis	
3.4 Research Data	49
3.4.1 Research Data Types and Sources	
3.4.2 Questionnaire Design	
CHAPTER 4 – RESULT & DISCUSSION	51
4.1 Company Overview	51
4.2 SCMAT Results	51
4.2.1 Overall Result	
4.2.2 Category: Strategy	
4.2.3 Category: Control	
4.2.4 Category: Processes	
4.2.5 Category: Resources & Materials	
4.2.6 Category: Information	
4.2.7 Category: Organization	
4.3 Prioritization Analysis	70
4.3.1 1st Priority Prioritization	
4.3.2 2nd Priority Prioritization	
4.3.3 3rd Priority Prioritization	
4.3.4 4th Priority Prioritization	

4.3.6 Prioritization Matrix	
4.4 Proposed Roadmap	77
4.4.1 Phase 1	
4.4.2 Phase 2	
4.4.3 Phase 3	
CHAPTER 5 – CONCLUSION AND RECOMMENDATION	85
5.1 Conclusion	85
5.2 Future Research	86
5.3 Recommendation	86
GLOSSARY	87
References.....	88
APPENDICES	93
APPENDIX – A Non-Disclosure Agreement.....	93
APPENDIX – B1 Contact Report 1.....	95
APPENDIX – B2 Contact Report 2.....	96
APPENDIX – B3 Contact Report 3.....	97
APPENDIX – B4 Contact Report 4.....	98
APPENDIX – B5 Contact Report 5.....	99
APPENDIX – C Relationship Matrix	100