SUGGESTION TO INCREASE THE FACTOR OF KPI PT. ALOR MARINA LESTARI BY IMPROVING THE SUPPLY CHAIN DECISION

A THESIS

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



MARIO NOVTHUFIRST TEY SERAN

13 14 07510

INTERNATIONAL INDUSTRIAL ENGINEERING PROGRAM
INDUSTRIAL ENGINEERING FACULTY
ATMA JAYA YOGYAKARTA UNIVERSITY
2017

IDENTIFICATION PAGE

A THESIS ON

SUGGESTION TO INCREASE THE FACTOR OF KPI PT. ALOR MARINA LESTARI BY IMPROVING THE SUPPLY CHAIN DECISION

Submitted by

Mario Novthufirst Tey Seran

13 14 07510

is stated fulfill requirement on August 23rd, 2017 Faculty Supervisor,



Dr. Parama Kartika D. SP., S.T., M.T.

Board of Examiners,

Chair,

P

Dr. Parama Kartika D. SP., S.T., M.T.

- yia

Dr. A. Teguh Siswantoro, M.Sc.

Member

Ir. Bernadus Kristyanto, M.Eng., Ph.D.

Yogyakarta, August 23rd, 2017 Universitas Atma Jaya Yogyakarta

Faculty of I dustrial Technology,

Dean.

12.

Dr. A. T guh Siswantoro, M.Sc

STATEMENT OF ORIGINALITY

I declare that the research with the title "Suggestion to Increase the Satisfaction of Customers by Improving the Supply Chain Decision of Pt. Alor Marina Lestari" in this thesis has never been submitted for any other degree.

I confirm that to my knowledge and belief, this research paper I have written does not contain the works of other people unless those cited in the quotations and bibliography, as a scientific paper should be.

Moreover in order to ensure the originality of paper, I believe and abide the rule by Ministry of education and Culture of Republic Indonesia, subject to the provision of Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 17 Tahun 2010 tentang Pencegahan dan Penanggulangan Plagiat di Perguruan Tinggi.



Signature

Student name: Mario Novthufirst Tey Seran

Student ID : 13 14 07510

Date : August 2017

ACKNOWLEDGMENT

The author would like to deliver the first gratitude toward God for the kindness, blessings, strength and grace so the author could finish the final thesis report about "Suggestion to Increase the Satisfaction of Customers by Improving the Supply Chain Decision of Pt. Alor Marina Lestari". This thesis is made as a partial fulfillment for the degree of bachelor of engineering in industrial engineering.

The author believes the succession in writing the final thesis could not be done alone. Therefore, the author would like to give appreciation to:

- 1. Mr. Parama Kartika Dewa, S.T., M.T., Dr. as the advisor and supervisor for the completion of final thesis,
- 2. Mrs. Ririn Diar Astanti, S.T., M.T., Dr.Eng. as the coordinator of international industrial engineering program of Atma Jaya Yogyakarta University for the guidance and support during the study period,
- 3. All lecturers and staffs of industrial engineering program for giving the knowledge and supporting the administrative matters,
- All staffs of PT. Alor Marina Lestari for supporting the author in doing the research.
- 5. Beloved parents and brother for uncountable supports given to the author during the completion of final thesis,
- 6. Dearest friends who always give the support to the author in any way during the time of study in Atma Jaya Yogyakarta University,
- 7. Other parties who have not been mentioned but assisted the author in doing the research.

Finally, the author hopes this report of final thesis would bring benefits to all readers.

TABLE OF CONTENT

CHAPTER	TITLE	PAGE
	Title Page	
	Identification Page	i
	Statement of Originality	ii
	Acknowledgement	i۱
	Table Of Content	١
	List of Figure	vi
	List of Figure	ί
1/	List of Appendix	>
	Abstract	xi
(1	Introduction	1
3	1.1. Background	1
0. A	1.2. Problem Formulation	3
\sim \sim	1.3. Purpose of Research	3
	1.4. Limitation of Research	3
2	Literature Review and theories	4
	2.1. Comparison of The Previous Researches and the	4
	Current One	11
	2.2. Theories	8
3	Methodology	26
	3.1. Initial Observation	26
	3.2. Problem identification	26
	3.3. Literature study	26
	3.4. Data Collection	26
	3.5. Structuring the Hierarchy of Supply Chain	26
	Performance	
	3.6. Creating and Spreading The Questionnaire	27
	3.7. Processing the AHP Calculation	27
	3.8. Deciding the Consistency Level	27
	3.9. Calculating the Score of KPI	27
	3.10. Defining The Degree Of Supply Chain Performance	27
	3.11. Analysis And Discussion	28
	3.12. Final Report Creation	28

4	Data	30
	4.1. Profile Of The Company	30
	4.2. Data Gathering	41
	4.3. Determining the Criteria	42
	4.4. Mapping the SCOR model and AHP	47
	4.5. Processing the Analytical Hierarchy Process	53
5	Supply Chain Performance Evaluation	68
	5.1. Computing the Rate of Supply Chain Performance by	68
- 1	Local Weight	
	5.2. Computing the Rate of Supply Chain Performance by	70
	Global Weight	
0	5.3. Result Analysis	72
S	5.4. Suggestion for Improvement	73
6	Conclusion and Suggestion	74
	6.1. Conclusion	74
	6.2. Suggestion	74

LIST OF TABLE

Table 2.1.	The Previous Researches	6
Table 2.2.	Metrics of SCOR Model	12
Table 2.3.	SCOR in Business Process	17
Table 2.4.	Intensity of Importance in HAPP	18
Table 2.5.	Matric of Comparative Judgment	21
Table 2.6.	Random Index	23
Table 2.7.	Monitoring System of Performance Indicator	24
Table 4.1.	List of Products of PT. AML	31
Table 4.2.	Activities of the Stakeholders Based on SCOR model	40
Table 4.3.	Summarized Performance Based on the Interview	47
Table 4.4.	Key Performance Indicator in Supply Chain of PT. AML	50
Table 4.5.	Performance of Key Performance Indicators (KPI)	51
Table 4.6.	Score of Snorm DeBoer Equation	52
Table 4.7.	Comparative Judgment by the First expert	53
Table 4.8.	Comparative Judgment by the Second Expert	54
Table 4.9.	Geometric Means Metrics	54
Table 4.10.	Eigenvector	55
Table 4.11.	Eigenvalue	55
Table 4.12.	Eigenvalue	56
Table 4.13.	Comparative Judgment on Criteria Level	57
Table 4.14.	Comparative Judgment on Plan's Performance Attributes	58
Table 4.15.	Comparative Judgment on Source's Performance Attributes	58
Table 4.16.	Comparative Judgment on Make's Performance Attributes	59
Table 4.17.	Comparative Judgment on Deliver's Performance Attributes	59
Table 4.18.	Comparative Judgment on Return's Performance Attributes	59
Table 4.19.	Comparative Judgment on Reliability Indicators of Plan	60
	Process	
Table 4.20.	Comparative Judgment on Responsiveness Indicators of	60
	Plan Process	
Table 4.21.	Comparative Judgment on Cost Indicators of Plan Process	61
Table 4.22.	Comparative Judgment on Cost Indicators of Source	61
	Process	

Table 4.23.	Comparative Judgment on Reliability Indicators of Make	
	Process	
Table 4.24.	Comparative Judgment on Reliability Indicators of Deliver	62
	Process	
Table 4.25.	Comparative Judgment on Responsiveness Indicators of	62
	Deliver Process	
Table 4.26.	Weight of Elements	63
Table 4.27.	Global Weight of Performance Attributes of Plan Criteria	64
Table 4.28.	Global Weight of Performance Attributes of Source Criteria	65
Table 4.29.	Global Weight of Performance Attributes of Make Criteria	65
Table 4.30.	Global Weight of Performance Attributes of Deliver Criteria	66
Table 4.31.	Global Weight of Performance Attributes of Return Criteria	66
Table 4.32.	Global Weight of Elements	67
Table 5.1.	Final Score of Key Performance Indicator	68
Table 5.2.	Final Score for Dimension Level	69
Table 5.3.	Final Score of Supply Chain performance By Local Weight	70
Table 5.4.	Final Score of Supply Chain by Global Weight	71
Table 5.5.	Result of Supply Chain Performance Evaluation	72

LIST OF FIGURE

Figure 2.1	Flow of Supply Chain	8
Figure 2.2	Supply Chain	9
Figure 2.3	Higrarchy in AHD	20
Figure 2 2	Ligrarehy in ALID	

LIST OF APPENDIX

APPENDIX 1 QUESTIONNAIRE OF JUDGMENT BY EXPERTS

APPENDIX 2 RESULT OF INTERVIEW

APPENDIX 3 SCORING OF KEY PERFORMANCE INDICATORS

APPENDIX 4 RESULT OF AHP CALCULATION

APPENDIX 5 DATA BY THE COMPANY

ABSTRACT

Sea cucumber is one of vital marine products which is both medically and economically beneficial. PT. Alor Marina Lestari is a newly built private company that deals with collecting, managing and selling the sea cucumbers in Alor Island of East of Nusa Tenggara. Since the first day of operation, the company always faces complaints from its customers due to dissatisfaction of final products received. These complaints make the company financially lose money and lose the trust of the customers. These problems show the incapability of the supply chain system of the company to satisfy the customers and to give the right value of the final goods. Therefore, evaluation upon the supply chain system of the company is vitally important to find the main issue..

The evaluation of supply chain system is carried out by using combination of Supply Chain Operational Reference (SCOR) model and Analytical Hierarchy Process (AHP) method. SCOR model is used to determine the Key Performance Indicators (KPI) of the supply chain of the company, while AHP method is to assist in assessing the prioritization of contribution by performance indicators in the supply chain orderly.

As the result, it is found that the performance of the supply chain of the company is considered as average. Making process within the company according to SCOR model has a major contribution toward its supply chain performance. This indicates that the amount of dumped products and wrong packaging have the worst performance. Hence, the establishment a pond of breeding and work instruction are the alternatives to increase the rate of supply chain performance of the company.

Keywords: Sea cucumber, Supply Chain, Key Performance Indicator (KPI).