



DETERMINING INVENTORY POLICY TO REDUCE DAMAGED GOODS (Case Study at PT Sukanda Djaya)

FINAL REPORT

This is Submitted to Fulfill Prerequirement of Industrial Engineer of International S-1 Program



Written By: GERWIN SIDARTA 03 14 03733

INTERNATIONAL CLASS PROGRAM

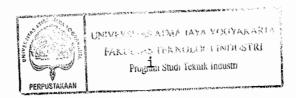
DEPARTMENT OF INDUSTRIAL ENGINEERING

FACULTY OF INDUSTRIAL TECHNOLOGY

ATMA JAYA YOGYAKARTA UNIVERSITY

YOGYAKARTA

2007



APPROVAL

Thesis of
International S-1 Program
Title:

DETERMINING INVENTORY POLICY TO REDUCE DAMAGED GOODS (Case Study at PT Sukanda Djaya)

Written by:
Gerwin Sidarta
(Student's Number: 03 14 03733)

Has been Examined and Approved Date: June 6, 2007

Advisor

Co Advisor

Y. Suharyanti, S.T., M.T.

V. Ariyono, S.T., M.T.

Examiners: Chairman,

Y. Suharyanti, \$.T., M.T.

Member

Member

Luddy Indra P, S.T., M.Sc. S. Setio Wigati, S.T., M.T.

Yogyakarta, June 6, 2007
Dean of Industrial Engineering Faculty
AtmanJaya Yogyakarta University

tmanJaya Yogyakarta University

Paudios Mudifihartono, S.T., M.T.

ACKNOWLEDGEMENT



- Failure(s) make us grow, so don't worry to make mistake(s)...
- Life without knowledge is nothing; Life with too much knowledge means stress. Be happy ^_^
- your time, you couldn't turn it back. Be wise...

Especially for:

- My Lord, Jesus Christ
- My lovely Mom and Dad
- MY brother and sister: Indra and Marta
- TIKI Batch 2003, success for you all...
- My Darling (Who is her? You know la. (^_^))

FOREWORD

Thanks to the LORD Jesus Christ that has guided my paths so that this final report could be completed.

This final report is one of the prerequisite to finish the undergraduate study program in Industrial Engineering Department, Industrial Technology Faculty, Atmajaya Yogyakarta University.

I am so grateful to many people who encouraged me to finish this final report and helped me along my research. On this opportunity, I would like to thanks:

- Mr. Paulus Mudjihartono, S.T., M.T, as the Dean of Industrial Technology Faculty, Atmajaya Yogyakarta University.
- Mr. Parama Kartika Dewa SP, S.T., M.T., as the Head of Industrial Engineering Department, Industrial Technology Faculty, Atmajaya Yogyakarta University.
- 3. Mr. Hadi Santono, S.T., M.T., as the Head of International Class of Industrial Engineering who leads us to the "right" way.
- 4. Mrs. Yosephine Suharyanti, S.T., M.T., as the first adviser, who had spent her time to give guidance, direction, inputs and correction in writing this final report.
- 5. Mr. V. Ariyono, S.T., M.T., as the second adviser, who had spent his time to give inputs, guidance and correction in writing this final report.
- 6. To Mr. Sulistyo from PT Sukanda Djaya, thank you for the gathering data help during the research.
- 7. To my beloved parents who always support and encouraged me to compile this final report.

- 8. To all of my family who had given me a lot of advise and encouraged me to finish this final report. I love you all.
- 10. To my friends: Arden, Ansell, Billy, Dody, Endro, Jimmy, Nino, Oke, Richo, Ana kwee, Betzy, Citra, and Prinzza who fight together with me to sail the Industrial Engineering 4 years together. Go 2003...!!!

The writer realize that this final report still has a lot of imperfections, so any criticize and inputs are really expected. Eventually, the analyst hopes that this final report can be useful and can be developed in a further research.

Yogyakarta, May 2007

The writer

CONTENTS

COVER	Ĺ
AUTHORIZATION	ii
ACKNOWLEDGEMENT	iii
FOREWORD	iv
CONTENT	
ABSTRACT	viii
CHAPTER 1 INTRODUCTION	
1.1. Background	1
1.2. Problem Statement	3
1.3. Research Purpose	
1.4. Scope of Research	
1.5. Research Methodology	
1.6. Report Outline	5
CHAPTER 2 LITERATURE REVIEW	7
CHAPTER 3 BASIC THEORY	
3.1. Inventory	9
3.1.1. The Role of Inventory	
3.1.2. Inventory Planning and Control	10
3.1.3. Classification of Stock	11
3.1.4. Costs of Inventory	12
3.1.5. Factors Affecting Inventory	13
3.2. Inventory Model	14
3.2.1. Independent Demand Inventory Model	
3.2.2. Dependent Demand Inventory Model	16
3.3. Simulation	17

3.3.1. Simulation Steps	18
3.3.2. Simulation Advantages	20
3.3.3. Simulation Disadvantages	
3.4. Microsoft Windows Excel	
CHAPTER 4 COMPANY PROFILE AND DATA	
4.1. Company Profile	22
4.2. Inventory Data	23
4.2.1. Types of Warehouse	
4.2.2. Inventory Costs in PT Sukanda Djaya	24
4.2.3. Damaged Goods Problem	25
4.2.4. Critical Product	26
4.2.5. Product Movement Data	28
4.2.6. Data from Interview Result	
CHAPTER 5 DATA ANALYSIS AND DISCUSSION	
5.1. Problem Illustration	30
5.2. Simulation Processes	32
5.3. The 2 Years Demand Recapitulation	
5.4. The EOQ and ROP Calculation	33
5.5. Running Simulation Using Excel Program	34
5.6. The Simulation Result Analysis	37
CHAPTER 6 CONCLUSION	39

REFERENCES

APPENDIX

ABSTRACT

In a company, there are so many things to be considered. One of them is the inventory problem. The company must consider about this problem in order to reduce inventory cost such as set up cost, holding cost and damaged goods cost, so is the expense of the company decrease, surely the nett profit will increase.

In PT Sukanda Djaya, the main problem is the amount of the damaged goods cost. It's cost more than Rp 200,000,000.00 annually. This because there are some products that have very short time expire date. So the writer tries to propose a new inventory policy in order to reduce this cost.

Writer found that the biggest mistake taken by this company is the company always stock too much (it's because the company doesn't want dissatisfy the customers by stock out case). In this research, writer determines the order quantity and the reorder point of each product, and then simulates it by Microsoft Excel program to compare the result with the current policy.

After simulation, writer concludes that the proposed policy is better because it reduces more than 50% damaged goods in the first month of applying it. Writer is sure that the damaged goods will decrease again in next month, because when company applies the proposed policy in the first month the result is still affected by the current policy.