CHAPTER I INTRODUCTION

I.1 Background

PT. Grow Commerce Indonesia is a technology-driven commerce company that acquires, operates, and grow great brands at scale. Backed by renowned VCs in Asia, Grow Commerce has extensive track records in scaling brands to their utmost potential. Grow Commerce are on a constant lookout for great brands – offering brand owners a way to sell their business at attractive valuations and with flexible deal structures, allowing them to cash out and achieve their desired financial goals sooner.

PT. Grow Commerce Indonesia helps the partner brands in digital marketing, marketing development, and even supply chain management. one of the activities of the supply chain management processes helped by Grow Commerce is the warehousing process. The products that are stored in the warehouses are fashion items, such as clothing, shoes, bags, accessories, etc. The products that are sold to the customers are stored in the respective partner brands warehouse and in Grow Commerce's warehouse. Grow Commerce will store the products of partner brands in their warehouse to be stocked or sold.

However, in recent years, Grow Commerce's warehouse always has some overstock of products left each year and the overstock is increasing each year. The number of products being stored in the warehouse is too much compared to the number of products being transported away from the warehouse (sold). The data of comparison between the inbound and outbound of products in Grow Commerce's warehouse can be seen in figure I.1.

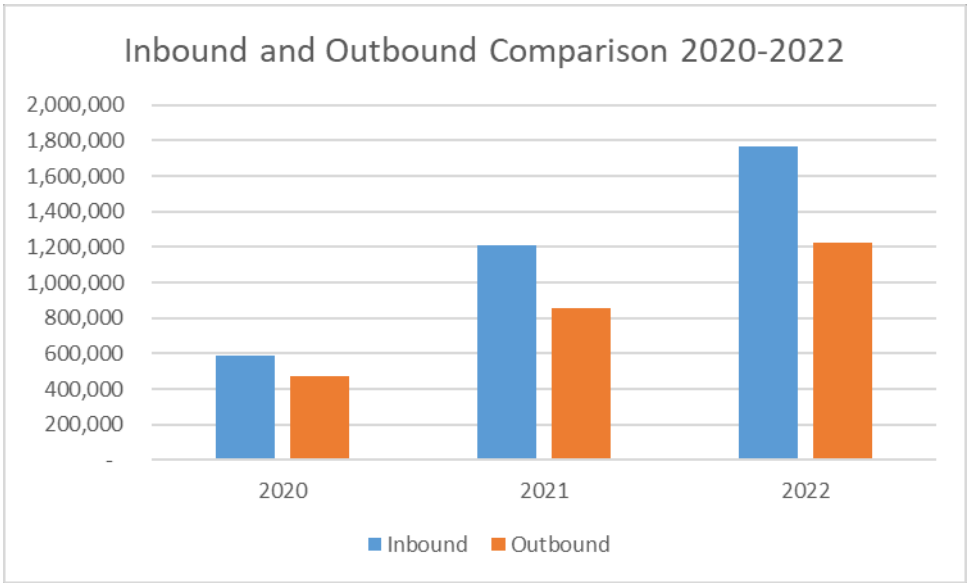

Figure I.1 Products Inbound and Outbound Comparison

(Source: PT. Grow Commerce Indonesia)

In 2020, the number of inbound products is 585.904 (55%) while the number of outbound products is 470.927 (45%), with a total product of 1.056.831 (100%). In 2021, the number of inbound products is 1.209.794 (59%) while the number of outbound products is 853.301 (41%), with a total product of 2.063.095 (100%). In 2022, the number of inbound products is 1.209.794 (59%) while the number of outbound products is 1.226.661 (41%), with a total product of 2.994.725 (100%). We can conclude that there is an overstock of products in the warehouse.

The highest gap of products is in 2022. The data shows the overall products, which consists of shoes, clothing, bags, accessories, home products, lingerie, prayer equipment, jilbab, and outerwear. These products make up the total of products that are transported in and out of Grow Commerce's warehouse. The details of inbound and outbound of products from each month of 2022 up to September can be seen in figure I.2.

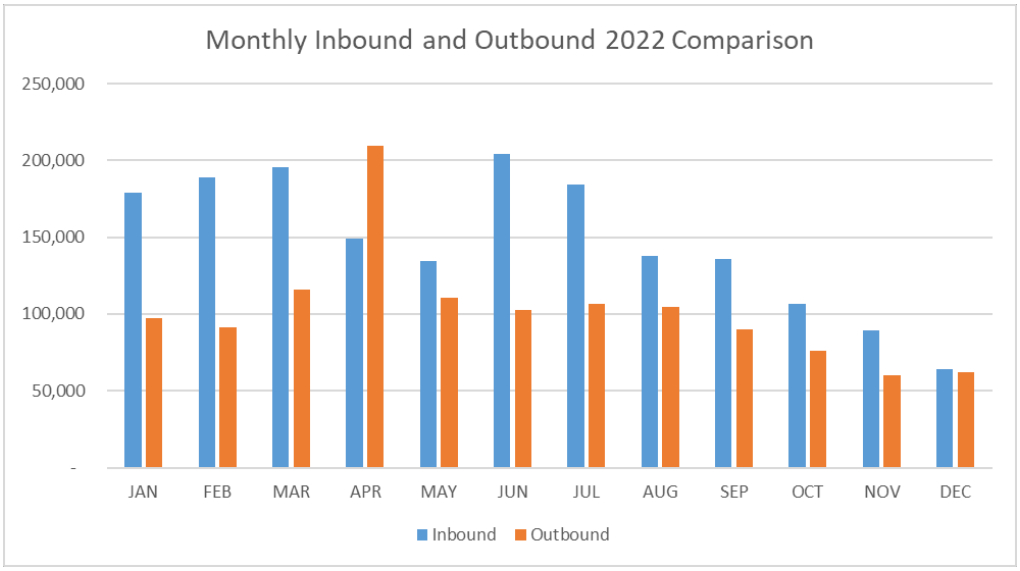

Figure I.2 Monthly Product Inbound & Outbound Comparison 2022

(Source: PT. Grow Commerce Indonesia)

From the figure, we can conclude that for every month of 2022, the inbound of products is always greater than the outbound of products except for April. The overstock that is happening can inflict many losses for the company such as the extra inventory cost and the product which stayed in the warehouse for too long will lose its value. However, if understock were to happen instead, Grow Commerce would still be at a loss due to the supply of products not being able to match the demand. The occurrence of overstock is concerning because the number of products the warehouse can hold are limited and if the number products that are able to be stocked decrease, the profit that can be obtained by Grow Commerce will also decrease due to the outdated product that will sell for less than the original price will be hard to sell due to the continuously changing trends and models of fashion. Grow Commerce will also have to find other ways to stock their products such as obtaining another warehouse to store their products which will lead to spending more budget. To avoid further overstocking, the company needs to establish a method of forecasting that can help them estimate the optimum number of products they should stock to efficiently utilize the space in the warehouse.

The occurrence of overstock each month of 2022 can be caused by many factors within or outside of the warehouse. Interest of buyers, scheduling, human

resources, etc. The possible causes of overstock in Grow Commerce's warehouse are listed and described in the fishbone diagram below.

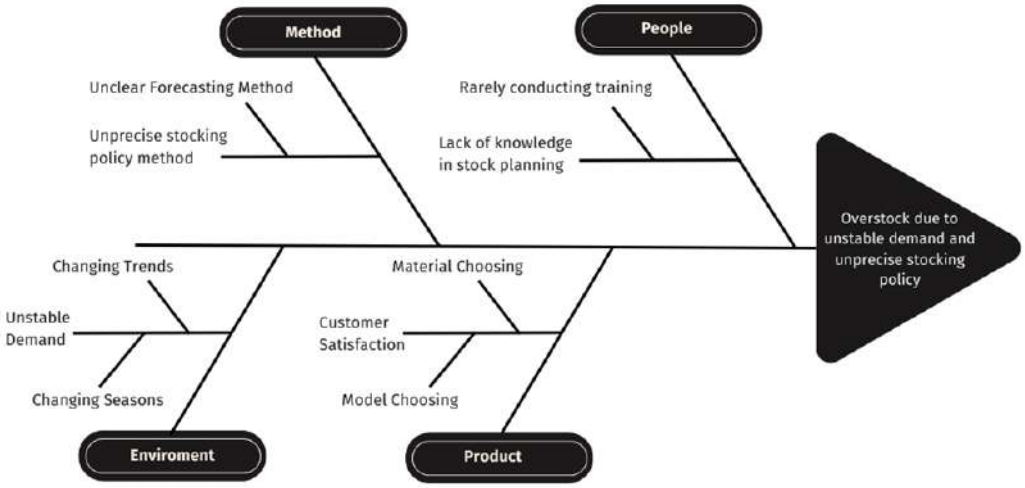

Figure I.3 Fishbone Diagram of Possible Causes of Overstock

The main factors of the overstock are method, people, environment, and product. In the method factor, the method mentioned refers to the policy of the warehouse. It is possible that Grow Commerce's warehouse is not applying any sort of stocking policy regarding the number of products that can be stored within the warehouse. This means that PT. Grow Commerce is not using any kind of forecasting method to estimate the number of optimum stocks that should be stocked to avoid overstocking or understocking and achieving the maximum profit. In the people factor, the people in this case are the workers who manage the warehouse. It is possible that overstocking happens due to the lack of knowledge in stock planning. The lack of knowledge can be caused by the expertise of the worker or the lack of training in the warehousing management process. In the environment factor, the environment in this case is the demand (popularity) of the products. The demand for products is always uncertain, especially in the fashion industry. The trend and season will influence the number of demands from the customers. In the product factor, regardless of marketing methods, the customer will also have their own taste in fashion products. It is possible that the material and or model chosen is not up to the customer's liking. The customer's taste will influence the sales of products greatly.

From the root cause analysis using the fishbone diagram above, this Final Assignment Proposal will focus on the method factor. This research will help in establishing a method of stocking policy by establishing a forecasting method by analyzing the trend of past sales which will be used to figure out the optimum number of products that should be stocked to avoid understocking or overstocking to optimize profit using the Newsvendor Model.

I.2 Alternative Solutions

The problem faced by PT. Grow Commerce Indonesia is a complex problem which will be discussed in this Final Assignment. It is complex due to it having many possible causes and therefore, many possible solutions as well. Alternative solutions can be designed by identifying and analyzing the possible causes. There are many helping tool that can be used to identify the main causes. The author uses fishbone diagram from the background subchapter. The method and solution for each different cause will also be different, depending on the cause and factors. The list of possible causes and alternative solutions are listed below on table I.1.

Table I.1 List of Alternative Solutions

No	Root Cause	Potential Solution(s)
1	Lack of knowledge in stock planning	• Hiring stock planning expert services • Hiring workers with stock planning expertise • Stock planning training
2	Changing Trends	• Trend research • Buying season pattern researcη • Customer's Feedback analysis • Material and model benchmarking and improving
3	Changing Seasons	
4	Material & Model Choosing	
5	Unprecise stocking policy method	• Establish the warehousing policy • Evaluation of warehousing system • Improve the warehousing management • Forecasting method to improve stocking policy

I.3 Problem Formulation

Based on the background above, the problems to be discussed this Final Assignment Proposal is what is the optimum amount of order quantity for PT. Grow Commerce Indonesia to achieve the maximum profit?

I.4 Final Assigment Objective

The objectives of this Final Assignment Proposal are:

1. To estimate the optimum amount of products in PT. Grow Commerce Indonesia's warehouse.
2. To establish a forecasting method to estimate the optimal amount of stock PT. Grow Commerce should have in the warehouse.

I.5 Final Assignment Benefit

This Final Assignment Proposal is hoped to be able to give benefits to the involved parties, which are:

1. PT. Grow Commerce Indonesia is hoped to be able to reduce or eliminate the number of overstock each year.
2. Improve the warehouse management process of PT. Grow Commerce Indonesia.

I.6 Writing Systematics

The systematics of writing in this Final Project is as follows:

CHAPTER I Preliminary

This chapter will explain and describe the background, formulation of problem, and objective of this Final Assignment Proposal starting from the object, PT. Grow Commerce Indonesia and the problem currently happening within the company as well the method used and cause of problem analysis.

CHAPTER II Theoretical Based

This chapter will explain the theoretical basis used for this Final Assignment Proposal to solve the problems mentioned, which is the Newsvendor Model. The theories are taken from references such as books and research journals which are related to the topic and are mentioned in the bibliography.

CHAPTER III Research Methodology

This chapter will explain the steps in using the Newsvendor Model. This chapter will also explain the design systematics, scope, and assumptions, and the timeline for this Final Assignment.

CHAPTER IV Integrated System Design

This chapter will explain the process of data collecting and processing which will be analyzed. The data collecting and processing will include data analysis and processing to produce necessary data that will be used in the improvement formulation.

CHAPTER V Analysis and Evaluation of System Design Results

This chapter will explain the analysis of the data collected and processed before. The analysis will be used to design an improvement solution to the problem mentioned. The improvement is given as a consideration for the solution of the overstock of products faced by PT. Grow Commerce Indonesia.

CHAPTER VI Conclusion and Suggestion

This chapter will explain the conclusion of the data processing and analysis as well as the improvement designed. This chapter also includes suggestions for future projects.