

CHAPTER 1

INTRODUCTION

1.1. Background

This research was conducted in a furniture manufacturer in Jepara. This company is considered as one of the biggest teak wood furniture manufacturers in Jepara. This company has successfully leveraged this legacy to produce high-quality, handmade teak wood furniture and art pieces. The status of this company's ownership is a family-owned company. This company has several manufacturing and warehouse sites. The main site is owned by Mr. Haji Manto and the others are owned and managed by his children. Utilising sustainable materials, especially teak wood, the company combines the original craftsmanship with modern production methods to bring Jepara wood art to international markets. Figure 1.1 shows the company entrance.



Figure 1.1. The Furniture Manufacturer Entrance

Various items such as furniture, decorative pieces, and custom wood art are manufactured in this company and ready to be ordered. Finished goods are stored in a warehouse next to the production floor, waiting for the shipping schedule. A finished goods warehouse with a total area of approximately 1,332 m² is used in this company to store hundreds of units of their products monthly.

The company is a significant exporter, shipping goods to North America, Europe, and Asia. Most of the customers are retailers who sell the furniture to the end customer. The warehouse staff oversees all packaging, labeling, and export paperwork for commodities going overseas, and they are meticulously wrapped to endure lengthy transportation times. The ability of managing large volumes of

orders effectively while upholding high standards of quality enables the company success in the international market.

Domestically, the warehouse oversees distribution throughout Indonesia, making sure that deliveries are made on schedule to keep customers happy. Orders are fulfilled promptly and precisely by the furniture manufacturer thanks to a well-structured inventory and logistics system. Additionally, the warehouse is essential to the management of raw material and finished goods inventories.

Warehouse of this company is responsible for receiving, picking up, and delivering of product. Recently, the furniture manufacturer has problem which is difficulty with product pickup. These difficulties result in wasting time and bring more cost during product pickup and leading to a delayed loading process and decreasing profit.

The finished goods warehouse of the furniture manufacturer covers four main warehouse activities. From the production floor, the finished goods will be received, stored, packed, and shipped by the finished goods warehouse. By far, a problem often happens in the last activity of the warehouse. Most of the shipment is not done on time according to the schedule, which might lead to unnecessary additional costs.

1.2. Problem Exploration

The problem exploration is done by direct observation and interviews with several stakeholders. The stakeholders involved are the owner of this furniture manufacturer company and the warehouse coordinator. Based on the interview with the owner, this company faces several challenges with its current warehouse operations, affecting warehouse productivity and profitability. As a company that handles a broad range of finished products, proper storage management is important to make the distribution process run smoothly. Until now, the warehouse stores anything that comes out from the production floor, utilising any available space in the warehouse with a dedicated storage approach; any other factors have not been considered yet, such as product flow activity. Sometimes, when the warehouse level is high, the warehouse seems so full and disorganized. Figure 1.2 shows the company's warehouse appearance.



Figure 1.2. Warehouse Appearance

Based on observations, there are four main activities in the company's finished goods warehouse: Receiving, Storing, Packing, and Shipping. Every product goes through those activities in respectively. However, a company is a unit of various interrelated components, therefore, to to analyze more about what happened in the warehouse, warehouse business process mapping is needed. The warehouse product flow activity is shown in the Figure 1.3.

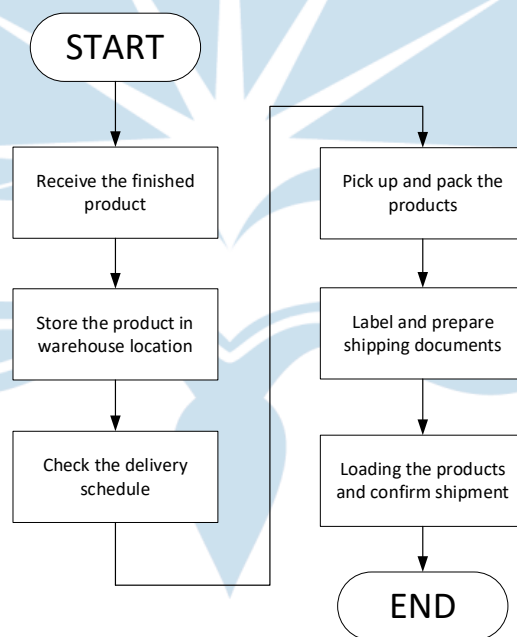


Figure 1.3. Warehouse Product Flow Activity

The finished product is received by the warehouse before being stored. After the product has been stored, the owner will confirm the shipment schedule based on the customer's order. The time before the products going to be shipped, the warehouse staff will pick them up for the packing and labelling process. After all is done, the product is being loaded into the trucks to be distributed.

According to the interview with the warehouse coordinator, this company faces a problem in the shipment activity. Most of the shipment process ended up delayed for quite a long time. Based on the data obtained from the warehouse coordinator, the truck is delayed to board for about 30 minutes on average. The delayed time can be seen by the picking up time compared to the order pick-up available time, which has already been settled by the company. The data is provided in Table 1.1.

Table 1.1. Shipment Data Recap of The Furniture Manufacturer in Jepara

Nr.	Load (units)	Product picking-up time (minutes)	Average time per unit (minutes)	Order Pick-Up available time (minutes)	Status
1	15	48	3.2	60	On time
2	18	63	3.5	60	Late
3	15	63	4.2	60	Late
4	23	144.9	6.3	60	Late
5	21	73.5	3.5	40	Late
6	12	38.4	3.2	60	On time
7	10	37	3.7	60	On time
8	40	128	3.2	60	Late
9	20	44	2.2	40	Late
10	18	93.6	5.2	60	Late
11	5	31.5	6.3	40	On time
12	35	87.5	2.5	60	Late
13	20	44	2.2	40	Late
14	18	59.4	3.3	40	Late
15	10	66	6.6	60	Late
16	20	124	6.2	60	Late
17	14	47.6	3.4	60	On time
18	20	100	5.0	60	Late
19	10	60	6.0	60	On time
20	30	96	3.2	60	Late
Average		72.47	4.15	55	

This issue needs more concern since it might cause further problems, leading to additional costs and expenses, since the truck will go to another company's warehouse site to pick up their products before being delivered to the harbour. Although this issue rarely has a serious impact on the company's profitability, further analysis and improvement should be conducted to prevent future risk.

The customer is also considered as an external stakeholder related to the issue. Based on the information from the owner, some customers have complained and asked for compensation if the product received does not meet their expectations, for example, if there are damaged products, the customer often asks for a price cut or replacement. The same things could also happen if they do not receive the product on time. This kind of phenomenon will bring profit loss to the company since additional expenses are required. Therefore, the stakeholders and their needs can be compiled in Table 1.2.

Table 1.2. Stakeholders' Issues and Needs

Stakeholders	Issue	Needs
Company owner	The delayed shipment is considered a problem for the company, as it could bring losses.	The shipment is on time without any delay in the process.
Warehouse Coordinator	The product picking process is wasting a lot of time. During the picking process, the product quality need to be maintained.	Faster product picking up time while maintaining the product quality in the whole process.
Customer	Damaged product and the product was not received on time.	Good quality of product received and one time receipt.

1.3. Problem Statement

The furniture manufacturer's problem is the delay in the shipping process. This issue might lead to delays in overseas shipping and bring additional costs and expenses to the company.

1.4. Research Objective

The objective of this research is to design a solution that can solve the shipping problem in the company's warehouse in such a way that reduces the picking up process time by up to 40%, and minimizes the frequency of delayed shipping. The time reduction target is enough to reduce the average picking up time to meet the average pick up available time given by the company.

1.5. Scope and Limitation

The research aims to enhance this company's finished goods warehouse performance, with a focus on practicality and feasibility:

- a. The stakeholders, who are the owner and warehouse manager of the furniture manufacturer in Jepara.
- b. The observation started on 28th September 2024 and lasted until 5th July 2025 (the warehouse product flow and type quantity could have changed after the observation period).
- c. The monthly production output data of the company.
- d. The type of finished product, such as rectangle board A type, rectangle board B type, rectangle board C type, oval board, wooden tables, and wooden chairs.
- e. The warehouse's land area and building area, along with the fixed entrance and docking location are fixed.