

CHAPTER 1

INTRODUCTION

1.1. Background

In the modern era, there are various business models that can provide opportunities for anyone in any type of industry. One of the most growing industries especially in West Borneo is the palm fruit oil industry. The industry is a very common type of business that one would run in Borneo. According to *Badan Pusat Statistik Kalimantan Barat*, the total of palm field area in 2018 was 564.338 acres and increasing up to 746.602 acres in 2019. This number shows how much of the palm farm is covering the Borneo island. There are several parties involved in the industry itself and each of them has its own role and they simultaneously supporting each other.

Wherein a ramp is a party that functions to bridge the farmer and the company that buys the product. The role of a ramp is to find, purchase, store, and sell crude palm oil fruit for the company that processes the fruit into various products. A ramp is a very important part of the industry because of its role to provide both the farmer and the company a supplier and manufacturer relationship. A firm that runs a ramp business needs to be able to find the right companies to pay them the fee in an appropriate amount and farmers that provide them with high-quality product.

CV (*Comanditaire Venootschap*) Dwi Adidaya Agomas is one of the start-up ramp that is located in Pontianak, West Borneo that just started to run the business at the beginning of 2020. As a start-up company, the company experiences lots of trials and errors are to establish properly. The company later has to be able to compete with other ramps that are already well-established. Currently, CV Dwi Adidaya Agomas has a very limited number of farmers to purchase from. There are only two farmers as the source of their oil palm fruit supplier. Because the company has just started, it only has one company as the party to purchases the palm fruit. Both the farmers and the purchasing company offer very little space for the company to move in terms of operating, resulting in the company having only one main source of income from the purchasing company in a sub-district called Sanggau Ledo. The farmers themselves come from a sub-district called Samalantan which takes approximately three hours car trip with a total distance of 96.6 km

The company has only three employees and two owners that manage every operation in the company. The company hires outsourced staff, such as the truck driver that is needed to transport the oil palm fruit from the farmers and to the purchasing company. The company does not own any trucks, so it needs to rent the truck as well as the driver. The cost of renting both a truck and a driver varies but each truck capacity can carry up to eight tons. In every purchase made from the farmers, usually the time needed to transport the goods from the company to the purchasing company is uncertain. Some factors that affect the transport duration of the goods are depending on the quantity of the goods requested. For example, if the oil palm fruit requested from the company is 900kg, but the ramp only purchased 500kg on the first day and purchase another 400kg on the next day, then the goods can only be transported on the third day. Whereas if the goods are stored in the farmer's warehouse and the weight will shrink in the count of days. This makes palm fruit a unique commodity that needs very quick transport from the farmers to the company in order to avoid weight loss. The loss of weight is unpredictable since there are various factors such as the time of harvesting, the quality, and others. The company as a start-up makes a lot of trials and errors because the owners who act as managers do not have the capability in managing these kinds of problems in the industry.

For the company to compete with other well-established companies, good managerial skills are needed. Especially, among others in managing the expenses of the company. In the process of establishing a company, a clear flow of information is a very crucial part. Every operation within a company needs a certain parameter to ensure the whole process in the company is running in line with the company's vision and mission. In the current situation, the company's decision in spending their funds is not controlled by any parameters except the availability of the funds itself. This causes the company at some point in time to have insufficient funds to continue its operation. Finally, the owner needs to loan money from the bank to cover the lack of funds and to continue the operations that are currently running in the company. Another impact that occurs caused by these uncontrolled expenditures of funds is that the company delays the due date to pay the employee their salary. Consequently, these cases will affect the cash flow of the company.

In Industrial Engineering, there are various methods that can help solve these problems. By using the principles of Industrial Engineering, an analysis will be conducted on the cash flow of the company in the hope to help the company to

solve its problem. Therefore, research is conducted to develop a decision support system that can help the company to make decisions regarding the utilization of its funds.

1.2. Problem Formulation

Based on the background in the previous section, the main issue that can be found is that the company is often running out of funds. This is caused by the lack of insight by the owner on how to manage the funds in the crude palm oil industry. Another cause of this problem is that the company hardly used the documented data of their purchases and sales records. Since ramp is the type of business where the cash flow of the company can change dynamically fast in a short amount of time, the company needs to be able to prepare the funds for various operations in their daily activity. Therefore, the purpose of this research is to solve the problem mentioned above by developing a tool that can help the company in making decision regarding the amount of money needed to be prepared for operational activity such as purchasing the goods from the farmer.

1.3. Research Objectives

Based on the problem formulation, the objective of this research is to develop a decision support system to provide useful insights that can help the company to make the decision regarding the amount of money needed to be prepared for operational activity such as purchasing the goods from the farmer.

1.4. Scope and Limitation

To better focus the research on its objectives, the scope, and limitations of the research are defined as below.

- a. the observation is not conducted physically;
- b. the interview is conducted online;
- c. there exist no storage information regarding the goods;
- d. the analysis is solely based on the cash flow data provided by the company's owner.