

CHAPTER I

INTRODUCTION

This chapter contains about background, problem formulation, research objective, research scope, and outline of final report.

1.1 Background

Rapid technological changes enabled in increasing the levels of business competition. Competitive business strategies are required to address the challenges of business competition. Technology has advanced over last few decades, and the phenomenon of digitalization is becoming a reality in all industries, particularly manufacturing. Manufacturing companies in all major industries are facing significant challenges in competing and succeeding on the market in this ever-changing economy, particularly in terms of technological development. Even established corporations with a long history of success have been losing value due to their inability to change (Henderson & Clark, 1990). In fact, many companies have started a major transformational change by trying to integrate digital technologies into their businesses (Tekic & Koroteev, 2019). Several technologies have emerged that are altering traditional ways of working to become digitalize in many function of a company to face the competition.

This high competition requires a company having an effective and efficient management system by improving performance, such as the business model from traditional activities to digital transformation. Every company requires a competitive advantage in order to stay in business. A competitive advantage can be obtained through proper strategic planning and digital transformation. The key to a strategy's success is in improving activities that can provide value added activity over competitors. The alignment of strategy and activity can not only provide a competitive advantage but also ensure strategy's long-term viability (Porter, 1985). The level of competition can be seen from the

percentage of companies or businesses with macro industry scale in Indonesia which are dominated by wholesale and retail trade, repair and maintenance of cars and motorcycles at 42.76 percent, and manufacturing industry activities at 10.52 percent (BPS, 2019). Manufacturing industry is ranked second in conducting business competition in Indonesia. There are lots of companies in manufacture industry sector.

Table 1.1 Total Company by Manufacture Sector in Indonesia (BPS, 2019)

No	Type of Industry	Total Company in Indonesia (Unit)		
		2017	2018	2019
1	Food and Beverage	8156	7358	7415
2	Apparel Clothing	2972	2614	2512
3	Textile	2738	2474	2387
4	Wood	1507	1257	1270
5	Leather	926	879	914
6	Tobacco	706	575	582
7	Pharmaceutical	378	352	338

Based on **Table 1.1** shows that food and beverage industry or commonly known as FMCG is the highest total company of manufacture sector in Indonesia at past 3 years. This high total company is most likely to be more competitive in food and beverage industry or FMCG. Fast-Moving Consumer Goods (FMCG) such as food, beverage, and also personal care goods are defined as “nondurable retail products” that typically have three characteristics are cheap, bought frequently, and have a short service life (Kuzmina et al., 2019). FMCG corporations are trying to meet the changing taste and high demand from customers who are expecting healthier options, low-calorie products, and more sustainable packaging.

One of FMCG companies in Indonesia is Danone Group that produces many kinds of products, such as water and bottled water, baby food, dietary supplements, etc. PT X was a company that incorporated with Danone Group. As one of the subsidiaries, PT X produces bottled water named “AQUA”. There are

some types of bottled water produced by PT X, namely AQUA 220 mL, AQUA 600 mL, AQUA 1500 mL, and AQUA Gallon.

A company is not only responsible for making products that meet the needs of its customers, but it is also a deciding factor in your success by developing supply chain strategies to effectively reach out to these customer segments before your competitors. In today's world, intense competition encourages businesses to continuously improve their performance. According to the research by McKinsey, companies investing in digital solutions are expecting to deliver annual growth and cost efficiencies of 5–10% or more in the next 3–5 years (Catlin, et al., 2015). Digitalization benefits are highly expected to improve the performance of a company.

Supply chain digitalization is defined as a customer-centric platform model that captures and maximizes use of real-time data from multiple sources. It enables demand stimulation, matching, sensing, and management to improve performance while reducing risk (Palmisano, 2017). Because of technological developments, the complexity, and dynamics of today's competitive market, digitalization of supply chain phenomenon has recently emerged. Researchers have investigated the competitive advantage of shifting from a traditional to a digital supply chain. Some of the most obvious advantages include the real-time integration of the physical supply chain with digital technology to optimize organizational performance through improved supply chain visibility, responsiveness, robustness, and resilience (Gunasekaran et al, 2017). According to Queiroz et al (2018) The digital supply network can improve supply chain planning accuracy and distribution operations by establishing network visibility throughout value chain. To accomplish this, a link between digital technology and supply chain function must be established. As time passes, the adoption of the digital business model will take into account supply chain management changes (Makris et al, 2019).

Currently, PT X was focused on implementing digitalization of supply chain planning to improve supply chain performance more efficient and effective and ready to compete by today. Supply chain management system that has been implemented in PT X is essentially synchronize and coordinate all of whole activity that related to material or product from supplier to customer. PT X has 22 plants across Indonesia to resource water supply and collaborated with any supplier to fulfill material requirement. PT X also has many distributors commonly known as depo in domestic across Indonesia to deliver bottled water.

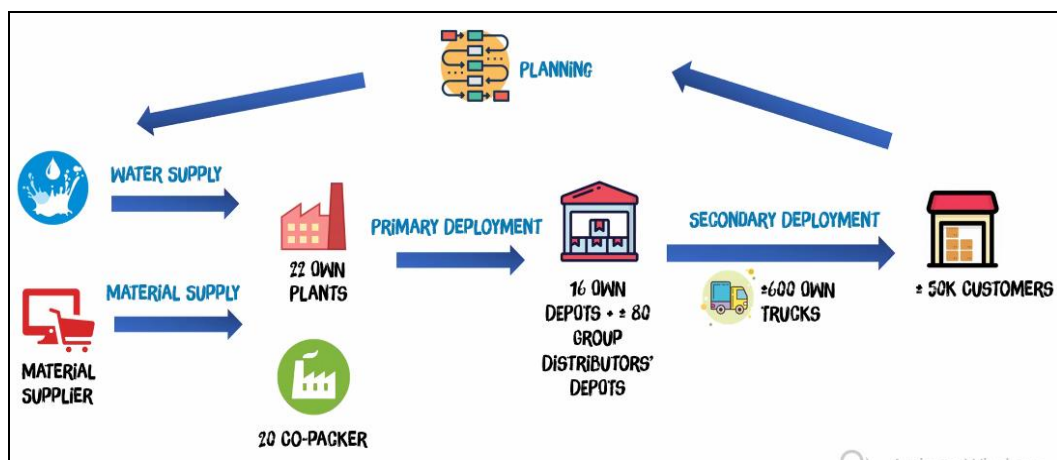


Figure 1.1. Flow Process Supply Chain in PT X

PT X has many stakeholders that have to coordinate every day to supply materials and deliver products on time and right fulfillment. Due to the problem, PT X is implementing an integrated system in supply chain management from supplier to distributor and digitalized process to improve the performance by reduce workload, reduce human error, and capable to fast-analyze. The key to effective supply chain management is having a shared planning and execution process combined with the right business analytics that gets everyone in sync. PT X was improving supply chain performance by conducting digital transformation of end-to-end material planning process. After interviewing with company staff, especially in Supply Chain Planning Function, PT X has to identify the indicator for measuring digitalization supply chain to succeed the performance. There are several key considerations in transforming a supply chain into a digital Supply Chain. Digital supply chain will work across all elements of demand stack

including demand stimulation, demand management, demand sensing, and demand matching. This requires an increase in internal collaboration with key supply chain partners such as suppliers and customers. (Palmisano, 2017). Therefore, this study aims to identify the indicator that affects value adds of digitalization on supply chain performance. This study also contributes with an evaluation framework analysis of each KPI based on priority weight for future supply chain performance.

There are many methods or frameworks that can be used to design key performance indicator. Based on several journals as literature review, the method that can be used to evaluate and measure company's digitalization supply chain performance is Supply Chain Operations Reference (SCOR). SCOR model focused on SCM from the perspective of operational processes that include customer interactions, physical transactions, and market interactions (Zhou *et al.*, 2011). According to supply chain Council's website, although SCOR method is simple and easy to use, the method is assumed to be an effective and strong tool for describing, analyzing, and improving supply chain. There are several benefits for the company after implementing SCOR method to measure supply chain performance such as faster cycle times, less inventories, and better access to important customer information (Zhou *et al.*, 2011). Supply Chain Operation Reference (SCOR) is a method that will be used to measure the performance of digitalization supply chain in PT X by bringing all aspects related to supply chain activity. It will be obtained a result that will provide an initial benchmark of digitalization supply chain performance direction to the goals of company and provide benefits for company, supplier, and consumer. Therefore, it is important to conduct research that develop a digitalization supply chain measurement framework by using indicators that are most appropriate to the company's strategic conditions and objectives with the purpose to improve company's current capabilities and determine the priority weight value of indicators by using Analytical Hierarchy Process (AHP) calculation.

1.2 Problem Formulation

Based on the background above, the problem formulations are as follows:

1. What are relevant Key Performance Indicators of digitalization supply chain in PT X?
2. What is the priorities weight of each Key Performance Indicator (KPI) based on scoring calculation?

1.3 Research Objective

The objectives of this research are as follows:

1. To identify Key Performance Indicator (KPI) of digitalization supply chain in PT X.
2. Setting the priority weight level of each KPI based on the result scoring calculation and evaluation framework to support the company in measuring supply chain performance.

1.4 Research Scope

The problem scopes of this research are as follows:

1. The assessment of KPI priorities is based on interviews with expert related Supply Chain Planning Function and condition.
2. Analyzing KPI perspective using Supply Chain Operation Reference (SCOR) model approach.
3. The research is only conducted in Supply Chain Planning Function at PT X about digitalization developing process.

1.5 Outline of Report

The outline of this final project is consists of six chapters that detailed are as follow:

CHAPTER I INTRODUCTION

This chapter contains about the background of this research, problem formulation, research objective, research scope and outline of the report.

CHAPTER II LITERATURE REVIEW

This chapter contains about theories study that related to this research consists of Key Performance Indicator (KPI), Digitalization, Supply Chain Management, Digitalization of Supply Chain, Supply Chain Performance Measurement, Supply Chain Operations Reference (SCOR) Model, and Analytic Hierarchy Process (AHP) Method.

CHAPTER III RESEARCH METHODOLOGY

This chapter contains about the methodology used on this research that consists of preliminary study, research objective, method selection, data collection, data processing, analysis and conclusion.

CHAPTER IV DATA PROCESSING

This chapter contains data collection and data processing using Analytical Hierarchy Process (AHP) and Supply Chain Operation Reference (SCOR) Model perspective to get the result of this research for being analyzed.

CHAPTER V DISCUSSION

This chapter contains about analysis based on the result of data processing carried out in previous chapter. This chapter will also conduct a suggestion for measuring supply chain digitalization performance by designing Key Performance Indicator (KPI) related to the company's goals.

CHAPTER VI CONCLUSION

This chapter contains about conclusion and recommendation for further research based on based on analyzing the result.

