

SUPPLY CHAIN MANAGEMENT AND PERFORMANCE AT CASE STUDY COMPANY

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May 2018

This dissertation is submitted to

Universiti Sains Malaysia

As partial of the requirement to graduate with honours degree in

BACHELOR OF ENGINEERING

(MANUFACTURING ENGINEERING WITH MANAGEMENT)



School of Mechanical Engineering

Engineering Campus

Universiti Sains Malaysia

DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed (AMIRUL ASRAF BIN AZMI)

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Statement 1

This article is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by giving explicit references.

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This thesis has been submitted as partial fulfilment of the requirements for the final year project to the respective academic supervisor.

Signed (ASSOC. PROF DATIN DR. NORIZAH MOHAMAD)

Date

ACKNOWLEDGEMENT

“In the name of Allah, the Most Gracious and Most Merciful”

My first and foremost thanks and gratitude towards Allah for giving me the strength, courage to pursue my studies and conducting this research study. I also thank my family for supporting me morally and spiritually during the whole period of my studies and during the research study. Their encouragement, advice and support enabled me to put in effort which enabled me to conclude the study successfully.

My sincere gratitude go to my Supervisor, Associate Professor Datin Dr. Norizah who guided me from proposal writing up to the preparation of this dissertation. Her criticism, invaluable patience, intellectual guidance and support helped me not only to accomplish this study, but also to come up with the expected standards. Sincerely, she deserves all kinds of credits and appreciation.

Furthermore, my thanks also go to all those who have contributed to this research in one way or another, such as the staff and management of the company for allowing me to conduct the research company. To my mentor at the company Mr Choon Boon Khaw, thank you assessed and helped me to understand and giving the real case study in supply chain management and not to forget my thanks go to members and respondent in Supply Chain Department to participate in the study as respondents. Last but not least, I would like to thanks to all who are involved directly in the process of completing this research study.

Thank You

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LIST OF NOMENCLATURES

SC	SUPPLY CHAIN
SCM	SUPPLY CHAIN MANAGEMENT
SCP	SUPPLY CHAIN PERFORMANCE
BS	BALANCED SCORECARD
CRM	CUSTOMER RELATIONSHIP MANAGEMENT

ABSTRAK

Kadar peningkatan ekonomi yang pesat seperti persaingan global dan permintaan barang yang berkualiti tinggi dengan masa pembuatan yang singkat telah memberi impak yang besar kepada sektor ekonomi industri pembuatan. Pengurusan Rantaian Pembekalan (SCM) adalah gabungan dan ikatan strategik yang melibatkan semua unsur penciptaan pembuatan dengan pengedaran bekalan dari pengekstrakan bahan mentah, proses transformasi dan penggunaan pengguna akhir. Oleh itu, pengurusan memberi tumpuan kepada SCM untuk mendapatkan kelebihan daya saing SCM yang merupakan salah satu amalan pengurusan yang paling penting untuk menentukan prestasi kelas dunia. Kajian dilakukan untuk mengenalpasti amalan pengurusan rantai bekalan yang diamalkan oleh syarikat.. Data dikumpul dari 25 responden dari rantaian bekalan dan jabatan logistik di syarikat. Adalah didapati bahawa syarikat menggunakan model SCOR untuk SCM mereka. Prestasi SCM dari perspektif pelanggan, perspektif kewangan, perspektif pembelajaran dan pertumbuhan serta perspektif perniagaan dalaman juga ditentukan. . Perspektif ini digunakan sebagai petunjuk prestasi SCM. Berdasarkan data yang diperolehi, syarikat ini tidak memberi penekanan yang kuat terhadap isu kewangan dalam menggambarkan prestasinya. Sekiranya permasalahan ini tidak di atasi, ini akan menyebabkan prestasi Rantaian Pembekalan (SC) tidak dioptimumkan. Kesemua aspek ini perlulah dipertimbangkan apabila melaksanakan amalan rantaian bekalan dalam rantaian bekalan. Hubungan antara pengurusan rantaian bekalan dan prestasi rantaian bekalan dianalisis menggunakan model Kaedah Balanced Scorecard (BS). Adalah didapati bahawa SCM yang berkesan akan memberi kesan kepada Prestasi SC. The Balanced Scorecard(BS) yang disesuaikan untuk syarikat adalah dikemukakan. Ini akan membantu syarikat mengenali isu dan bidang yang perlu ditangani.

ABSTRACT

The fast changing economic condition such as global competition and customer demands for high quality product and reduce lead time has a major impact on manufacturing industry. Supply Chain Management (SCM) is the integration and strategic alliance involving all the value-creating elements in the supply manufacturing, manufacturing and distribution from raw material extraction, the transformation process and end user consumption. As such, management are focusing on SCM to gain competitive advantage SCM is the one of the most important management practices for determining world class performance. The study explores the current SCM practices at a case study company. Data are collected from 25 respondents from the supply chain and logistic department in the company. It is found that the company adopt the SCOR model for their SCM. The performance of SCM from the customer perspective, financial perspective, learning and growth perspective and internal business perspective are also determined. These are used as the performance indicators of SCM. It is observed that the company did not give strong emphasize on financial issues in describing its performance. Overlooking this issues, may hinder the operational performance which may results in Supply Chain (SC) not being optimized. It is important for management from supply chain management to consider all these parameters when implementing supply chain practices in the supply chain. The relationships between supply chain management and supply chain performance are analysed using the Balanced Scorecard (BS) Method model. It is found that effective SCM will have an impact on SC Performance. A Balanced Scorecard tailored for the company is a put forward. This will help the company to recognize the issues and areas that need to be address.

CHAPTER ONE

INTRODUCTION

A supply chain (SC) is a system of organizations, people, activities, information, and resources tangled in stirring a product or service from supplier to customer. SC activities cover everything from product development, sourcing, production, and logistics, as well as the information systems needed to coordinate these activities.

A standard SC begins with the two typical types of flow which are information flow and physical flows. Information flows allow the various SC partners to coordinate their long-term plans, and to control the day-to-day flow of goods and materials up and down the supply chain. Physical flows involve the transformation, movement, and storage of goods and materials before moving on to several layers of storage facilities of ever-decreasing size and increasingly remote geographical locations, and finally reaching the consumer. Both of the information and physical are important in order to have a best state of supply chain performance (SCP).

In order to get higher productivity in the production of a company, we have to consider the importance of SC before it delivers to production process. Thus, a good SC system plays an important role and also considered as the backbone of industry productivity performance and helping developments of companies to respond to increased global competition and demanding customer need (Su & Yang, 2010).

1.0 Introduction

This chapter discusses on the research background, problem statement, research objectives, significance of research and structure of thesis.

1.1 Research Background

There is a rapidly increasing awareness in industry that today's supply chains are flawed. From the flow of suppliers directly to customer we can see there will be a lot of variance of uncertainty problems that will affect the performance of SC system.

Dyllick & Hockerts (2002) indicated that sustainable supply chain management (SSCM) is comprehended as the integration of sustainable development and supply chain management where by sustainable development is often described as containing three dimensions—integrating environmental, social and economic issues for human development—which also affects the corporate strategy and action.

Many customer-supplier relationships were weakened or damaged during the economic downturn. To rescue them, both sides need to acknowledge past mistakes, identify the causes of those problems, take corrective action, and monitor the results.

As a developed country, Malaysia has been paced into another industrialized economy in which manufacturing is considered among the contributor towards environmental worries. These worries drive firms into utterly considering the environmental effect while doing their business. The execution of excellent SCM is a key enabler that could drive organizations to emphasis on improving environmental issues, and providing economic and social benefits.

1.2 Problem Statement

In the current manufacturing scenario there are a lot of critical success factors that need to be considered to contribute towards an effective operationalization performance. Theoretically in SCM context, if SCM is done well, it contributes to a better growth of the successfulness of a company by giving it a healthy competitive advantage (Beske & Seuring, 2014)

Any flaws in the SCM can severely affect production and delivery of products to consumers. This may mark down the profitability of the manufacturing companies and give a destructive impact to the company itself. Hence, these uncertainties should be identified through this whole SCM complexity by measuring the flow of SCM performance. The purpose of this study is to measure and identify proper practices in SCM collaboration with supply chain alliances at the company as the case study.

1.3 Research Objectives

This research is to study the sustainability of SCM with regards to enhancing performance of a company.

- To explore the supply chain management practices system in the company.
- To determine the dimension factors that contribute to SCM Performance.
- To propose the future action of process improvement in SCM.

1.4 Significance of Research

This study will serve as a guideline to the company to establish SCM into an excellence state and identify factors that hinder implementation of SCM at the company.

The findings of the study will also serve as a stepping stone for future researchers on the same or similar topics by suggesting areas that need further studies to be conducted. Last but not least, successful completion of the study will enable the researcher to partially fulfil the requirements of the Final Year Project in Manufacturing Engineering with Management by Universiti Sains Malaysia.

1.5 Structure of Report

There are five chapters in this thesis. In chapter one, a brief presentation of background study, problem statement, research objectives, scope of work and significance of study and is introduced. In chapter two, literature studies on supply chain management being manage, measuring performance of supply chain. Methodology is method how to collect data using interview question and questionnaire in supply chain management. In chapter four, discussion on the result have been collected and findings based on different parameters. Finally, conclusion and recommendations for future work is pointed out in chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter discusses on literature reviews that have been referred throughout of completing this thesis writing.

2.1 The Concept of Supply Chain and Supply Chain Management

Numerous studies have attempted to explain about SC. Scholars have done numerous researches on SCM practices. Many confuse the term of SC and SCM because they have different concept. This section will differentiate these two terms. The SC encompasses all activities associated with the flow and transformation of good from raw materials stages through to the end users, as well as the associated information flows (Lourenço & Fargas, 2001). Figure 2.1 illustrate a simplified supply chain network structure, key supply chain business processes and product flows where an intra and inter companies boundaries is visualized in one process flow.

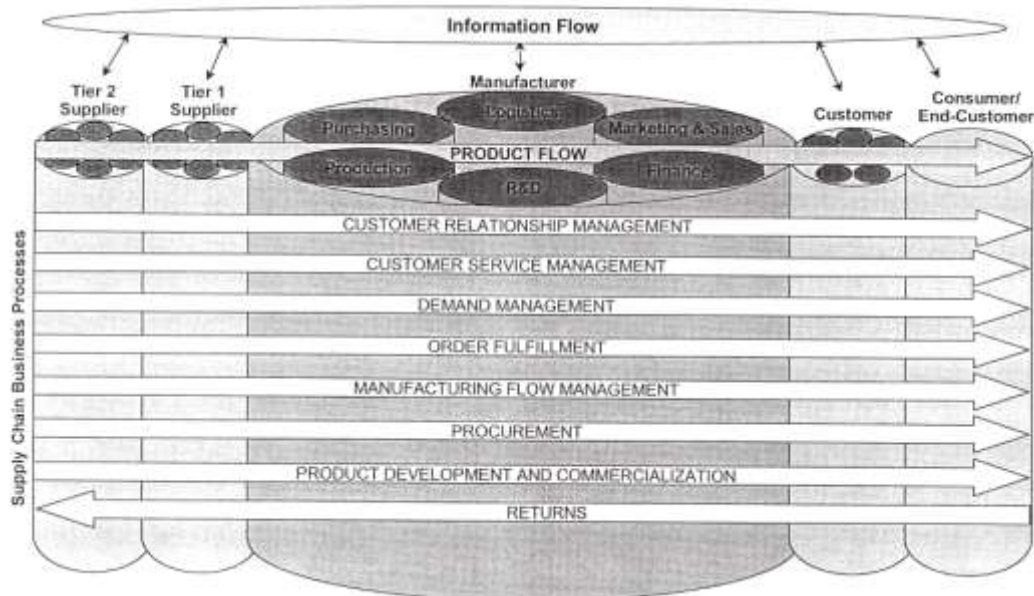


Figure 2.1: The supply chain management framework in 2016 (Source: Lambert, 2014)

Stanley & Wisner (2001) defines SC as a series of companies involved in making end-products available to customers. It includes all functions, processes, and activities involved in sourcing, making, and delivering the products or services to customers. According to Disney & Towill (2003) SC is a system consisting of material suppliers, production facilities, services and customers who are linked together via the downstream feed-forward flow of materials (deliveries) and upstream feedback flow of information (orders). However, there are various meanings and definitions that define SC nowadays but the details and scope of explanation are still similar with the actual principles.

Supply chain management is primarily concerned with the efficient integration of suppliers, factories, warehouses and stores so that merchandise is produced and distributed in the right quantities by involving design, control, planning and execution activities in order to minimize total system cost subject to satisfying service requirements. The objective of these activities is to maximize total supply chain profitability.

SCM is a set of approaches utilized to efficiently integrate suppliers and manufacturers, warehouses and stores: so that the merchandise is produced and distributed at the right quantities, to the right location, and at the right time, in order to minimize system-wide costs while satisfying service level requirements (Lourenço & Fargas, 2001)

SCM has been defined to explicitly recognize the strategic nature of coordination between trading partners and to explain the dual purpose of SCM: to improve the performance of an individual organization, and to improve the performance of the whole SC. The goal of SCM is to integrate both information and material flows seamlessly across the supply chain as an effective competitive weapon (Childhouse, 2003)

In the future, there will be the wars of the supply chain among the enterprises. New generation suppliers and contractor companies are expected to be the strong actors of the logistic and supply chain management in the 21th century. These companies are expected to obtain in the global level the ability of operational transact business and performance based business units. Private sector enterprises and strategic governmental institutions need to gather the universities, study centres and technology producing departments and create the legal and technologic infrastructure of the new generation supplier system that can be in competition in a dynamic environment. (Erturgut, 2012)

2.1.2 Supply Chain in Manufacturing Context

The main focus of any industry is to meet the customer requirement and satisfied them. In term of manufacturing, supply chain is designed to deal with physical product and a wider supplier base SCM a methodical ways by managing those delivery of goods from early stage of the SC which is raw material and link to manufacturers and end customers. SCM impacts on manufacturing companies in a diversity of ways, including processes, costs and profitability of manufactured items, the availability of inputs needed for production, company infrastructure and ways in which companies interact with their suppliers and customers. It is important for management to view the SC strategically including at daily operational level. Based on studies by Lambert *et al.* (1998) model of the supply chain structure from an industrial organization perspective and put the client organization in the focal point.

2.1.3 Overview on Current Supply Chain Practices

Key SCM and logistics practices are related to the managing customer needs, effective delivery of goods, integration, sharing information across the supply chain (Srivastava, 2006). SCM activities like service, delivery, information etc. are still challenge in the agri-food sector. Furthermore, competitiveness in supply chains has been a key issue for organizations and ‘mapping the competitiveness of an organization helps to form a sound basis for business strategies development (Li et al., 2006). Where

management recently highlights the criticalness of supply chain management to improve the business. SC practice are widely by companies to improve business by these 10 practices:

1. Begin a governing supply chain council
2. Well align and staff the supply chain organization
3. Make technology grind beneficially to us.
4. Establish alliances with key suppliers
5. Engross in cooperative strategic sourcing
6. Focus on total cost of ownership, not price
7. Placed contracts under the supply chain function
8. Enhance company-owned inventory
9. Establish proper levels of control and reduce risk
10. Take green creativities and social responsibility seriously.

However it has been contended by Hong, Zhang, & Ding, (2017) enterprises should seize the opportunities of information era and focus on using modern information technology to improve SC dynamic capabilities, in order to build a flexible, efficient, and dynamic supply chain to better respond to environmental changes, and ultimately promote their sustainable competitive advantage.

Research by Ibrahim, Zolait, & Pandiyan Sundram, (2010) shows that the adoption level of electronics manufacturing still at the moderate level and some progress in SCM practices have benefited from SCM regarding their performance, especially to revenue growth.

2.2 Framework of Supply Chain Management Practices

One of the most well-known reference models for SCM is the Supply Chain Operations Reference (SCOR) model (Stewart, 1997). This model was developed by the Supply Chain Council (a recognised global non-profit organisation) to assist the SCM function by providing a set of practical guidelines for analysing SCM practices.

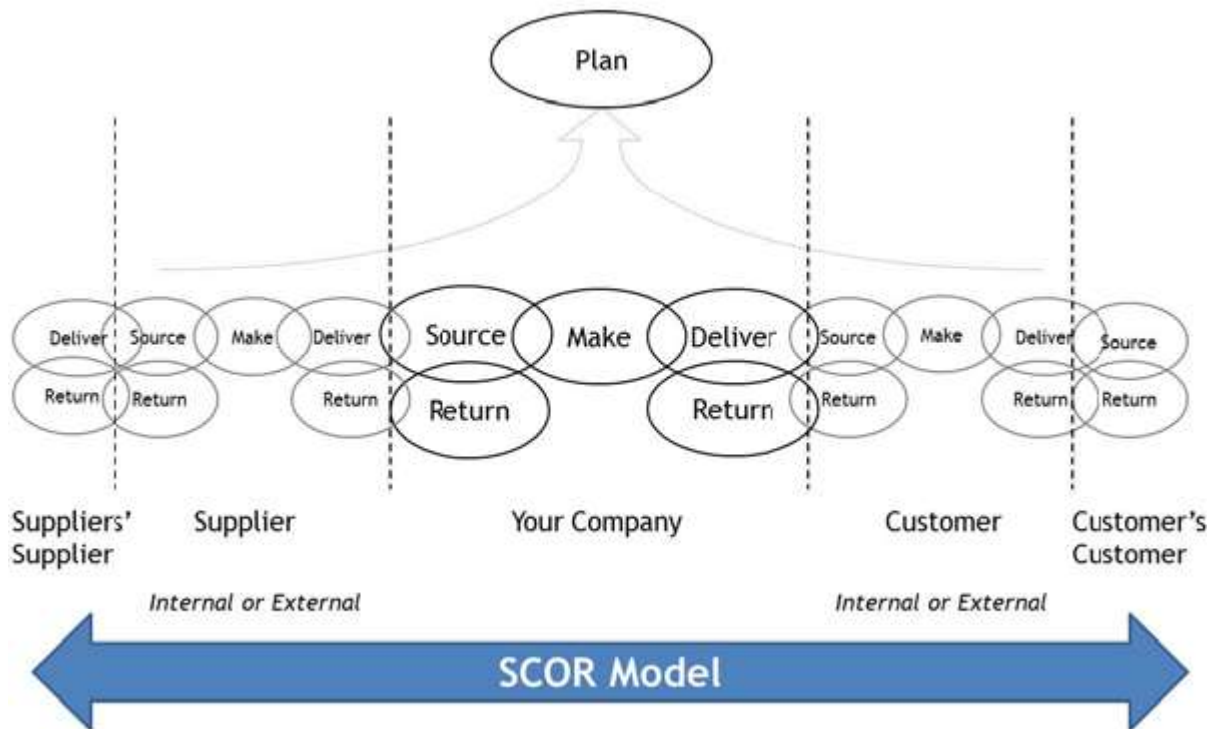


Figure 2.2: The Supply Chain Operating Reference (SCOR) model (Source: Supply-Chain Council, 2012).

A framework as shown in Figure 2.2 has been proposed by Ince et al. , (2013) for holistic understanding for SCM. It starts with organisational strategy, which flows into SC strategy because it is important to align organisational strategies through management plans. SCOR processes are developed based on the operations strategy (Bolstorff & Rosenbaum, 2007). While the operations strategy should be developed based on the corporate strategy and be aligned with the other functional strategies, SCOR does not explicitly consider this

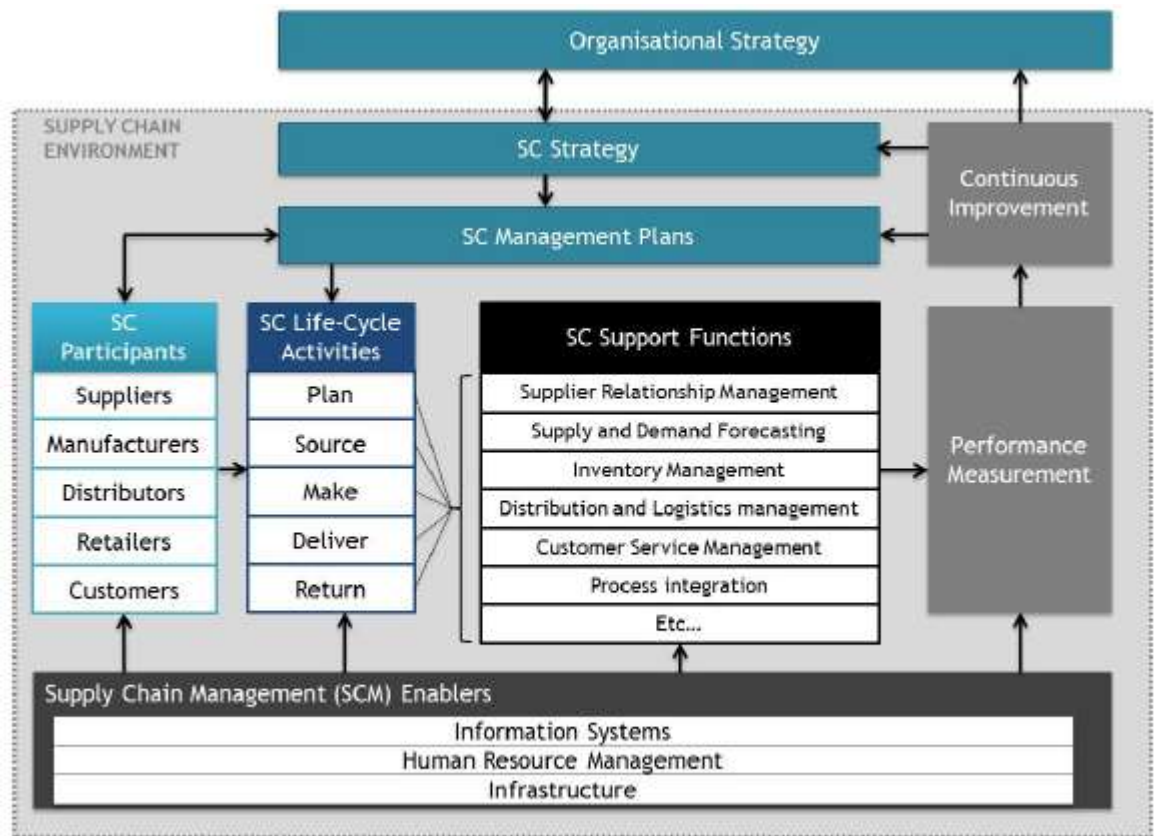


Figure 2.3: Proposed Supply Chain Management Framework (Source :D. du Toit & P.J.,2015)

Another framework is proposed by D. du Toit & P.J., (2015), the SCM further consists of three main components: SC participants, SC life- cycle activities, and SC support functions. SC participants link to SCM plans and are involved in the life-cycle activities. There is a many-to-many relationship between SC life-cycle activities and SC support functions. Performance measurement forms a critical part of this framework because it acts as a feedback loop into continuous improvement, which affects SC strategy and management.

Studies have found the similar results where supply chain management is about relationship management and the supply chain is managed link by link. The Customer Relationship Management (CRM) and Supplier Relationship Management (SRM) processes form the links in the supply chain and the other processes are implemented through that CRM and SRM linkage by (Lambert & Enz, 2017) . The strategic relationships between supply chain partners, can be considered as the linkages constituting and sustaining a long-term common unity, the value transferred to customers as well as all the entities in the supply chain would increase, costs would

decrease, the participation effort of the parties to multi-party processes would be enhanced, the specialization on the core competences would improve, the quality of products and services offered to the market would thrive and consequently the achievement of sustainable competitive advantage would be facilitated. Figures 2.4 illustrate the variable that need to consider in the linkage between suppliers and customers.



Figure 2.4: CRM and SRM form the links in the supply chain

(Source: Lambert, 2014)

In placing more emphasize , Li et al. (2006) said that customer relationship allows an organization to differentiate its product from competitors, sustain customer loyalty, and dramatically extend the value it provides to its customers.

2.3 Measurement of Supply Chain Management Performance

Khaled et. al. (2003) point out that successful SCM requires a high degree of functional and organizational integration. According to Spekman et. al. (2002) successful SCM has been linked to communications frequency and quality. Success in

SCM usually derives from understanding and managing the relationship between inventory cost and the customer service level.

Efficiency and effectiveness have been used as key indicators measuring supply chain performance (Beamon, 1999). Supply chain performance measures can be categorized into two categories and response to some of these deficiencies in traditional accounting for measuring supply chain performance, a variety of have been developed, including the following:

1. The Balanced Scorecard
2. The Supply Chain Council's SCOR Model
3. The Logistics Scoreboard
4. Activity-Based Costing (ABC)
5. Economic Value Analysis (EVA)

2.3.1 The Balanced Scorecard (BS)

The approach was initially developed by Robert S. Kaplan and David P. Norton and was discussed in an article, titled "The Balanced Scorecard – Measures That Drive Performance," published in the Harvard Business Review, January-February 1992. While not specifically developed for supply chain performance measurement, Balanced Scorecard principles provide excellent guidance to follow when doing it. The approach would recommend that a small number of balanced supply chain measures be tracked based on four perspectives:

1. Financial perspective (e.g., cost of manufacturing and cost of warehousing)
2. Customer perspective (e.g., on-time delivery and order fill rate)
3. Internal business perspective (e.g., manufacturing adherence-to-plan and forecast errors)
4. Innovative and learning perspective (e.g., APICS-certified employees and new product development cycle time)

The Balanced Scorecard Model as shown in Figure 2.5 that was developed by Kaplan and Norton where the four considered elements are actually interconnected to each other in measuring SCM performance of an organisation.

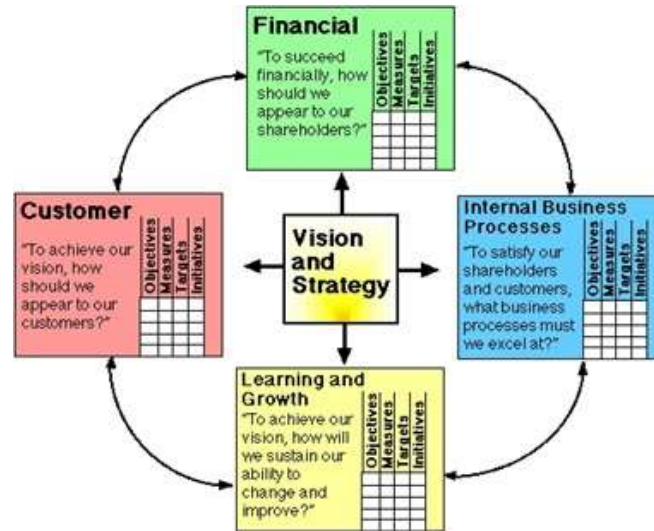


Figure 2.5: Kaplan & Norton's Balanced Scorecard model

(Source: Fooladvand, Yarmohammadian, & Shahtalebi, 2015)

2.3.1.1 Customer Perspective

Bigliardi & Bottani (2010) defines poor performance from the customer perspective as a leading indicator of future decline, even though the current financial picture may look good. Customer perspectives are collected to gauge customer satisfaction with quality, price and availability of products or services. Customers provide feedback regarding if their needs are being made with current products.

2.3.1.2 Internal Business Perspective

According to Bigliardi & Bottani, (2010) internal business processes refers to aims at satisfying shareholders and customers by excelling at some business processes. Business processes are evaluated by investigating how well products are manufactured. Operational management is analysed to track any gaps, delays, bottlenecks, shortages or waste.

2.3.1.3 Financial Perspective

In this aspect, common financial objectives and measures are described. Also, criteria like investment return rate, shareholder value, profitability capability, income growth and unit cost will be determined which are among the delayed measures and indicate the organization strategic success (Fooladvand et al., 2015). Bigliardi & Bottani, 2010) point out that this perspective reflects the traditional need for financial data. Timely and accurate funding data will always be a priority, and managers will do whatever necessary to provide it.

2.3.1.4 Learning and Growth Perspective

In this perspective, intangible assets affecting on strategic success can be diagnosed. Strategic goals of this aspect are selected considering human capitals, staff abilities, knowledge, technology and organizational culture. Among very important points for designing the balanced scorecard is agreement on the same definitions of the elements of this system. This element includes the components and objectives of organization strategy, measures, quantitative targets and strategic actions. (Yarmohammadianand, et.al, 2013).

2.3.2. The Advantages of Using Balance Scorecard

BS is configured as the ideal tool for change in management control, capable of providing a framework, structure and language to communicate the mission and strategy, using measurements to inform employees about the causes of present and future success (Kaplan & Norton, 1992, 1993).

Table 1. Benefits and Strengths of the BSC (Oliva & Borba, 2004)

Benefits	Strengths
Establishing a business model and translating it into indicators facilitates consensus for the entire company, not only of the management, but also on how to achieve it.	Organizational consensus in relation to the strategy: it facilitates the consensus of the entire company by clarifying and translating the mission and strategy into manageable terms for the entire organization.
It clarifies how day-to-day actions affect not only the short-term, but also the long-term (easily applicable to the control of daily work).	Translation of the strategy in operational terms: it communicates the strategic objectives in practical terms and enables to link them to each other through cause-effect relationships.
Once the BS is in action, it can be used to communicate the company's plans, direct efforts in one direction, avoiding dispersion.	Budget-strategy relationship: it allows the budget to be linked to the strategy, through the allocation of adequate resources to achieve the objectives.
It can also be used as a tool to learn about the business. The comparison between the plans and the current results actually helps the management team to reassess and adjust both the strategy and action plans.	Learning tool, by comparing plans and results with the objective of evaluating and adjusting strategic objectives, indicators and action plans.
Support for objectives and organizational strategies (the measures are aimed at the strategy).	Possibility of implementation in any type of entity.
Structure and procedures based on systemic conception (complements financial measures with non-financial ones): structured model that defines measures for all organizational levels (operational flexibility).	Simple model, conforming to the principles or foundations of performance measurement (it provides a broad view of how to implement a performance measurement system).

Research by Fooladvand et al., (2015) has shown that organisations that use a BS approach tend to outperform organisations without a formal approach to strategic performance management.

1. It provides a framework to describe the organizational strategy through financial, customer, internal processes, and growth and learning aspects.
2. System establishment which leads to filling the gap between the goals stated by senior managers and the objectives perceived by the employees.
3. It creates a system to measure past performance and conduct future performance.
4. It is used as a tool to achieve the goals and improve strategic planning.

2.4 Summary of Chapter

As stated in the reviews, all of them are interconnected and reliable to this research study. SCM is important in measuring SCP effectiveness in order to improve the business performance of one's company. An effective SCM are considered successful if they managed to fulfil all the requirement that needed.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describe the approach of study that will be conducted in this research. The methodology will discuss on the research design, data collection methods, data analysis and the data interpretation.

3.1 Research Design

Research design in the ways or method on how research is conducted and which source of information is gathered. Multiple-case study design is adapted and introduced as methodology (Bogdan & Biklen, 1998). The study will be more solid by collecting as much data as we can by interpreting data with a solid support with evidence (Yin 1994, Flick 2008). Real-life situations governing SCM are identified for further findings through the project. This study acquired the secondary data collection methods and primary data. Figure 3.1 is the process flow of how the outlines of the methodology is developed.

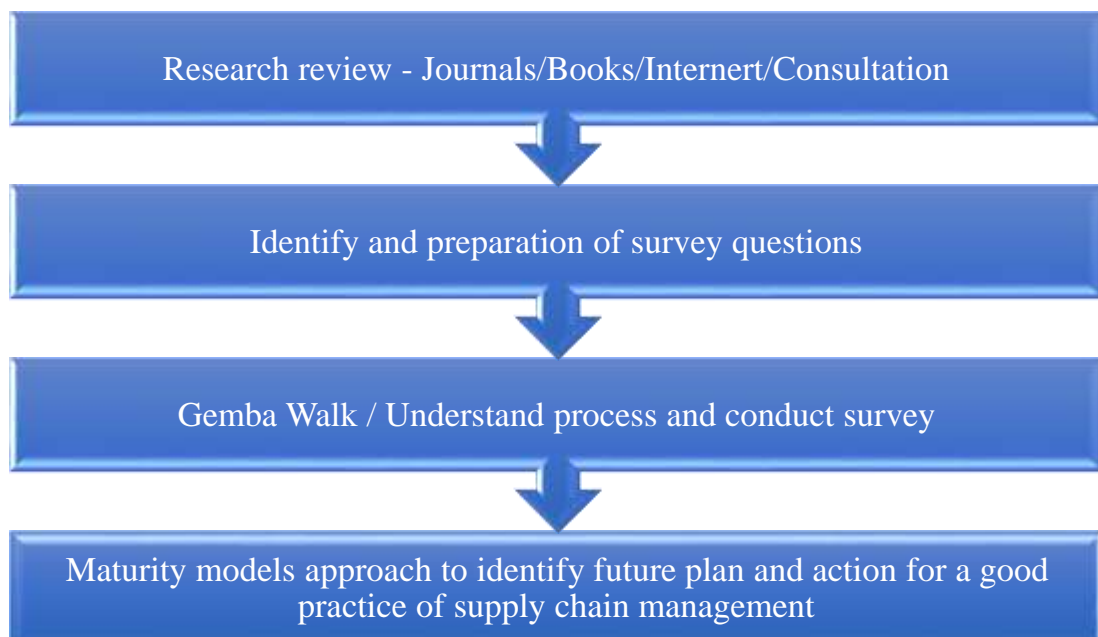


Figure 3.1: Methodology Flow Chart

3.1.1 Qualitative Design

This approach of design is from appropriate interview process through the interpretation of interview data. Investigation is made by conducting a qualitative research interviews. In-depth information related to the interviewers experiences and viewpoints of the topic discussed are provided is the interest of this particular research design.

3.2 Area of Study

This study was carried out in one of the department in a semiconductor manufacturing company located in Penang. At the area of the study, the researcher met respondents of the study who are in one way or another involved in supply chain management activities.

3.3 Semiconductor Industry in Malaysia

The semiconductor industry plays a major role in making Malaysia an industrialized country. The semiconductor industry contributes about 30 per cent of Malaysia's total manufacturing sector output and there are 40 semiconductor companies currently operating in Malaysia. The semiconductor industry contributes one third of the total export. Malaysia's export and growth in export of semiconductors, electronic equipment and parts. Thus, the semiconductor industry acts as the backbone of Malaysian economy (A. Solucis Santhapparaj, Jayashree Sreenivasan, 2008) . This industry also dominates other manufacturing sectors in terms of employment.

3.4 Data Collection Methods

Primary data and secondary data collection methods has been used to gather the data in this research. In the initial stage of this research, primary data is collected through questionnaires and data were collected by both structured interviews technique and questionnaires were conducted with experience respondents from SC Department based on questionnaire design to evaluate the SCM Practices and Performances.

3.4.1 Primary Data

Primary data is obtained by execution of interviews and questionnaire distribution with the top management and 4 head of department in SC Department for the first tier and 3 engineers that involve in SCM for second the tier. A layout of questionnaire is prepared to guide to structured interview session and the feedbacks are analysed.

3.4.1.1 Questionnaires

In this study, questionnaires contained structured questions. The researcher used questionnaires because they cover a large sample of respondents in the shortest possible time and using low costs. For this study, the primary data collection method was questionnaires.

3.4.1.2 Interviews

The researcher used interviews because they allowed face-to-face communication with respondents, it is a simple and easier way or method of acquiring information that provides straight answers to research questions. Through interviews, the researcher collected information on the supply chain management system used by the company, how effective the system is and factors that affect the system.

3.4.2 Secondary Data

Secondary data were gained through the effort of collecting information from SCM related journals, books, proceedings, case studies, newspaper and internet as being mentioned in Chapter 2.

CHAPTER FOUR

RESULT AND DISCUSSION

4.0 Introduction

This chapter discusses the findings based on the method used in the previous chapter. These results include the demographic profile of the respondents presented in a tabulation of graph and results of the study findings. The data in this section were generated from questionnaires filled and structured interviews collected from 25 respondents in the company during February to April, 2018

4.1 Company Background

The company is a semiconductor company which specialized in Flexible Printed Circuits (FPC) manufacturing. This company who already established since 1994. It is one of the pioneer in FPC manufacturing in Malaysia. Equipped with highly automated state-of-the-art facilities, the company provides an inclusive FPC solution where it covers in circuit designing, mass-production, prototype fabrication and Surface-Mount-Technology (SMT) assembly. As a one of the world-class manufacturer, the company is certified with ISO/TS16949, ISO9001, ISO14001, Canon Green Procurement and Sony Green Partnership

4.2 Operations at Case Study Company

The organizational of SC Department of the company was structured into 4 departments which are Sourcing, Supply Research, Procurement and Materials Management. Each of these department have different roles where Department of Sourcing will be working on buyers interaction, Department of Supply Research will done its job as a researches, where all the uncertainties that may affecting to supply chain operation will be covered in this department. Plus Department of Procurement will working on vendor relationship, purchasing of resourcing raw material. While, Department of Materials Management will working more on logistic where they

managing the warehouse operation. All of these department is relatively interconnected to each other where they will be laid under one stable of SC Department.

In term of SCM in the company, they have various link between end-to-end among 32 suppliers and 16 customers. Most of the customer and suppliers internationally and globally connected. The diversity in this connection makes the company scarcely to manage and integrate all the process links with all members across the SC for determining which members are critical to the success of the company and need to allocate managerial attention and resources.

4.3 Supply Chain Management Practices at Case Study Company

Based on observations and structured interview that has been conducted, it is found that the company is incline towards the SCOR model. This is because there are five main components: Plan, Source, Make, Deliver, and Return. The components represent the main inter-related business processes during the life-cycle of a product. With this SCOR model, this company could use it to improve SC processes by identifying, measuring, and reorganising the uncertainties in their SCM system. This SCM practices also helps the company to understand how the 5 steps repeatedly conducted between suppliers, the company, and customers.

4.4 Balanced Scorecard Model

During the case studies, the indicators include in the general model of The Balanced Scorecards were ranked on the basis of the opinion of managers and head of departments collected during the interviews. With the aids of the findings based on the interview, this could be the foundation and a useful form of content for analysis. It is also helpful in linking specific scorecard issues with supervision by managers and top management.

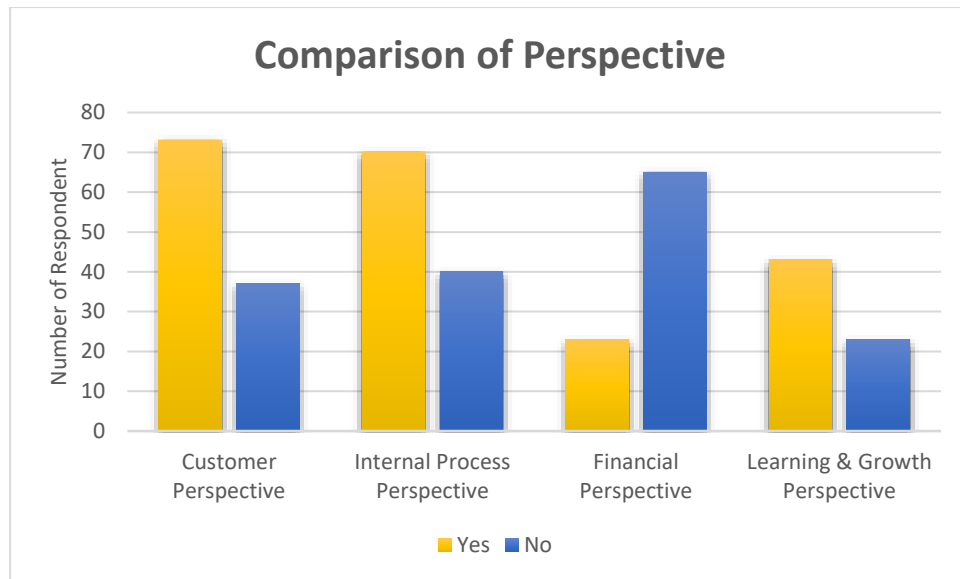


Figure 4.1: Comparison on number of respondents based on perspective

Figure 4.1 interprets the comparison on number of respondents with different perspective for this case study, customer perspectives and internal process perspectives are ranked as the important perspectives than this followed by learning growth perspectives and financial perspectives. Customer perspective is ranked as the most important because the results from questionnaires perceived as most relevant are “Order lead time”, “Effectiveness of distribution”, “Distribution performance”, “Quality of Delivery Goods” and “Customer Query Time”. As far as the internal processes perspective is concerned, “Purchase order cycle time”, “Effectiveness of Master Production Schedule”, “Supplier rejection rate”, “Total inventory cost”, and “Frequency of delivery” are perceived as the most important indicators.

The third ranked based on importance is learning and growth perspective and are related to the collaboration with supply chain players, that is “Supplier assistance in solving technical problems”, “Supplier ability to respond to quality problems” and “Buyer-supplier collaboration in problem solving”. “Order entry methods” and “Level of information sharing”. Last but not least, the financial perspective, managers judged the indicators “Information carrying cost” and “Supplier cost saving activities” as the most important, followed by “Variations against budget” and “Cost per operation hour”.

It can be concluded that financial perspective was not emphasize by the company. It is important that financial perspective is given serious attention so that there will be dynamic system of SC and a stronger linkage in between all four perspective through the allocation of adequate resources to achieve the objectives so that it can improve the business performance. . The model BS of the company has been developed and from the manager and four head of department of SC department in Figures 4.2.