

## **CHAPTER 1**

### **1.0 INTRODUCTION**

#### **1.1 Introduction**

The primary purpose of this chapter is to clearly and precisely define the main area of the research study and the motivation for such endeavour. This chapter is organised into the following sections: introduction, background of study, statement of problem, research questions, research objectives, general aim of study, justification for current research, theoretical perspective, and contribution of research, research boundaries, also delimitation of study and summary of chapter. Accordingly, this chapter also attempts to discuss the justification of research from various aspects such as justification for selecting Malaysia as the country of research, justification for the selection of manufacturing as a scope of study, justification for the selection of electronics firms as an industry of interest and justification for the selection of supply chain as the area of study. Finally, this chapter provides the outline of the thesis in detail to provide a clear and holistic view of the study.

#### **1.2 Background of Study**

In the past, the evolution in the logistics management was driven by the intention and need to continuously improve the system and to reduce the total cost. Logistics practitioners realized that the achievement of lowest total cost or cost tradeoffs is impossible if the cost improvement plan is carried out in each individual part of the logistics process separately. This phenomenon has made the world appreciate the concept and application of logistics integration.

Subsequently, companies began to realize that it is important to not only focus on the improvement of an organization itself, but also essential to include other relevant members of the respective organization, such as the trading partners, suppliers, distributors and customers in the effort of optimizing logistics costs. Such integration of business partners and business processes mainly emphasized in nurturing relationship within the terms of physical and information flows. This has created a challenging business atmosphere to all logistics practitioners to foster an integrated logistics performance within and across the members of organization. Henceforth, the concept and practices of supply chain management has become essential for business performance and operational success.

The phrase “Supply Chain Management” originated in the early 1980s. Oliver and Webber (1982) discussed the potential benefits of integrating the internal business functions of purchasing, manufacturing, sales and distribution. A thorough perusal of numerous descriptions of supply chain management reveals the common themes: effective flow of resources [information, finance, product, services] from the source of supplier to the destination of customer, through various distribution channels and manufacturers (Chopra & Meindl, 2007; Mohanty & Deshmukh, 2008). As such, the concept and practices of supply chain management remains as an interest of many stakeholders.

The growing interest in SCM can be attributed to rapid changes in the global business scenario. Across the world, recent years have seen a marked shift towards customization and globalization. This has resulted in competition among firms reaching new frontiers. Therefore, in recent years, supply chain management has acquired immense attention from both academic and industry circles. Academics as well as practitioners are looking at SCM

as a requisite for firms to compete on a variety of dimensions such as cost, quality, delivery and flexibility (Chan & Qi, 2003b; Croom, Romano, & Giannakis, 2000; Li, Rao, Ragu-Nathan, & Ragu-Nathan, 2005; Tracey & Tan, 2001).

Moreover, literatures on the current business trends reflecting the demands being placed on businesses by their customers are increasing. These demands include: reduced prices, superior product quality, excellent customer service, increased variety and exceptional value (Chopra & Meindl, 2007). This necessitates multiple companies to perform their business functions with the goal of satisfying a given customer's demand. Firms across the world are meeting the increased competition by offering a high variety of products at the lowest costs whilst delivering them quickly. This has resulted in the development of supply chains with the aim of fulfilling their customers' demands (Mohanty & Deshmukh, 2008).

In the past, firms targeted improved competitive positions by aggressively pursuing different methods. This includes such as marketing and financial improvements to survive and to compete. Since competition is no longer between organisations, but among supply chains, (Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2006) the chain management (SCM) has become a potentially valuable way of securing competitive advantage and improving organisational performance (Chan & Qi, 2003b; Moberg, Whipple, Cutler, & Speh, 2004).

The understanding and practising of supply chain management (SCM) has become an essential prerequisite for staying competitive in the global race and for enhancing profitability (Childhouse & Towill, 2003; Moberg, Cutler, Gross, & Speh, 2002; Power,

Sohal, & Rahman, 2001; Tan, Lyman, & Wisner, 2002). The practices of SCM are proposed to be a multi-dimensional concept, including the downstream and upstream sides of the supply chain (Li, Lin, Wang, & Yan, 2006). As such, this has been the primary motive of study to identify the right set of supply chain management practices in electronics industry in Malaysia.

Besides identifying the right supply chain management practices, the set of supply chain management practices is expected to perform uniformly as a single entity, and simultaneously its impact on supply chain performance has to be monitored to ensure the desired productivity and operational cost efficiency are achieved (Brewer & Speh, 2000). This implies that, business organisations should measure its performance at various aspect to achieve sustainable competitiveness (Elmuti, 2002). Chan and Qi (2003b) asserted that, the relationship between supply chain management practices and performance could better facilitate the inter organisation understanding and integration among partners in the supply chain. Above all, implementation of supply chain management practices, enhancing supply chain integration and improving supply chain performance will be a pre-requisite for the survival of any supply chain.

Neely, (1997) reiterated that limited agreement achieved on how to monitor and how to assess the performance of a supply chain, despite the fact that most organisations are able to track costs and measure revenues. It is of critical importance to identify suitable measures in cases of continual evolution of supply chains, so as to cope with competition and the changing environment (Jutter & Maklan, 2011). This is another reason that prompted the researcher to study the relationship between supply chain management practices and

performance of supply chains in the electronics sector in Malaysia. Measures that are currently available and being used by supply chains found in developed economies need to be ascertained on their compatibility to supply chains in Malaysia's electronics manufacturing industry.

Thus, this study aims towards fulfilling the need to study and understand supply chain management practices and its impact towards supply chain integration and supply chain performance of electronics firms in Malaysia. The study also aims to explore the level of mediation role of supply chain integration towards the relationship between supply chain management practices and supply chain performance. Furthermore, it is timely that an empirical study be conducted to establish facts about supply chain management practices in developing economies. Currently most of the facts about supply chain management practices are related to what is being performed in developed economies.

### **1.3 Statement of Problem**

Malaysia is considered as one of the fastest growing economies in the South-east Asia and Asia Pacific region. The country is perceived as having a steady growth based on the strong fundamentals of agro-economics and natural resources. The real GDP has been growing consistently over the 4 percent mark in the last few years and is forecasted to obtain 6 percent in the year 2010. Nevertheless, Malaysia's growth in recent times has been driven by the manufacturing and service sectors. This steady growth and economic prosperity has been a significant contribution through skilled manpower, low cost, political stability and large influx of foreign direct investment [FDI]. As such, Malaysia was seen as a very attractive investment destination by global MNCs and other players as well. However a

continuous and sustained economic growth in the long run cannot be based on the low cost advantage alone; given the rapid expansion of the manufacturing sector in China, India and Vietnam. Thus, the only way Malaysia can capture more FDI primarily in the manufacturing sector is to be more productive and cost efficient through excellent supply chain management practices and integration (Dasa & Narasimhan, 2001; Lager & Horte, 2002).

Meantime, globalization has driven many corporations, mainly the manufacturing firms, to widen their resources and capability enhancement from internal environmental practices to greater heights. Attention is increasingly shifting towards external collaboration and networking outside the boundaries of the organisation (Kannan & Tan, 2010; Li, Ragu-Nathan, et al., 2006). This requirement became essential in order to be competitive locally and across the border (Lambert, Cooper, & Pagh, 1998; Oliver & Webber, 1982). As to achieve this, organisation needs to have strong supply chain practices and inter-organisation integration of its elaborate network of business relationships.

Therefore, there is an imminent need for supply chain management practices in all sectors across each value chain entity. More recently, in Malaysia, the New Economic Model 2010 has necessitated serious attention on the supply chain management practices particularly in the electronics manufacturing industry (NEAC, 2010). Indeed, under the 10<sup>th</sup> Malaysia Plan, electronic industry is prioritised as National Key Economic Area [NKEA] which is classified as an important platform for the implementation of Economic Transformational Programme [ETP] and Entry Point Project [EPP] (MITI, 2010). Both these ETP and EPP

are two main action based programmes under the Government Transformational Plan [GTP].

In addition, SCM has captured the interest of many practitioners and scholars in recent years (Bechtel & Jayaram, 1997; K. Burgess, Singh, & Koroglu, 2006). This popularity has been due to the fact that supply chain management is a vital element for operational success (Croom, et al., 2000). Supply chain management is an integration of various business processes such as demand planning and forecasting, procurement, manufacturing and assembly, distribution and return of effective and efficient management of flow of resources from point of origin to point of destination, in order to meet customer requirement (Lummus & Vokurka, 1999a; Mentzer, et al., 2001; New, 1997). Supply chain management includes the total connectivity between the upstream [supply and manufacturing] and downstream [distribution] value chain entities in order to achieve competitiveness (Boddy, Macbeth, & Wagner, 2000; Hong & Jeong, 2006).

As such, the primary role of SCM is to meet customer requirement in terms of providing one with the right product (Dale, Lascelles, & Lloyd, 1994) of right quality (Brewer & Speh, 2000; Carmignani, 2009) and quantity (Chan, Humphreys, & Lu, 2001) from the right source (Carr & Smeltzer, 1999) at the right price (Chin, Tummala, Leung, & Tang, 2004) and finally utilizing the right technology (Basnet, Corner, Wisner, & Tan, 2003; Boubekri, 2001). However, in spite of the key role of supply chain practices in the SCM phenomenon, far limited and scant scholarly investigation has been undertaken to present a theoretical viewpoint, supported by empirical evidence (Basnet, et al., 2003), on how supply chain practices to yield performance gains at firm level and total supply chain

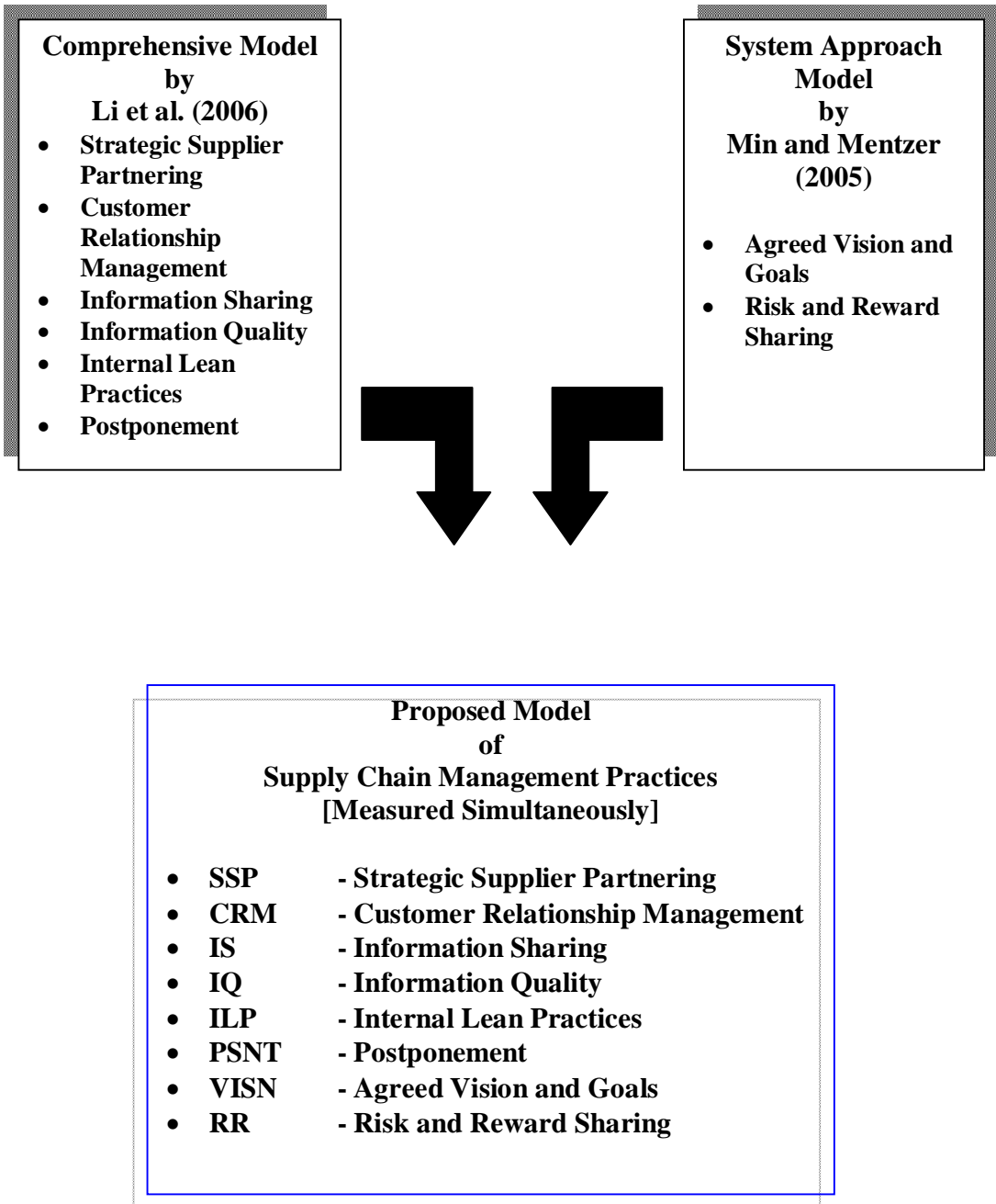
performance. As such, an understanding of supply chain management and the execution of its practices emerge to be of much greater importance to a company to obtain a sustainable competitive advantage in comparison to its competitors (Moberg, et al., 2002; Power, et al., 2001; Sezen, 2008).

Moreover, SCM also has been distinguished for its strategic role in coordinating business processes across trading partners and simultaneously to improve both (1) the performance of an individual organisation (Stevens, 1990) and (2) the performance of the entire supply chain (Li, et al., 2005; Wong, Tjosvold, Wong, & Liu, 1999). In order to compete, supply chain management seeks close integration with internal functions within firm and external linking with suppliers, customers and other channel members. This could be achieved through effective construction of various supply chain practices (Kim, 2006b). Despite knowing the essentials of supply chain, there are still some business organisations who are clueless and do not know precisely what are the sets of supply chain management practices to be implemented to improve the performance (Li, Ragu-Nathan, et al., 2006). All these point to the need for studies that are predicated on supply chain management practices and their models.

Therefore, this research study has discovered a set of new combination of supply chain management practices component (variables) which combines component of supply chain management practices proposed by Li et al., (2006) [comprehensive model] and Min and Mentzer, (2004) [system approach model] shown in Figure 1.1. The model simply suggests that depth and breadth of these new sets of SCM practices components adopted are a function of upstream practices, internal supply chain process practices, downstream



practices, information flow across supply chain practices and system approach practices which are also an area of potential research as recommended by previous research. This new model is measured by considering supply chain management practices from within the whole system (upstream, downstream, internal process, across supply chain and system orientation). Hence, the new model developed in this study could be viewed as a more comprehensive concept than the narrow view taken in previous research (Alvarado & Kotzab, 2001; Basnet, et al., 2003; K. Burgess, et al., 2006; Chen & Paulraj, 2004; Donlon, 1996; Min & Mentzer, 2004; Tan, 2001; Tan, Kannan, & Handfield, 1998).



Source: Developed for this study

**Figure 1.1:**  
**New Combination of**  
**Supply Chain Management Practices Model**

This study has also made an attempt to unveil a conceptual framework of analysis to establish linkages among supply chain management practices, supply chain performance and the mediating role of supply chain integration. Additionally, it attempts to explore the supply chain management practices in light of developments in Malaysia involving the electronics firms and their cumulative impact on the supply chain integration and supply chain performance. The outcomes of the analysis will reveal whether the comprehensive set of supply chain management practices (strategic supplier partnering, customer relationship management, information sharing, information quality, internal lean practices, postponement, agreed vision & goals and risk & reward sharing) exist among firms in the electronics manufacturing industry in Malaysia. Additionally, the outcome will identify that if there are such phenomenon what would be their magnitudes.

#### **1.4 Research Questions**

The concept and application of supply chain management has been widely researched. Nevertheless, this area need considerable new research direction owing to the lack of empirical evidence on the linkages between supply chain management practices (*strategic supplier partnering, customer relationship management, information sharing, information quality, internal lean practices, postponement, agreed vision and goals and risk and reward sharing*), supply chain integration, and supply chain performance. Hence, to fill the research gap on how these sets of supply chain management practices affect the overall supply chain performance in a developing country, Malaysia specifically in the electronic industry. This study attempts to empirically examine the link between supply chain management practices, supply chain integration, and supply chain performance in the electronics industry in Malaysia. Additionally, this empirical exercise is also intended to enhance the

understanding of the conceptual framework established in this study. Therefore, there are several important research questions which require in-depth explanation were highlighted in this study. The research questions for this study are;

- 1.4.1 What are the supply chain management practices contributing to supply chain performance in the electronics manufacturing industry in Malaysia?
- 1.4.2 What are the supply chain management practices contributing to supply chain integration in the electronics manufacturing industry in Malaysia?
- 1.4.3 What dimensions of supply chain performance are related to supply chain integration in the electronics manufacturing industry in Malaysia?
- 1.4.4 How does supply chain integration mediate the relationship between supply chain management practices and supply chain performance in the electronics manufacturing industry in Malaysia?

## **1.5 Research Objectives**

The main objectives of this study are motivated by the work of Li, et al., (2005) and Li, et al., (2006), who addressed the need for a comprehensive supply chain management practices. As such, this study develops a research agenda for the area, pointing to the need to show a comprehensive set of supply chain management practices which could affect the

performance of supply chain. Finally, a conceptual model is created to emphasize the need for determining the relationship between supply chain management practices, supply chain integration and supply chain perf

This section introduces the purpose of this study through two main objectives. The first objective is to identify the set of SCM practices affecting the supply chain performance. The second objective is to attempt to determine the mediating effect of supply chain integration between supply chain management practices and supply chain performance. Therefore, several important research objectives that need to be investigated are addressed in this study. Among them are:

- 1.5.1 To determine the factors of supply chain management practices that are contributing to the supply chain performance in the electronics manufacturing industry in Malaysia.
- 1.5.2 To determine the factors of supply chain management practices that are contributing to the supply chain integration in the electronics manufacturing industry in Malaysia.
- 1.5.3 To determine the dimensions of supply chain performance that are related to supply chain integration in the electronics manufacturing industry in Malaysia.

1.5.4 To investigate the mediating affect of supply chain integration on the relationship between supply chain practices and supply chain performance in the electronics manufacturing industry in Malaysia.

## **1.6 Justification for Current Research**

The research can be justified on four grounds:-

- 1) Justification for the selection of Malaysia as the county of study
- 2) Justification for the selection of the manufacturing sector
- 3) Justification for the selection of the electronics sector
- 4) Justification for the selection of supply chain as the research area

### **1.6.1 Justification for the selection of Malaysia, as the country of study**

Malaysia is a developing economy which has experienced vast economic evolution. In the early 1970's, Malaysia was popularly known as a resource-rich country and began to adopt industrial evolution to be a manufacturing export structured economy (Malaysia, 2007). As a result of its early entry into industrialization, compared to neighbouring economies, in 2003, Malaysia achieved the status of one of the most sophisticated export structured economy among developing countries, well above the level predicted, based on its income. Subsequently, Malaysia has shown both rising income and increasing manufacturing sophistication. This is particularly interesting because it is a rare instance of successful industrialization in a resource-rich country (Best & Rasiah, 2003).

Currently, Malaysia has revealed the possibility of expanding industrial production in a resource-exporting economy (Malaysia EPU, 2009). Nevertheless, the success of the above effort depends whether manufacturing industry in Malaysia could be internationally competitive. This also depends not just on the manufacturing capabilities, which becomes less competitive as a result of the birth of new emerging economies (like China and Vietnam). It depends on the availability of sustainable competitive advantages gained from organisational collaboration through supply chain management. The Malaysian government has been strongly engaged in planning, designing and implementing policies that concern supply chain. The basis of evident of Malaysian government policies that affect the supply chain can be seen in the New Economic Model (NEM) (NEAC, 2010).

In conclusion based on the above phenomenon, Malaysia, has successfully survived the transformational economy from resources export dependent to manufacturing export dependent which is indeed a rare case. As a consequence, Malaysia has proved to increase income growth and manufacturing sophistication. This is particularly interesting because it is a rare instance of successful industrialization in a resource-rich country. Owing to the above uniqueness, Malaysia offers an interesting case for a middle income economy.

### **1.6.2 Justification for the selection of the manufacturing sector**

Manufacturing or production operations are regarded as leading strategic and tactical functions of any business organisation (Sohal & Ritter, 1995). Apparently, this strategic function can be further synergized to realize its full potential if it is managed effectively and efficiently, throughout the total business process. (Kasul & Motwani, 1995). In addition, recently, the ever changing and demanding customer requirements has forced

manufacturers to adopt new manufacturing capabilities such as flexibility, adaptability, responsiveness and innovativeness (Sohal, Burcher, & Lee, 1999). Compounding to it, globalization with borderless competitive structure has required manufacturers to be more objective in terms of quality, cost, delivery and flexibility (Davies & Kochhar, 2000).

As a consequence, upon reaching independence in 1957, Malaysia formulated a robust industrial policy with primarily targeting to promote industrial development, particularly with foreign direct investment (FDI) performing an essential role. Accordingly, foreign direct investment inflow to manufacturing will be the gateway for Malaysia to obtain new technology, capital and expertise as well as access to overseas market. Hence, Industrial Master Plan was executed in the mid-1980, which in principle aims to enhance the process of achieving a sustainable and competitive growth in the manufacturing base. This means setting a strong foundation for a diversified approach through industrial strategy shifted from an inward-looking approach to an outward-looking, export-oriented one. (Abdullah, 1994).

The above phenomenon and scenario provide adequate evidence of Malaysia investing heavy trust on manufacturing sector for the purpose of developing the economy. Hence, the manufacturing industry in Malaysia has set an example of a developing country that has successfully harnessed resource exports for export oriented manufactures. Owing to the above importance of manufacturing sector, this study aims to identify the right practices for manufacturing firms' performance enhancement.



### **1.6.3 Justification for the selection of electronics sector**

Malaysian electronics industry is the significant contributor in terms of manufacturing output, exports volume and employment opportunity in comparison to other resource based and non-resource based industry (Salleh & Mohammad, 2005). More specifically, in 2006, the total output of the electrical and electronics industry is approximately RM214.9 billion. Further, the export of electrical and electronics products was approximately RM282.2 billion or 61.7% of total manufactured exports. This huge volume of production and international trading of electrical and electronics products has created 397,553 jobs opportunities, amounting to 36.6% of total employment in the manufacturing sector (Tan, Eze, & Teo, 2008). Hence, Malaysia's electronics manufacturing industry has become an important contributing sector. This has made Malaysia the leading exporter of semiconductor, room air-conditioners, telecommunication equipment, computers and computer peripherals (FMM, 2004). Furthermore, the electronics industries have relatively developed higher export capabilities due to FDI. Thus, it is postulated that there would emerge some spillovers to the other industries within the cluster. Indeed, due to the modular nature of these industries, technological spillovers would have naturally occurred more in these industries than in other industries (Best, 2007; Best & Rasiyah, 2003; Rasiyah, 2008, 2009a, 2009b). As such, these factors have motivated the choice of selecting electronics manufacturing sector as the area of interest in this research study.

The above phenomenon and scenario provided adequate evidence on the importance of electronics industry to the growth of Malaysian economy. This implies that the electronics industry has been a role model for other industries in the non-resource based industry and resource based industry. Therefore, the electronics manufacturing industry in Malaysia has

set an example for other developing countries which have similar economic development models. It is therefore essential to study the supply chain management practices and performance of electronic manufacturing industry in Malaysia in order to provide more insight to the respective other industries in Malaysia and other developing countries.

#### **1.6.4 Justification for the selection of supply chain as the research area**

There are numerous research studies (Basnet, et al., 2003; Berry, Towill, & Wadsley, 1994; Bhutta, Rana, & Asad, 2007; Holt & Ghobadian, 2009; Khan, Bakkappa, Metri, & Sahay, 2009; A. Lockamy & K. McCormack, 2004; Whipple, Voss, & Closs, 2009; Zhou & Benton, 2007) that generally indicate supply chain management as a sustainable growing management network of supply chain members which strategically drives improvement to financial and non-financial (or operational) performance. Recent research studies (Baharanchi, 2009; Braunscheidel & Suresh, 2009; Erol, et al., 2010; Fantazy, Kumar, & Kumar, 2009; Perez, Castro, Simons, & Gimenez, 2010; Svensson, 2010; Wei, Sheen, Tai, & Lee, 2010), have found the focus of supply chain management for most companies has shifted from cost reduction to the overall business impact and shareholder value.

Considering the above importance of the supply chain management, the Malaysian government has intensified the responsibility of the Federation of Malaysian Manufacturers (FMM) to bring changes to the local industry by enhancing their competitiveness and aligning their supply chain (Rajagopal, Zailani, & Sulaiman, 2009). Accordingly, FMM has engaged in the automation of local industry supply chain management (SCM) processes with the strategic purpose of preparing local industries to compete globally (Yong, 2002). In line with the above initiatives, the Malaysian government has launched “Tiger Project”

with a total grant valued at RM5 million. The goals of “Tiger Project” is to facilitate manufacturers primarily in the local electrical and electronics industry to put into operation the RosettaNet System which is an internet-based common messaging standard for global SCM (Rajagopal, Zailani, et al., 2009).

Although it is the key role of supply chain management practices in the SCM phenomenon, limited empirical research studies and investigation has been carried out to justify on, how supply chain management practices could yield total supply chain performance (Azar, Kahnali, & Taghavi, 2008; Basnet, et al., 2003). Therefore, new supply chain management practices models are required for continual improvement of supply chain performance.

### **1.7 Contribution of Research**

Through a systematic approach to the analysis of supply chain practices, supply chain integration and supply chain performance; the study is purported to contribute to the new body of knowledge (theoretically and empirically) generally to the existing literature of supply chain. It is imperative that one understands more about the influence of supply chain practices towards the supply chain integration and performance of supply chain, especially in light of the current industrial policies, industrial master plan and government transformation plan. As such this study also provides practical and managerial contribution to current practitioners and industrialist. Hence, this study contributes in the following ways:

### **1.7.1 Theoretical Contribution**

This study contributes to the existing body of knowledge by examining the relationships between extended supply chain management practices, supply chain integration and the performance of supply chain management in the electronics manufacturing industry in Malaysia. This contribution is derived from the attempt to test the impact of supply chain management practices on supply chain performance through supply chain integration. Previous studies (Koh, Demirbag, Bayraktar, Tatoglu, & Zaim, 2007; Li, Ragu-Nathan, et al., 2006; Li, et al., 2005), have investigated direct link between supply chain practices and performance. Therefore, by examining whether or not supply chain management practices have an impact on supply chain performance in the context of electronics manufacturing; this study will contribute to the resource-based view [RBV] literature (Caridi, Crippa, Perego, Sianesi, & Tumino, 2010).

In addition, by combining the extended variables of supply chain management practices and testing them in a single setting, this would allow the study to generate a comprehensive framework of the relationships between the variables. Further, this study analyses the relationship between supply chain management practices, supply chain integration and supply chain performance in the electronics manufacturing industry. Besides, the study establishes both theoretical and empirical argument not only to justify that this relationship exists, but also identified the mediating role played by supply chain integration.

In terms of theoretical contribution, this study also extends previous research conducted in Western countries (Akintoye, McIntosh, & Fitzgerald, 2000; Christopher & Juttner, 2000; Croom, et al., 2000; Edum-Fotwe, Thorpe, & McCaler, 2001; García-Arca, Prado-Prado, &

Mejías-Sacaluga, 2007) and advances our understanding of the relationship between supply chain management practices and supply chain performance in a developing and Asian economy. Past studies on similar supply chain management practices (manufacturing context) in Asian countries have tended to study countries such as Singapore (Azar, et al., 2008; Kheng & Al-Hawamdeh, 2002) and Hong Kong (Chin, et al., 2004).

### **1.7.2 Managerial Contribution**

This research will likely aid practitioners and stakeholders of the industry by fostering a better understanding of the impact of supply chain practices toward its performance. First, it will reveal empirical evidence that the right supply chain management practices will lead to better supply chain integration and subsequently enhance supply chain performance.

Secondly, manufacturers and supply chain practitioners may be able to use the contributing factors of the performance of supply chain management to identify the industrial critical success factors. As such, these critical success factors will be identified as the key result area [KRA] to formulate key performance indicator [KPI] to measure the effectiveness and efficiency of the organisational resources and supply chain in total.

Finally, this study will highlight the role of mediators [supply chain integration] in gaining adequate benefit from supply chain practices. The research will, therefore, reveal the importance of each mediating construct that link between supply chain practices and supply chain performance. The beneficiaries of this study include firms in the industry, government, entrepreneurs, policy makers, grant-giving agencies and institution.

Also, another practical contribution of this research is that manufacturing firms that would like to adopt the supply chain management practices or increase their supply chain performance will be able to apply strategies based on this research. Based on this research the key supply chain management practices are identified ranging from upstream, downstream, internal and across supply chain which could better the performance of supply chain of the electronics industry in Malaysia.

## **1.8 Research Boundaries**

The research boundaries give an overview of the length, width and depth-ness of a research study. These research boundaries for an extent could justify reason for certain research procedures. Therefore, this study will declare the research boundaries in view of scope of study, unit of analysis and finally time frame.

### **1.8.1 Scope of Research or Study**

In terms of scope of research, this study will constitute only supply chain practices within the manufacturing sector and selected electronics manufacturing firms. The sample population is within the electronics manufacturing firms in Malaysia.

### **1.8.2 Unit of Analysis**

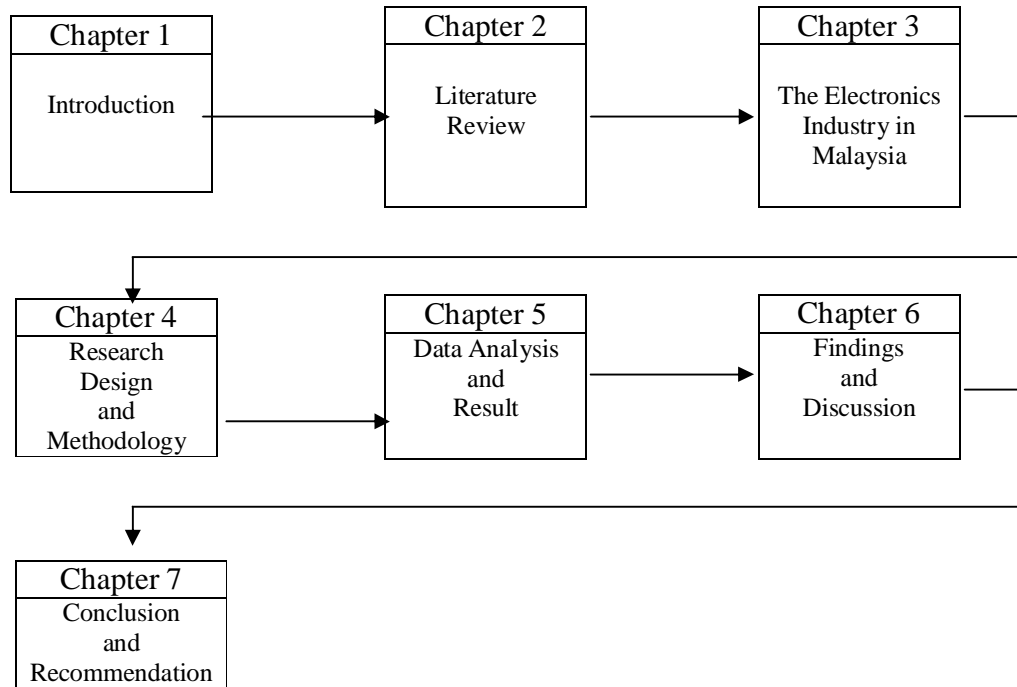
This research work is focuses on organisational based [unit of analysis] and not individual basis. This means the area of study of the research paper cover the perception of the manager who is representing an organisation in the area of supply chain, operations, logistics and other related areas.

### **1.8.3 Time Frame**

This cross sectioned study involves sample and data collection for the period of 9 months, starting from the date of November 2009 till July 2010. Cross-sectional studies involve data collected at a defined time. This cross-sectional study involves special data collection, including questions about the past, but they often rely on data originally collected for other purposes.

### **1.9 Organisation of Thesis**

This study or research report is organized into seven chapters. The summary of each chapter is presented graphically in figure 1.2 and followed by a description each. Finally, this thesis is aggregated with seven chapters and figure 1.2 illustrates the overall outline of the thesis organisation and flow:



Source: Developed for this study

**Figure 1.2:**  
**Outline of the Thesis Organisation**

Chapter One, presents the introduction to this thesis, giving the background and the scope of the research conducted, as well as the contribution of the research to the academia and practitioners. This chapter also provides the research questions, the research objectives, and the research theoretical underpinning. Lastly, the chapter provides the outline of each chapter in this study.

Chapter Two, deals with the review of literature. The chapter details most aspects related to supply chains and supply chain management, and the development of supply chains. The



aspects of supply chain management practices in the general perspective are covered. Also, the chapter presents discussion on meaning of supply chain integration and supply chain performance. The chapter further presents the discussion on the study of various constructs and the framework proposed for this research, as well as the proposed hypotheses.

Chapter Three, discusses the development of electronics sector in Malaysia. The historical background of the sector is provided with a focus on its evolution, along with description of the kind of industries, products, and raw materials used. The chapter also looks into various practices of supply chain management concept, and the importance of supply chain integration and performance measurement in this sector.

Chapter Four, presents detailed aspect of research design and methodology. All procedures in the research design (for example, sampling procedure, identification of target population; sample size, procedures for development of measurement items) are discussed. Furthermore this chapter also reveals the data collection, data processing and data analysis techniques.

Chapter Five, discloses the detailed analysis of survey data. The chapter presents results from the survey conducted during fieldwork in Malaysia the respondents' profiles and tests for similarities, or differences in responses. Results of the quantitative analysis performed using multiple regressions are presented, including relevant tests for the data. Furthermore, this chapter deals with the case study analysis.

Chapter Six, discusses the results of the analysis of data from survey research. Details of the results obtained from the data analysis are outlined and further supported with relevant

literature of previous study. The chapter revisits the research questions and highlights the main discussions of the study. The scholarly discussion was linked to main research findings (results of the survey) by giving answers to the questions posed earlier on in the research.

Chapter Seven, concludes the research report by pointing out the implications on the practical and theoretical aspects. This chapter also discusses the limitations encountered in the course of doing this research. It also presents suggestions on areas for future research in this subject of study, and provides the concluding remarks on the research. Finally, this chapter ends with a presentation of recommendations to various stake holders in the area of supply chain management, in particular the electronics sector in Malaysia and those vested with the task of promoting this sector in the country.

In summary, this chapter provides a clear and concise understanding of research purpose and its direction. The success of identifying the gap of the study is underlined comprehensively through its problem statement. In addition, this study offers contribution from various perspectives of theory and managerial practices.