

Chapter 1- Introduction and Background

1.1 Overview and Background

The highly competitive market organization exist in these days is continually forcing them to go beyond their usual limitations in order to sustain their competitive position in the market. Finding efficient ways to manage their financial and human resources, as well as figuring out ways to make products and offered services much more attractive and competitive is part of any organizations corporate strategy (Senter and Flynn, 1999). When it comes to developing a product for end users organizations nowadays tend to work with several suppliers each providing specific materials, services or technologies that would help in the development of their product for end users. A supply chain basically is an integrated network among several organizations that aims to produce, manage and distribute a specific product. A supply chain incorporates different parties, people, processes, activities, information flow, technology and different resources all working together to provide a service or product for end users. All activities done in a supply chain are meant to convert different available resources and materials into a well finished product that satisfies customers' thus improve the competitive standing of the organization. (Ballou et al., 2000; Senter and Flynn, 1999).

One major problem that was faced is that organizations working within a supply chain usually sought to increase their own profit within their area of involvement, ignoring the role and interest of the remaining parties involved in the supply chain. This had a direct negative effect on the supply chain in general as everyone is focusing on their individual profit without shedding much attention on the quality of the work produced from them as a whole system. Thus, supply chain management was developed as a proper way to manage the entire supply chain insuring the delivery of a high quality end product (Mentzer and Zacharia, 2000). Supply Chain Management (SCM) mainly was known as a discipline during the 90's where the traditional functions of a supply chain evolved at that time and branched into multiple paths. Ultimately these paths were combined

together into one strategic approach that covers all there is to a supply chain from processes and operations to materials, management and logistics (Tan et al., 1999). The purpose of developing SCM was mainly to insure the whole supply chain is working efficiently to deliver a high quality end product. SCM provided that through improving the way different supply chain parties collaborate and interact with each other (suppliers, manufacturers, service providers..etc), and through upgrading supply chain functions and practices from a clerical role into an essential and integral part which ultimately helped enhance organizations' competitiveness (Tan et al., 1999; Tan et al., 1998b).

Based on what was previously mentioned, Supply chain Management (SCM) practices in general can be defined as the “management of a network of interconnected business involved in the provision of a product and service packages required by the end customers in a supply chain” (Mabret and Venkataramanan, 1998). Supply chain management tracks all actions being taken to produce a finished product step by step including the storing of required materials, inventory of work in progress and work to be done. Scott and Westbrook (1991) add that SCM provides a well defined structure for supply chain processes, and links all supply chain element and processes through all stages together starting from the stage where materials are still raw ending with providing a well finished end product. Baatz (1995) also expands on that and adds that SCM also includes re-use of different materials and experiences. Based on the previous provided definitions, SCM incorporates the entire value chain as it is applied throughout the whole supply chain stages and links all functions and processes within and across companies working together into one consistent and high-performing framework (Mentzer and Zacharia, 2000). The following figure shows how any SCM model oversees all SC stages and how it tracks the flow of both the product and information related to that product.

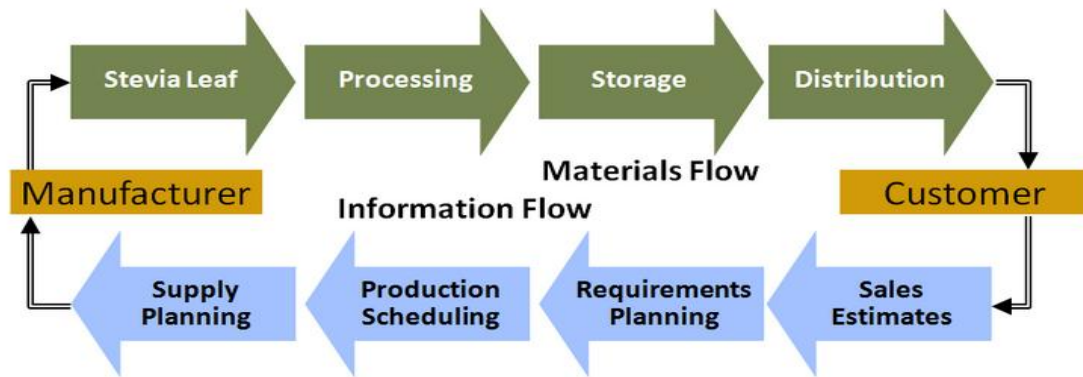


Figure - 1: Bayan supply chain management model.

Applying SCM within and across several cooperating organizations require a huge commitment of all involved parties in a supply chain. Which basically means that at any point in a project, a supplying organization may be asked to step in and help in the decision making process even in processes not assigned to them. Studies have shown that applying SCM practices has a direct influence on organizational profitability. In their research Ellram and Krause (1994) studied the effect applying SCM have on organizational profitability through analyzing multiple organizations. They found that applying SCM practices in general improves profitability by a considerable amount as there was reduction in the rate of defected parts by almost 6.4 to 21.2% in organizations that implement SCM practices, and an improvement in the delivery time by 22.9 to 25.6% as well as a 7 to 24.7 days reduction in cycle time. Their study was very insightful in providing clear reasons why more and more organizations are leaning towards partnering with other supplying organizations and what benefits they receive from such partnerships. However, even though there are some great benefits that results from forming partnerships between different organizations there are still some risks that might be faced and some pitfalls of SCM. Some of these pitfalls are unclear objectives, conflictions between work goals and mission, insufficient description of customer service, and disconnections between supply chain design and operational decisions (Lee and Billington, 1992).

Even though the development of SCM practices and modules was given a huge attention by both researchers and organization, it seems that little attention was shed on linking corporate strategy of each individual organization to supply chain configuration and management practices. Many theories were introduced by experts in the area of strategic management. These theories provided the basis for organizations to develop their strategies so they can outperform their competitors, figure out the best way to manage available resources and predict future events and future corporate performance. But as corporate strategy is very important to manage internal corporate issues, its existence and content is also very essential for and has a direct impact on supply chain configuration and management (Ketchen and Giunipero, 2004). And since corporate strategy is influenced by different work related aspects, then SCM practices will affect it one way or the other. The strategic management field as a whole incorporates many theories that were developed over the years but are not clearly linked to SCM, even though the way a supply chain is configured and then managed will have a direct effect on the success of corporations that work with different suppliers to develop any product or service for customers.

The way any cooperation between different organizations evolves depend strongly on the strategies and practices adopted by these organizations. The connection between strategy and Supply Chain Management practices is strong and the way a supply chain is configured is directly affected by the corporate strategy of focal organizations in a supply chain. Thus, the connection between corporate strategy and SCM can also be clearly detected when focal organizations in a supply chain modify their strategy or completely change it (Demeter et al., 2006).

1.2 Problem Statement

Strategic management and development should provide a clear path for any corporation to achieve its short term and long term objectives. Corporate strategy is what sets the rhythm and work environment of the entire organization. It defines the whole work scope and direction each organization takes on its way to accomplish its own goals and business

objectives (Ballou et al., 2000). Although it is clear that strategy affects the way work is done internally within the organization, it also has a direct effect on the external relationships any organization has with other organizations specially those it works closely with or develops a partnership with.

This study attempts to examine the influence between corporate strategy and supply chain management practices. Since corporate strategy is it's what sets the way work gets done by any organization, it will have a direct effect on both how that organization performs as part of a supply chain as well as on the quality end product itself. And since there must be harmony among supply chain partners when it comes to processes and activities, supply chains will influence corporate behavior as well. It can be argued that without a clear corporate strategy, an organization can't have successful external relationships and partnerships with other organizations, thus not only a strategy's content affects the supply chain but also a successful supply chain can't be well configured and managed if the organization working with external suppliers doesn't have a clear strategy.

1.3 Research Significance

As mentioned previously, strategy affects many aspects of business development, corporate environment and the way internal work related issues gets carried out. Corporate strategy and business objectives will also affect the way external relationships are formed and managed.

This dissertation will help shed some light on the importance of corporate strategy and how it affects the overall supply chain performance as well as supply chain management practices. The way any supply chain is managed is highly affected by the environment, believes and the overall way of handling business each organization has. Corporate strategy is influenced by external relationships as well. The findings of the study can provide local organizations with some guidance and would draw attention to the important role corporate strategy plays in managing supply chains and in influencing the overall organizational performance.

1.4 Aim and Objectives

The aim of this study in general is to examine the influence of corporate strategy of the main organization in a supply chain on the way the supply chain is configured and managed. Research objectives are the following:

- Investigate current theories and models of SCM and their relationship to corporate strategy.
- Examine the impact of configuration of SC on the behavior of different organizations in such a chain.
- Investigate the effectiveness of current practices in which an organization may align its supply chain for its corporate success.

1.5 Research Structure

The structure of this dissertation is a five chapter format. The order of these chapters is as illustrated in the following figure.

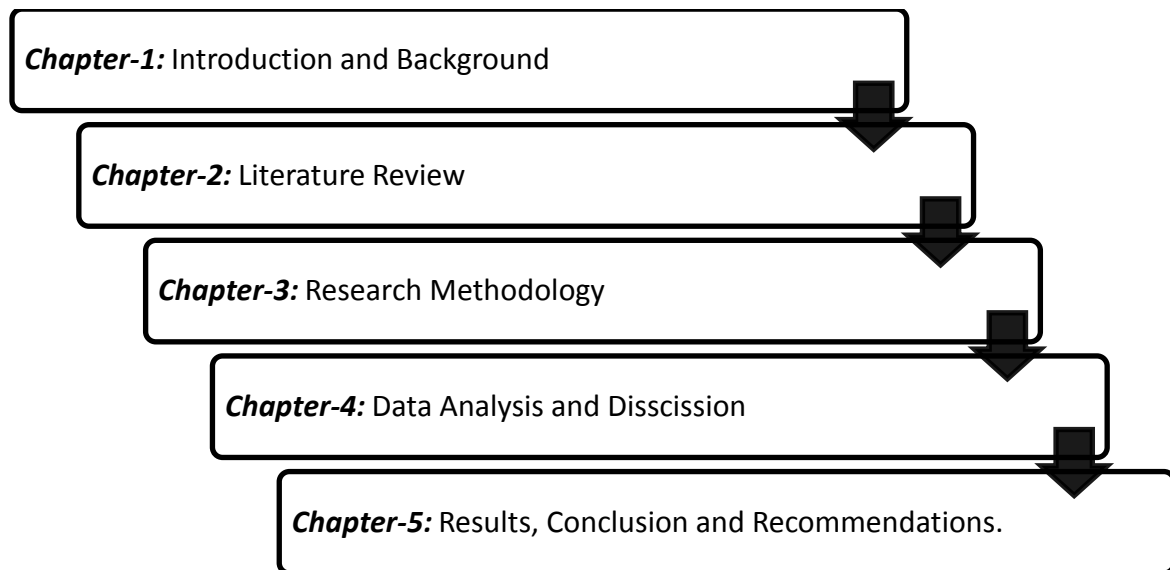


Figure - 2: Research structure.

The following provides an insight on the content of each of the five chapters, and what each chapter focuses mainly on.

- **Chapter-1: Introduction and Background**

This chapter provides a brief background on the research topic. It starts by describing issues related to the research topic and then the reasons that led for engaging in that topic. This chapter also provides a specific explanation of the research problem, research significance, aim of research and finally research objectives.

- **Chapter-2: Literature Review**

In this chapter, previous work done on the research topic and similar topics is outlined and explored. This chapter provides an extensive as well as comprehensive base of information with several sections that addresses all issues related to the research aim and objectives. Several sources of information were explored: journals, text books, articles and websites. This part was very essential in this study as it provided a frame of reference within the research area which validated the research problem. It also helped in generating several research ideas that were used to develop a conceptual framework that explained the relationships between the different issues identified in the literature and which addressed all aspects relevant to the research aim and objectives.

- **Chapter-3: Research Methodology**

This chapter starts by providing a theoretical background about the different research methods used by researchers nowadays. It illustrates the differences between these methods and explains based on what, as well as how each method is used. This chapter then goes into specifics explaining which research method is going to be utilized in

analyzing data in this research, how the analysis is going to be carried away and the method used for data collection and analysis.

- **Chapter-4: Data Analysis and Findings**

This chapter provides a comprehensive analysis of collected data using the selected research method's tools. Two different case studies are presented in this chapter, each analyzed based on the conceptual framework developed in chapter 2. Analysis findings are illustrated in this chapter and explained in details.

- **Chapter-5: Results, Conclusion and Recommendations**

This chapter provides a summary of everything that was done in this study. It rev-visits the research's aim and objectives and links them to the research findings. Then, based on the findings, this chapter provides a list of research limitations, recommendations and finally areas of improvements for future research.

Chapter 2- Literature Review

2.1 Chapter Introduction

The previous chapter provided a detailed background on the research topic. The general examination of the topic provided previously helped form the basis of the research as explained in the research problem and research significance. This chapter explores past studies done by experts on topics similar or relevant to this research topic. This chapter attempts to examine the influence of corporate strategy on supply chain configuration and management practices and thus the overall organizational performance through providing sufficient information to cover all of the research objectives. Therefore, this chapter started by providing a historical examination of supply chain management and configuration, how this field was formed as well as current theories, management modules and practices of SCM. The examination of these different aspects of SCM helped later on in studying how corporate strategy can influence the configuration of supply chain practices and management techniques, and how an organization can align its supply chain processes and activities to achieve long term corporate success.

2.2 Background information on supply chains

2.2.1 What is a Supply Chain?

A supply chain basically is an integrated network among several organizations that aims to produce, manage and distribute a specific product. A supply chain incorporates different parties, people, processes, activities, information flow, technologies and different resources all working together to provide a service or product for end users. All activities done in a supply chain are meant to convert different available resources and materials into a well finished product that can be utilized by end users (Ballou et al., 2000; Senter and Flynn, 1999).

The way organizations originally attained services or products were either through markets or hierarchies (Williamson, 1975). This basically means that organizations have the choice to either make the product from scratch or use different suppliers to help provide different required parts. Thus, this decision is called the “make or buy” decision. Many researchers over the years have discussed the factors that organization should consider when taking the “make or buy” decision. According to Handfield and Nichols (1999), this decision is very important as it affects both the predictability profitability and flexibility of the resulted work. They expand on that as they state that the hierarchy approach (decision to make) may help in increasing the work predictability. However, it will reduce work flexibility as this approach requires a huge deal of investments. On the other hand, going with the decision to buy instead of make will help enhance work flexibility but on the expense of reducing work predictability.

One of the advantages of supply chains is that they provide a middle ground between the making and buying decision. As it was defined before, a supply chain incorporates several players that work on transforming raw materials into a well finished final product or service. Required functions in a supply chain may be provided by one organization or by several organizations. As supply chains provide a middle ground between the two, it is ideally supposed to provide the advantages of both (making/buying), while avoiding the disadvantages related to each of the two. An example of that would be long term relationships created with suppliers. Such relationships provide stability and predictability; however they can also be inflexible and very hard to cope with market changes. Thus predictability is preferred but not when it at the expense of hindering flexibility (Handfield & Nichols, 2002).

Different parties involved in a supply chain may have different levels of influence on the overall performance and final product. Some parties have a more vital role more than others in fulfilling the customer’s requests. However, all parties’ roles are important and must be factorized when managing a supply chain. Thus, transporters, warehouses, retailers, and customers themselves must be taken into account as a part of the supply chain (Ballou et al., 2000). Senter and Flynn (1999) also consider all functions and

processes done by involved parties as a vital part of the supply chain. Functions are part of each of the phases of a supply chain from operations, development to marketing, finances and distribution.

The term “supply chain” may indicate that there is only one supplier or one involved party at each stage of the supply chain. Reality is, several suppliers may be involved at each stage. Thus, since the supplying and distributing process is complex and interconnected it would be more accurate to use the term “supply network” instead since it gives a more accurate description of the chain’s structure. Any supply chain incorporates several stages. However, they vary from one chain to the other depending mainly on the type of end product developed for end users. These supply chain stages include, but are not limited to: designing, supplying (variety of different suppliers), developing, manufacturing, distributing and the stage where the final product reach end users (Anand and Ward, 2004).

One of the problems that were faced by supply chains in the past is that organizations or involved parties in a supply chain usually were focused on increasing their individual profit within their area of expertise and involvement. Thus they were ignoring how their actions affect both other parties involved in the supply chain and the final resulted product. Focusing on the individual profit and not paying much attention to the quality of the resulted product had a hug negative effect on the final product as it decreased the effectiveness and the quality of work produced by the supply chain as a whole. Thus, supply chain management was developed as a proper way to manage the entire supply chain insuring the delivery of a high quality end product (Mentzer and Zacharia, 2000).

2.2.2 Historical Look on the Development of SCM

The Supply Chain Management (SCM) discipline was known and used by organizations during the 90’s where the traditional functions of a supply chain evolved at that time and branched into multiple paths but ultimately were combined together into one strategic approach that covers all there is to a supply chain from processes and operations to

materials, management and logistics (Tan et al., 1999). But the term ‘Supply Chain Management’ was first introduced in the 80’s by two consultants Oliver and Webber.

Back in the 80’s, the SCM concept was used to describe the affect integrating internal organization’s functions into one interconnected system have on the whole organization. Such functions included sales, marketing, distributing and many more (Harland, 1996). Thus, the SCM concept originally was developed to improve internal organizational functions and internal supply chains. The main purpose was to improve the flow of information and materials within the boundaries of the organization, external relationships were not part of the SCM concept back then. This original way of viewing the role of SCM is somewhat similar to the term ‘value chain’ which was first introduced and defined by Porter (1985) as he described it as the chain of activities done within the boundaries a specific firm in any industry as a way to increase the value and quality of the delivered final product or service (Harland, 1996; Porter, 1985). However, the application of SCM later on exceeded the internal firm boundaries by including all external parties involved in delivering customers’ requests.

Globalization in the 90’s made competition between organizations extremely fierce. Organizations continuously screened to find business associates and work partners that would enhance their resources and thus attract more clients/customers to their offered services/products. As the competition increased so did the obstacles faced by the organizations to produce a competitive final product at the expected due time with a lower cost and a higher quality than what competitors offer. Thus organizations had to widen the scope of SCM beyond the originally defined boundaries to include both ‘upstream production chains’ and ‘downstream distribution channels’ (Lamming et al., 2000). By the mid 90’s it became extremely important for organizations to fully understand and be capable of applying SCM in order to keep up with the pace of competition and increase their profitability (Li et al., 2006). The application of effective supply chain management (SCM) became a huge factor that insured keeping a competitive advantage over competitors and in enhancing performance as competition

within a specific industry is no longer between individual organizations instead it's among supply chains (Li et al., 2006).

2.2.3 Current Definitions of SCM

According to the Global Supply Chain Forum (1998), supply chain management is “the integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders” (Lambert et al., 1998, p. 1). As it's clear from the definition work related processes are an essential part of SCM, and logistics is not highlighted as it is not considered more important above other factors. However, some researchers disagree with that as they consider logistics to be closely related to SCM. For example, Gattorna and Walters (1996) equate SCM to integrated logistics. They state in their research that in a short time, distribution management became known as logistics management and that logistics management has been developed further more by forward-thinking organizations into supply chain management. Moreover, New and Pyne (1995) add that logistics is an essential business function that evolved over time into supply chain management. However, many researchers have reached to the conclusion that there is a significant difference between supply chain management and logistics management.

According to Lamming (1996), the actual physical transformation and formulation of the product from one stage to the other is not very critical based on his view of SCM. He adds that the focal focus of SCM is managing the distribution of the product efficiently from one stage to the other in an attempt to replace inventories with information. However, the SCM scope expanded with time to cover more focal business functions and processes that goes beyond internal organizations focus. Even through the SCM concept has spread widely through different major businesses and academics, it seems that there is no unified consistence for its exact definition (Harland, 1996; Tan, 2001). SCM as a concept was researched and defined by many researchers in the past, and it still is attracting many researchers attention as it is a valuable topic.

SCM literature is filled with different definitions; each addresses a different side or a different stage of SCM. Some define it from a strategy's point of view, some relate it to business logistics and others view it as an integrated business strategy. (Tan et al., 1998a; La Londe and Masters, 1994). Based on his research, New (1996) explains that the different available definitions and interpretations of SCM show clearly that there is a deep vagueness related to the SCM concept and scope. This was also argued by Tan (2001), as he clearly state in his research that even though there are some shared ideas between the different definitions and interpretations of SCM, there is still no unified definition. Based on Harland (1996), the SCM concept has been examined by many bodies of knowledge; however these examinations remained more or less unconnected to each other. Some of these bodies of knowledge are (Harland, 1996):

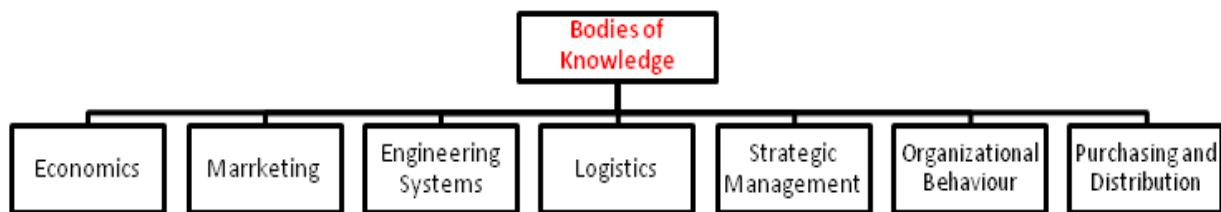


Figure - 3: Bodies of knowledge that examined SCM concept (Harland, 1996)

A border definition of supply chain management that does not focus on a specific aspect would be that it incorporates the entire value chain, and follows all supply chain stages starting from the extraction of raw materials and ending with handing a useful successful end product or service. However, each researcher usually focuses on a specific aspect of supply chain management and addresses elements relevant to that aspect, usually only focusing on immediate suppliers of an organization (New, 1997). Scott and Westbrook (1991) for example describe SCM in their research as the glue that keeps all the elements, stages and processes of a supply chain linked together starting from initiation stages of the project, through designing and manufacturing and ending with the stage where the product or service is ready to be handed to end users. On the other hand Harland (1996)

views supply chain management as the way all business related activities and organizational relationships is managed on several levels which are: the internal organizational level (internal level), the relationships with direct organizational supplies (external level) and the relation with indirect organizational suppliers (external level).

Some researchers expanded their definitions of SCM further more. Baatz (1995) for example expands on the broader view of SCM by including the process of recycling and reusing of materials in other business parts. Farley (1997) on the other hand relates SCM to enhanced competition advantage as he describes it as what helps utilizing suppliers to the highest extent insuring the best possible performance. Lee and Billington (1992) also add that SCM provides competitive advantage by organizing the internal organizational processes, logistics and functions. They also go further by stating that enhanced organizational performance can be achieved if all organizations in a supply chain integrate their processes and work as a one single unit. Some researchers have contrasting descriptions of SCM, some have used the term SCM to describe the way internal issues within one organization is handled, others use it to describe alternative organizational structure (Thorelli, 1986). Other researchers also relate SCM to the type of relationship between any organization and its external suppliers (Lamming, 1996; Hines, 1995). Croom et al. (2000) provided a table of the different contrasting views of SCM in their research, refer to Table – 1 in Appendix – A.

There is a lot of research done on SCM by many researchers in the literature. However, not all researchers examine supply chains as a whole entity starting from the organization itself and ending with each supplier. Instead many researchers examine only one side of the supply chain, either the upstream or downstream sides or specific aspects related to SCM (Shah et al., 2002). There are a lot of SCM aspects such as: supplier selection methods, the extent of supplier involvement, supplier performance, supplier management and factors that contributes to a successful supply chain. All of these factors have been examined by researchers on the supplier side (Stuart, 1997; Narasimhan and Jayaram, 1998).

Only few studies considered both upstream and downstream aspects of a supply chain at the same time. For example Tan et al. (1998), examine the relationships between suppliers (partners) management techniques, customer's satisfaction and how an organization performs along the way. Frohlich and Wesbrook (2001) also examine how the integration between suppliers and customers will affect the organizational performance in general. Cigolini et al. (2004) on the other hand study how SCM practices influence organizational performance and thus develops at the end of his research a set of techniques that would enhance SCM performance. Put together, each of the previous mentioned studies examines SCM from different but still interesting perspective. However, it is clear that there is no integrated framework that incorporates all activities and practices of both upstream and downstream sides of the supply chain by which an SCM can be examined as a whole. This lack of a universal perspective will make it even harder to apply any of the results recommended by each individual study.

However, even though there are many different and contrasting definitions of SCM available in the literature, Saunders (1995) argues that most of these definitions has at least one thing in common. He states that almost all definitions mainly focus on the outer situation of an organization rather than the inner. Cooper et al. (1997, p. 4) identify a number of similarities between the different available definitions of SCM, which are the following:

- 1- SCM evolves through different levels and different work stages. It incorporates and spans suppliers starting with the farthest suppliers with limited influence on the supply chain, and ending with the end users of the final product.
- 2- SCM incorporates many organizations and therefore it provides a management framework for both internal and external organizational issues and problems.

- 3- SCM includes passing information and products in both directions of the supply chain as well as all activities and processes necessary along the way.
- 4- SCM aims in general to use available resources in the best and most efficient way possible in order to provide customers with the best end product.

2.2.4 SCM Different Practices

There are a number of aspects related to supply chain management. These aspects incorporate several activities and practices. In general, SCM practices are defined “as the activities undertaken in an organization to promote effective management of its supply chain”. The evolution of SCM also influenced its practices and made it include: information and processes flow, technological tools, outsourcing, business enterprise and time compression methods. Many researchers focus on different SCM practices in their research. For example, Tan et al (1998) include quality of work and client/customer relationships as part of their SCM practices in their research. Alvarado and Kotzab (2001) focus on business core competencies as well as the use of internal organizational systems. Tan et al. (2002), also presented six different aspects of practices which are: client/customer service management, SC characteristics, information and process sharing, SC integration, “JIT capability” and “geographical proximity”. Some researchers on the other hand used some SCM practices to measure the extent of relationship between different factors and how they influence each other. An example of that is Chen and Paulraj (2004) research as they used: communication levels, type of relationships (long-term or short-term) and the amount of supplier involvement to measure the level of relation between customers and suppliers. Thus, even though SCM practices throughout the literature are examined through different perspectives, each of them focuses at the end of the day on improving organizational performance.

However, throughout the SCM literature, five different main SCM practices can be distinctively identified which are: “customer relationship”, “strategic supplier partnership”, “quality of information sharing”, “level of information sharing”, and “postponement”. These main dimensions also incorporate both upstream (strategic level)

and downstream (customer level), the frequency of information sharing as well as the internal work processes used. Following figure represents the five different main dimensions of SCM practices. Refer to Table -2 in Appendix – B for a list of definitions.

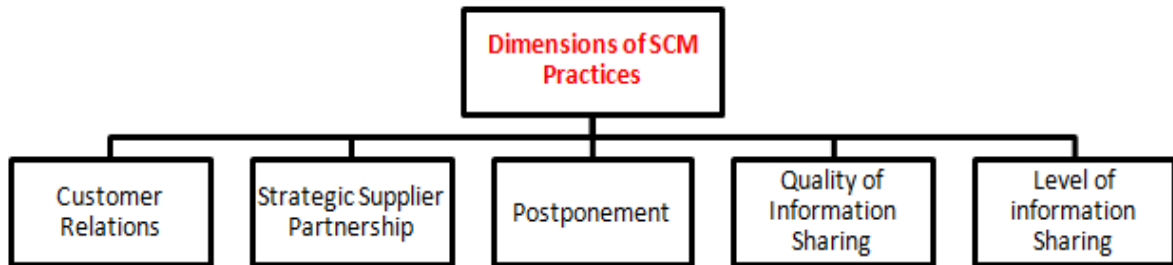


Figure - 4: Different SCM Practices.

It's important to add that even though the five dimensions mentioned above represent the main SCM practices, there are also other practices that can be considered when analyzing SCM such as: geographical propinquity, adaptation capability (Tan et al., 2002), multi tasking teams, integration of different logistics , unified goals and unified supply chain leadership (Chen and Paulraj, 2004). The following sub-sections provide a detailed definition of each of the five main SCM practices.

2.2.4.1 Strategic Supplier Partnership

Strategic supplier partnership generally defines the relationship developed between any organization and its long-term suppliers. It mainly focuses on powering the strategic abilities of each individual organization in a supply chain allowing them to achieve continuous benefits (Balsmeier, 1996; Gunasakaran et al., 2001; Monczka et al. 1998). It also emphasizes on mutual planning among all organizations as well as mutual problem solving (Gunasakaran et al., 2001). Such relationships are described as strategic because it helps in providing shared continuous benefits among partners in one or two strategic areas such as markets (Yoshino and Rangam, 1995). Such relationships help organizations work more efficiently with key suppliers with the aim to provide a

successful end product/service. Having these close suppliers involved from the start of the product design means that they can help in finding solutions to early on problems, find some cost friendly design alternatives, provide the best product components available and ultimately help in the designing process of the product (Tan et al., 2002).

2.2.4.2 Customer Relationship

Customer relationship on the other hand is meant to deal with all the customers' issues and complaints, acquiring long term relationships with customers and thus reach customer satisfaction towards the offered product/service (Claycomb et al., 1999). This dimension of SCM practices is considered very important in determining the successfulness of any supply chain. In his research, Day (2000) mentions that long term relationships with customers is an ongoing advantage since it helps win over competitors because of their customers loyalty. It is crucial to manage customers very well and keep the lines of communications open between the product providers and customers in order to guarantee the survival of any organization. Close customer relationships help organization customize their products to better fit customers' expectations in order to differentiate their product from what competitors are offering (Magretta, 1998).

2.2.4.3 Level of Information Sharing

As for the level of information sharing, it mainly can be examined through two different aspects. Which are the quality of information sharing and the quantity of information sharing. These two aspects are independent from each other and have been examined separately by researchers in the past; however they both influence the performance of SCM (Monczka et al. 1998). As for the quantity aspect it refers to the amount of information being shared among partners in a supply chain. Information can be crucial and strategic in nature and it can be related to project logistics, work activities or customer feedback (Mentzer and Min, 2000). Researchers agree that the key to a successful management of a supply chain is having updated undistorted information shared regularly with all partners working in a supply chain (Balsmeier, 1996; Gunasekaran, 2001) Information sharing can help in finding solutions to problems very fast, and it can provide a competitive advantage over other supply chains (Noyack et al.,

1995). Based on their research, Stein and Sweat (1998) state that information shared among partners help them perform as one entity. Lalonde (1998) confirms that also by stating that the level of information sharing is one of the main factors that decides whether a supply chain is successful or not. He also adds that this will help respond to customers' needs and provide them with a better end product, as well as enhancing the ability of adapting to market changes very fast. Furthermore, Tompkins and Ang (1999) add that timely sharing of information is a distinguishing factor of an efficient effective and competitive supply chain.

2.2.4.4 Quality of Information Sharing

As for the other aspect of information sharing (quality), it defines how accurate, timely, reliable and adequate shared information is (Mentzer and Min, 2000). Even though information sharing is very important in general, not all information has the same impact on the performance of a supply chain. SCM depends on what, when and how information is shared between partners in a supply chain (Chizzo, 1998; Holmbrege, 2000). Many researchers have examined through the years the impact of delayed and inaccurate information on work performance in general and on SCM in specific. Inaccurate information is usually the direct cause of partners having an opportunistic behavior seeking individual benefit instead of looking out for the benefit of the entire supply chain. Also not having a systematic way of sharing information between partners will cause a delay in moving crucial information along all the nodes of a supply chain (Lee et al., 1997). It has been suggested by some researchers that some organizations deliberately pass on inaccurate information to insure it will not benefit any of their competitors in case they manage to reach it (Holmbrege, 2000). Since information is perceived as power, many organizations are reluctant to share more than the minimal amount of information with their partners (Berry et al., 1994). Given all these challenges, a proper way of sharing information is a critical part of an effective SCM. Thus, information sharing must be viewed as a strategic advantage rather than a power loss.

2.2.4.5 Postponement

Postponement is the practice of delaying or moving some of the work activities into a later point in the chain. This practice should be planned carefully by determining: which activities to be delayed and for how long (Beamon, 1998; Fuller et al., 1993). Postponement allows organizations and supply chains to be more flexible in carrying out their activities and allows them to respond more to customers' requests and needs. Having the required materials undifferentiated for the longest time possible will allow organizations to respond to changes in the market or to customer's requests faster (Lee, 1995). Even though this practice is done by many organizations and supply chains it still is carried out differently depending on the type of market, type of organization, logistics and the developed product itself (Pagh and Cooper, 1998; Lee, 1995). The most proper circumstances to adopt the practice of postponement is for innovative projects, projects with a high interest rate among customers, projects that require a long time to deliver their final product and projects with high uncertainty (Pagh and Cooper, 1998).

2.3 SCM modeling and Performance Measures

Managing supply chains can be complicated. Loyalties of involved parties in a supply chain may still remain with their own organizations focusing on their own profit rather than the overall supply chain profit. Such problems can be addressed through the full understanding of what distinguishes an effective supply chain from an ineffective supply chain, which is the main focus of SCM.

Many modeling approaches for SCM were adopted over the years by experts to insure the best performance and the best final results. However, the global and highly competitive market organizations exist in these days is forcing them to reorganize and modify their supply chains to better suit such competitive market. Also, supply chains are becoming more and more complicated and closely integrated across different partners. Therefore, it is becoming so crucial to respond to supply chain events in real time through a real time sense. Supply chains must be flexible, alert to changes and thus be responsive to these

changes. Accordingly, a responsive supply chain must be able to handle any number of expected and unexpected events (Romano and Vinelli, 2001).

2.3.1 Factors Associated with SCM Modeling

The unplanned events that happen through different stages of a project are called exceptions, mainly caused of a gap between the planning and execution stages of a supply chain (Power DJ el at., 2001). The planning stage aims basically to set a goal possible to achieve based on available information, known constraints within a given time frame. In a dynamic environment however, supply chain constraints are never constant always changing, thus exceptions from the original plans will occur on a regular basis. Some examples of exceptions are: machinery problems, delays in delivery or out of stock components all of which are very costly. Additionally, such exceptions usually have an extended effect across all partners in a supply chain resulting in the bullwhip effect (Porter, 1985). These risks should be counted in SCM models to insure they have the required mechanisms for managing unexpected events and responding fast in any dynamic environment.

SCM is based on events; these events basically represent the outcomes of supply chain processes or activities (Moberg el at., 2002). When several events are interconnected and aligned to each other and thus form a cloud of events. However, not all events are of the same importance. Some events are more significant than others and result in more consequences. Thus, significant events must be monitored carefully and proactively at all times in order to simulate their behavior and therefore be able to measure them, predict them and use them in decision making (Romano and Vinelli, 2001; Stuart, 1997). There are different types of events that occur in any organization, they can be narrowed down to three main types: 1- “task status related events” which basically indicate the beginning or ending of required tasks. 2- Events formed by required tasks. For example events such as “out-of-stock” are the direct result of the “check inventory” task. 3- Events that are initiated externally. An example of that are events caused by other partners in the supply chain like new orders and work polices. Since supply chain partners must work closely

with each other to achieve good results, events initiated by one partner will have an impact on other partners in the same supply chain. Also the way these partners respond to event can be the cause of a storm of new events. Thus, the way to control such a storm of event is by using causality analysis (Moberg et al., 2002).

There are also a number of risks associated with SCM some of which are related to distribution others to delays and other are related to unplanned events (Sodhi, 2004). Thus, there are many risks that can occur at different stages of a supply chain, but these risks can be categorized into six main types: “supply risks”, “process risks”, “demand risks”, “intellectual property risks”, “behavioral risks”, and “political/social risks” (Tang and Tomlin, 2008). The way these risks are dealt with differ from one supply chain to the other. Some supply chains deal with possible risks at the strategic level (long term), and some deal with them at the tactical level (medium term). At the medium level, which is usually 12 – 24 weeks long, supply chain planning (SCP) must incorporate all types of risks that may occur at that level such as: out of stock components and shortage in inventory. As for the long term supply chain planning, it must incorporate many uncertainties and thus simulation programs only will not be sufficient enough to model a supply chain and its processes. Scenario planning may be used as well to predict long term events (Sodhi 2004).

2.3.2 Current SCM Modeling Methods

There are also several current ways used to model supply chains, their processes, risks and future events. For long term planning, system modeling is done through three main ways which are: 1- running a number of “deterministic models”, 2- simulating a number of “deterministic models”, and finally through 3- “stochastic programming”. However, for the short term planning, risks and unexpected events are dealt with operationally and are not considered in the modeling part as they can be fixed or altered easily without having a huge impact on work progress. As for the medium term, it includes for example planning for the production and distribution taking into consideration one single demand prediction. For medium term planning in SCM the “what-if” forecasts are often used in

different runs in order to narrow down vagueness and ambiguity. However, applying different runs of “what-if” forecasts will not be accurate enough in predicting and managing all supply chain risks since it does not take into consideration some aspects such as sufficient liquidity, surplus inventory or huge customer demand. Under stocking or over stocking are inventory problems that can be sufficiently managed by utilizing specific rules or algorithms that are meant to monitor and manage the level of available inventory and respond accordingly. (Zipkin, 2000; Tang, 2006).

Most of the models used in inventory management focus on one thing only which is determining the best ordering quantities that insure the least possible unexpected long term costs associated with inventory. One disadvantage of such models is that they do not take into consideration the risks associated with the organization’s cash flow. Acquiring new materials when there is a huge demand or getting rid of excessive materials when there is a low demand all are associated with the organization’s cash flow. To fix this issue some researchers suggested using “multi-echelon inventory theory” as a more proper way to consider uncertainty in inventory management (Zipkin, 2000). However, based on Tang’s (2006) research, the previous approach will be useful in specific cases only but will not be proper for products with short life cycles and will not be easy to trace in supply chains that are complex and interconnected with different products and suppliers. Another way was by considering uncertainty in a different perspective and context, the decentralized SC context (Clark and Scarf, 1960).

However, decentralized supply chain planning models is not compatible with centralized planning for complicated and interconnected supply chains. And thus such mathematical modeling might cause some implications if applied in a complex supply chain. Stochastic programming on the other hand had been applied in different types of planning: telecommunication systems networks planning, monetary planning and power generation planning (Sen, 2001). It can be also utilized for medium term planning when there is uncertainty about customers demand. Even though stochastic programming has many advantages especially in an uncertain environment, it has not been widely used in supply chain planning. According to many researchers, stochastic programming is an efficient

way that can be utilized in supply chain management and planning. However the use of stochastic programming is still limited mainly to some applications in the financial sector which goes back to the 1960's (Birge and Louveaux, 1997). Stochastic programming modeling options and solutions must be thought of carefully and must be matching work objectives in every way. A simple example of a stochastic program would be modeling a supply chain plan that includes providing products through different suppliers, how these supplies will end up forming a finished up product and finally the stocking of these finished products under an uncertain customer demand rate (sen, 2001).

Another approach that was used in modeling SCM plans is Petri nets. Petri net in general is a modeling approach utilized in finding solutions to problems having coordination in several different domains. This modeling approach helps in modeling and simulating time intervals as well. Taking into account the dynamic nature of supply chains and their events, Petri nets considers time constraints and limitations associated with supply chain processes and events. As explained before some events in a supply chain can't start unless some other events are done, or after a specific amount of time has passed. Thus, such constraints (event constraints and time constraints) are taken into consideration when modeling using Petri nets. Even though some constraints are temporary in nature, but they should be taken into account or else it will be very hard for the management to track events, their causes and the right time to initiate or alter the initial plan. Patterns can also be detected for sup SCM using time colored Petri nets.

Rong et al. (2007) has developed a way to module the relationship between different events in a supply chain using Petri nets approach. Seven main patterns that describe cause/result relationship between events in Petri nets were utilized. These seven main patterns were then combined together to develop more patterns and thus more complicated Petri nets. They used several examples to illustrate in details how events are interconnected and dependant on each other using dependency graph analysis which is an illustration of how events are dependent on each other in a dynamic environment, much like supply chains. The correct timing of each event is very crucial, as any slight change in event timings will results in noticeable change in the dependency output graph and

thus a noticeable change in the final results. The advantages of this simulation approach is that it is available easily for organizations as there are different Petri nets packages these days for interested users. Also different parameters (e.g. event motion time) can be changed and modified in order to test how each event or group of events affect the performance of the supply chain and the final result (final product). Changing different parameters allows the testing of different scenarios and shows how each scenario affects the performance of the supply chain in a dynamic environment. Thus, this will help managers make more wise and well thought of decisions (Rong et al., 2007).

In general, Organizations in practice put a lot of emphasis on stress test simulations “Monte Carlo Simulations” when testing proposed ideas. Such simulations are considered simple compared to other types of simulations that try to grasp the behavior of a dynamic system. However, many managers prefer such simple simulations because they are much easier to understand and apply. According to Zabawa, J. and Mielczarek (2007), in the future the Monte Carlo simulation technique might be used in the fields of risk prediction and production plans under a number of what if scenarios. These scenarios can either be manually crafted or generated by computers to consider customer demands, inventory and market.

2.3.3 SCM Performance Measures

It is undeniable that it is extremely essential for any work process with different stages and different work activities to have a proper evaluation strategy (Bititici et al. 2005). Work processes of any organization include various aspects, such as: internal work progress, external relationships, finances and customer satisfaction. From early on, organizational work performance was measured and evaluated by the results of accounting department. Income profit and ongoing cash flow were the only aspects that were relevant to an organizations performance back in the day (Morgan, 2004). However, even though the financial performance of any organization is very important, it still does not capture the whole organizational performance. Financial performance measures mainly focus on measuring the relationship between inputs and outputs of any work

process in financial terms (Neely, 2003). That basically indicates that the evaluation process focuses on how well were the inputs converted into outputs without shedding any attention on the used activities and the way inputs interacted together to produce the end output.

The narrow vision of financial measures made it impossible to capture and evaluate the whole benefits of different work processes, especially in an ever changing business environment (Behn, 2003). Thus, different performance measures were developed and utilized by different organizations and work processes. And like any other work process, SCM also uses these measures to track the progress of work and evaluate the effectiveness and efficiency of different work aspects (Drucker, 1995). The different measures set to evaluate SCM performance are meant to take in feedback and information on work activities and to what extent it matches customer's requests as well as predetermined strategic objectives (Chan, 2003). Thus, it grasps attention to areas that should be improved or altered completely in order to reach a better work quality and efficiency and eventually reach a satisfactory performance. There are a number of SCM performance measures that were mentioned and examined by a number of researchers in the literature. A detailed explanation is provided below on each measure.

2.3.3.1 Order Path

In any typical organization, the first work related activity is the procurement of the required order. The way the order path is organized and the timing scheduled for each activity will have a direct effect on work performance in the downstream level, up to the stage where the product is available to customers. Therefore, in any evaluating performance system it is essential to focus on the way orders are done. To do so, all aspects related to the order path should be analyzed closely. The way the order path is typically organized is shown in the figure below (Gunasekaran et al., 2001).

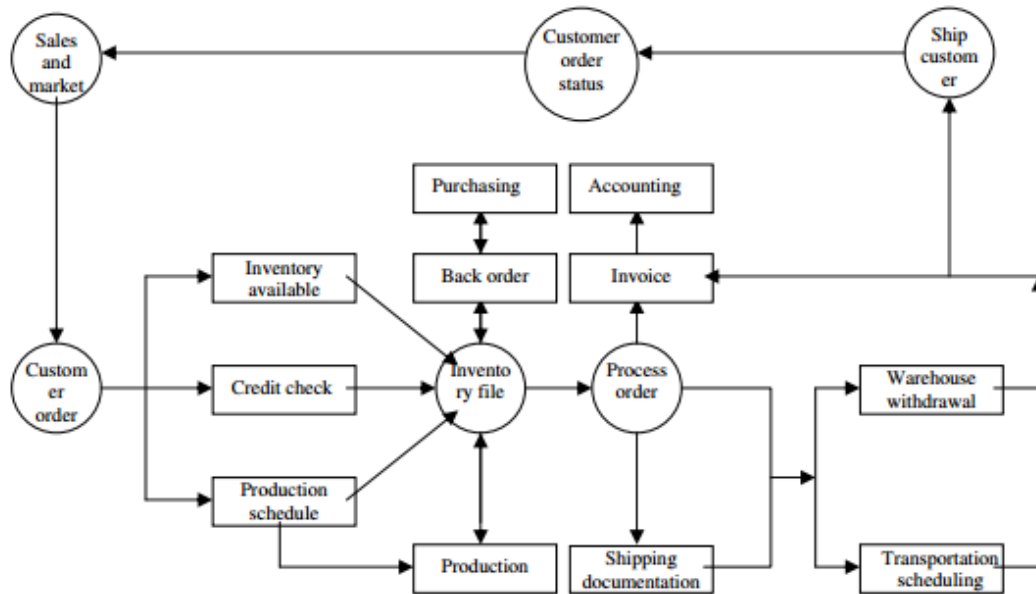


Figure - 5: The typical customer order path (Christopher, 1992).

The aspects related to the order path are discussed below:

- **The Order Entry Method**

The entry method basically indicates the degree to which customers' requirements are understood and transformed into useful information that can be passed down to people at different stages of a supply chain. Information collected from the customer represents the basis of all work to be done to produce an end product that matches their expectations. Thus, entry method of collected information is crucial as it connects all stages within a supply chain with each other and will have a direct influence on work activities and scheduling. The order entry method must provide detailed and accurate information to all stages in a supply chain in a timely manner. Hence, it can be considered as a performance measure (Towill, 1997; Gunasekaran et al. , 2001).

- **Order Lead-Time**

It's also called the order cycle time, and it is used to refer to the time between receiving customers' requests and providing them with the final product that matches their requirements. The order lead time incorporates the following elements as well:

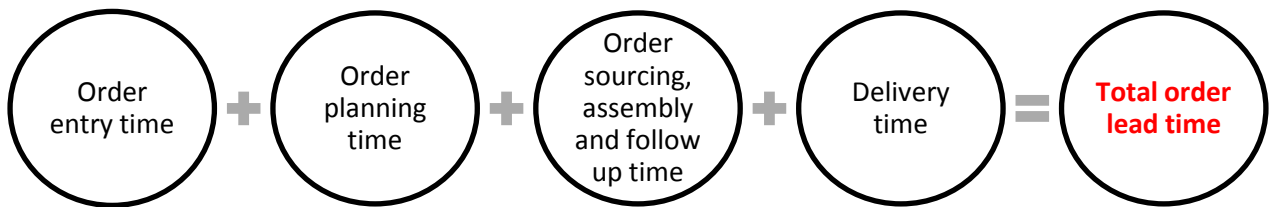


Figure - 6: The order lead time element (Gunasekaran et al., 2001).

Planning time includes the time required for the design stage, work activities scheduling and time required for communication. A very important source of organizational competitive advantage is reducing the order lead time (Gunasekaran et al., 2001). Towill (1997) states that it has a direct effect on the level of customers' satisfaction

- **The Customer Order Path**

The path information pass through is also highly important. Analyzing it helps identify value adding activities and thus eliminate any activity with no actual value or negative effect on the final results (Gunasekaran et al., 2001). Information technology methods such as JIT can be utilized for such uses. An example on activities that add no value is: time delays, paperwork time consumption, time consumed while the product is kept in the warehouse before being distributed and sold and time consumed rechecking previous work. All that non value adding activities can be reduced or eliminated completely by tracing the order path.

There is also a new factor that received a lot of attention by researchers. People in the industry as well started recently pushing for it and promoting it, which is the buyer-supplier relationship (for example: Ellram, 1990; Gunasekaran et al., 2001; New, 1996; Towill, 1997). Most researchers stress on the fact that there should be a strong relationships and partnership between suppliers and buyers. And thus the extent of their relationship must be evaluated frequently and improved according to a predetermined set of measurements. Such measurements were identified by Gunasekaran et al. (2001), refer to Table – 3 in Appendix - C for more details.

2.3.3.2 Customer Service and Satisfaction

As mentioned previously, buyer – supplier relationship is very important. Thus customers' requirements should be highlighted and monitored closely. This measurement goal is to incorporate customers' requests and preferred specifications into the design in progress, provide efficient ways of communicating information back to customers at every stage and keeping them in the loop. The first factor that influences customer satisfaction and can be used to measure the level of provided customer service is flexibility. Being flexible when it comes to provided services or products means that it matches each customer's individual needs and requests which has become available through the development of many advanced technologies. Such technologies include: “flexible manufacturing systems (FMS)”, “group technology (GT)” and “communication systems (CS)” which provides customers with online information and extra features and facilities. This flexibility will help increase the competitive advantage of organizations as it will help win over customers (Gunasekaran et al., 2001). Thus, considering flexibility as part of SCM performance measures will help organizations achieve fast response time that satisfies individual needs.

Another factor to customer satisfaction measurement is customer query time. This is the time organization takes to respond to a customer's query regarding required information. Along the way, customers will have some questions and may need some information about the progress of work, the status of the order, information about available stock or

the time they can expect to receive the final product. The faster the customers receive a respond to their query the better it is for maintaining a strong buyer-supplier relationship. Thus, it will be suitable for both the customer and the supplying organization to keep information available online at all times. To measure the customer query time the questions “what are the response times”, and “what procedures exist to inform customers” should be considered (Gunasekaran et al., 2001).

Even though supplying customers with the products in a timely manner is very important, but post transactions are also a huge factor that influences customers’ satisfaction level. The post transactions with customers after receiving the final product provides a source of feedback information that can be utilized later on by the organization to improve the product to better match customers’ expectations and needs. It can also make the buyer-supplier relationship much stronger therefore be used as a performance measure for future work (Gunasekaran et al., 2001). According to Thomas and Griffin (1996), the nature and extent of relationship between customers and suppliers influences the final quality of the product. There are several elements that should be taken into account when evaluating the post transaction level, some of which are:

- Comparing service level and performance to the level and performance offered by competitors.
- Measuring customer’s opinion of the offered service or product by interviewing customers directly and asking them several questions to measure their perspective.

2.3.3.3 Production Level

The way the production process is conducted has a huge influence on the performance of SCM. Thus, it should be well managed, measured by using suitable metrics and finally be improved accordingly. One important factor here is the range of offered services or products. An organization that has a wider range of different products or services will most likely produce new services or products at a slower rate compared to organization with a narrow focus on products it produces. Furthermore, organizations that offer a

wider range of products are also most likely to have a poor performance in their working speed, work reliability and added value per employee (Gunasekaran et al., 2001). According to Fisher (1997), such organizations also with a huge number of offered products will be less likely to produce any innovative new products or services. Thus, this is a clear indication that the product range should be considered and examined closely when measuring the performance level of an SCM.

Another important factor is the efficiency of the selected scheduling technique. Scheduling basically refers to the exact time and date activities are to take place. Such scheduling will help determine how resources will be distributed throughout the entire system. This as a result will have a huge impact on the performance of the supply chain (Gunasekaran et al., 2001). For example, schedules generated by computer systems like the MRP system will help in providing an accurate bill of required materials and provide all necessary details about each of the materials. Such available information will have an impact on the purchasing process in future work projects taking into account the time span of activities and the size of the ordered batches. In supply chains, scheduling depends mostly on supplier performance and customer demand. Thus utilized scheduling tools and/or methods should be examined closely and their performance should be measured on a regular basis in order to improve the performance of the entire supply chain.

2.3.3.4 Delivery Link of Products and Materials

Both the delivery and distribution cost in any supply chain has a direct effect on the performance of that chain. Measuring the performance of any delivery mode depends on several aspects, which are: the selected delivery channel, time scheduling for vehicles to pick up products, the location of the warehouse (Gunasekaran et al., 2001). Thus, each of the three mentioned aspects can be altered in a way that increases the performance of the supply chain. Based on their research, Gelders et al. (1994) conclude that there are several opportunities to increase supply chain performance only by improving the lead time in the delivery process. They also add that the most important thing is to fully

understand the connection between selected delivery and distribution channels and the organization's activity and operating time schedules.

Furthermore, on-time delivery of products is considered one of the most important aspects that affect customers' satisfaction level towards offered services and products. Another important aspect when it comes to evaluating the delivery line of products is the amount of goods being transmitted at once. A huge amount of goods being transmitted basically indicates a low inventory turns, which in return leads to an increase in the amount of unavailable capital money. Some of the factors that may have a direct or an indirect effect on this aspect is the speed of vehicles transmitting the required goods, the reliability of the vehicle drivers, how often delivery of goods occurs and the selected locations of depots. Any increase in the effectiveness of any of the previously mentioned factors will cause a decrease in the inventory levels. Thus, delivery of goods should be considered as any other activity that depends heavily on the quality of shared information among the people working in a supply chain to maintain a balanced level of inventory (Gunasekaran et al., 2004).

2.3.3.5 Supply chain Finance and Logistics Cost

Determining the exact total cost of logistics in any organization will be helpful in measuring the financial performance of the supply chain. Such cost related information must be available to all working stages of a supply chain through pre-determined and accurate techniques and strategies. Some of the important factors to financial performance are the costs associated with available resources and return of investments. Supply chain has many assets (resources) which include equipments, materials, plants and inventories (Stewart, 1995). With the high increasing prices organizations are faced with, and the decreasing of liquidity organizations are pressured to perk up the productivity rate of their own capital. Thus, it is extremely important for organizations to examine and analyze how costs are linked to each asset without ignoring the earnings impact on the total cash flow time. Based on Stewart (1995), this can be done by measuring the approximate number of days it takes to transform the cash invested into

cash collected from customers at the end stage. Determining the total cash flow time and combining it to the collected profit will help in measuring the rate of return investment (ROI). Accordingly, the financial performance of the supply chain can be measured and efforts can be then provided to improve it.

Another important factor when it comes to financial performance is the total inventory cost. In supply chains, inventories may be unused raw materials, semi-assembled parts of a product, fully assembled products or products that are being shipped to a specific destination. Inventories were perceived before as simply a buffer between the production and distribution stages of any product. It was helpful specifically in facing uncertainties that emerge through any of the supply chain stages. However, its importance has increased rapidly and it has become one of the major reasons of an increased lead time (Slack et al., 1995). A proper way to manage evaluate and improve inventory related costs is becoming essential to improve the performance of any supply chain. Specific measures should be utilized to keep it on a balanced level. Based on several researches (Christopher, 1992; Slack et al., 1995; Stewart, 1995) costs related to inventory includes the:

- Costs related to warehousing and storage of products.
- Cost related to work in progress as stocks are arriving.
- Costs related to management and maintenance of available stock.
- Hazard costs, which are related to weakening or damage in stocks.
- Cost related to rework inventory activities.
- Cost related to shortage of inventory due to lost sales or lost production.

2.3.4 A Supply Chain Evaluation Framework

Supply chain process and day to day activities has direct implications on the long term strategic goals. Thus it is important when evaluating supply chain performance to connect

it to the strategic goals of an organization. In his research Miller (2001) came up with a framework that consists of three different levels which are: the strategic, tactical and operational levels. These different levels connect supply chain operations to corporate strategy and helps in planning, modeling and performance measuring of supply chains. The following figure shows the hierarchical supply chain framework.



Figure - 7: Miller's hierarchical supply chain framework

At the first level, strategic level, involved organizations in the supply chain must address first the overall corporate main goals and objectives. Such strategic objectives include different areas such as productivity, profitability, facilities, market shares, work locations, resources and many more important long term decisions and objectives for the coming five or seven years (Miller, 2001). Supply chain operations and main goals must be compatible with the strategic goals set by the corporate strategy.

When it comes to the second level, often decisions made at the strategic level will have a direct influence on the decisions made on the tactical level. The tactical level decisions in supply chains can be described as an expanded view and more detailed description of the strategic level decisions. Putting the main strategic goals and decisions in mind, tactical decisions must provide details on how to carryout work activities and plans to carry them

out. For example, organizations at this level decide on available resources and capacities and allocate them to production lines that will carry out the work. Also, at this level organizations decide on the most proper inventory management plans that need to be utilized among all partners. Accordingly, the work plans and decisions at this level are not considered long or short term decisions; rather they are considered mid-term plans that can include a span of ten to twelve months.

Similarly, decisions and plans decided on in the tactical level will influence work activities and decision making in the operational level. Tactical level decisions and plans provide a framework and sometimes some constraints on work related activities in the operational level. Decisions and plans at this level often are on a weekly or monthly basis and include work schedules and stock levels. This level is considered to be the base level as feasibility plans and decisions at the strategic level get tested and their actual impact is revealed. Sometimes what appears to be feasible at the strategic or tactical level may turn out to be not that efficient and thus not feasible as it was first preserved (Miller, 2001).

In order to avoid feasibility problems and be able to modify supply chain plans and decisions to get better results, Miller's framework suggested feedback loops. These feedback loops go from tactical to strategic levels and similarly from operational to tactical levels. Thus, information moved in this closed loop will include influential and feedback process and activities that will help improve future plans and work feasibility for all organizations involved in the supply chain. Similar to Miller's work, Gunasekaran et al (2001) came up with a cohesive framework that addresses all of what needs to be dealt with in any evaluation system. The performance measures used in the framework have been divided into strategic, tactical as well as operational levels. They have been also illustrated as financial or non-financial measures. Such classification is useful to help organizations identify which of the measures should they apply and which is not suitable for their work activities. The evaluation framework measures developed by Gunasekaran are available in Table – 4, Appendix - D.

2.4 Supply chains, Corporate Strategy and Overall Performance

Both corporate strategy and supply chain configuration and management influence one another. It is essential to understand how they are linked to each other and how each one can be utilized to reach an improved overall organizational performance.

2.4.1 Significance of Corporate Strategy and Culture on SCs

Corporate strategy in general defines the way and track an organization follows in its business processes to insure success both in the short and long runs. Developing a corporate strategy basically means defining a clear business scope and objectives for all work related activities and processes without dismissing some important points such as: the organizations nature, work environment, place in the market and available or possible competition. It also defines the way big organizations deal with and manage multiple businesses together taking into consideration internal as well as external factors. Many studies indicate that corporate strategy has a direct effect on corporate profitability both in short and long terms (Wernerfelt and Montgomery, 1988). As for corporate culture Deal & Kennedy (1982, p.23) describe it as what differentiates the identity of each organization in comparison with others. It also describes the rules, fundamentals and work attitude of employees working in the organizations. Corporate culture is the pattern used to describe how work activities are developed, discovered and carried out.

Researchers argue that when SCM processes and systems face problems or unexpected negative results, it is mainly because of a lack of alignment between the supply chain work process and corporate strategy and culture (Hollingsworth, 1988). Gardner (2004) also add that alignment of supply chain work activities to corporate strategic goals and culture is a prerequisite for a successful business collaboration among different organizations. According to Cooper and Ellram (1993), short term business

collaborations differ from one another and that the main characteristic that differentiates between these collaborations is organizational culture set by corporate strategy. They also add that clashes in corporate culture between different supply chain partners may cause some challenges to their long term relationships.

Strategic compatibility between partners in supply chain management system does not mean that all partners must have the same corporate strategies and similar work procedures and activities. It only implies that there should be harmony between organizations as well as a clear and an agreed upon direction of carrying out collaborative work process among supply chain partners (Cooper & Ellram, 1993). Throughout the literature, many researchers agree that strategic compatibility among collaborative organizations is one of the key measures that must be used to evaluate collaboration successfulness. Mentzer et al. (2000) also found in their research that corporate compatibility in any supply chain is one of the major reasons for achieving the goals of all supply chain partners.

2.4.2 SC Configuration and its Implications on Organizational Behavior

Supply chain configuration was first introduced by the supply chain council (2008) in the supply chain operations reference model (SCOR model). This model basically is one of many models available and used in providing a framework for configuring supply chain processes, practices and activities. It is important to remember that supply chain configuration structure and the nature of relation any organization creates differ from one supply chain to the other. Many factors go into account when an organization decides to do business and create relationships with other supplying organizations such as: Business motives, intended growing speed of investment and how important is this investment with other supplying organizations is to the portfolio of the organization in general (Demeter et al., 2006). Adjustments should be made by individual organizations in order to achieve harmony among the processes, activities and responsibilities of each

organization in the chain. There are many options available for handling decisions and work activities. Supplier for example can select a make-to-stock process while the manufacturer can use make to order one. Such configurations are long-term and have strategic implications (Lee 1999). Thus, supply chains will influence the behavior of involved organizations in the supply chain one way or the other.

2.4.2.1 Organizations Behavioral Changes

In general organizations can be described as an adaptive system that includes a number of participants, resources, capabilities that makes it capable of interacting with different organizations, adapt new strategies and respond to changes in the marketplace. An organization executes a huge number of processes and activities by different departments in order to achieve the main overall organizational goal (Scott, and Westbrook, 1991). Any change in the external relation an organization have or any changes in the market place results in an adaptive change in the organizations behavior and/or structure to better match the new changes. Many organizational aspects must be reexamined when change occurs. Different groups of people within the organization will have different responsibilities in carrying out change and in insuring efficiency of new implemented processes and activities. Such organizational changes happen when an organization is part of one or more supply chain (Malhotra et al. 2005).

Such changes among partners in a supply chain must take place in early on stages when partners agree on appropriate communication methods, how sharing information will take place, main rules and guidelines and the basic work policies and standards. Throughout working with different suppliers, organizations can adopt different internal rules and guidelines that define the codes of conduct to better suit their supply chain. When applying that, organizations found new areas of strategic advantage that helped improving their management systems and competitive standing. Integrating such aspects into performance measures also helped organizations narrow their focus on vital issues in every venture, like: improving the quality of work for the people involved in its business operations (Scott and Westbrook, 1991). “Improved performance in these areas is

frequently cited as generating intangible assets, such as employee commitment and customer brand loyalty that may lead to improved financial performance” (Scott 1995).

In his research, Haechel (1999) discusses the organizational change and refers to it as the “adaptive enterprises”. He adds that organizations usually will benefit from partnering with other suppliers that hold a higher business standard and who show commitment and work ethics as it can influence its behavior to the better and make it in some cases adopt the same standards. At a minimum, partners will be capable of observing relevant regulations and laws and examine firsthand how they influence the organizational behavior. Based on supply chain event monitoring, Kapoor et al. (2005) have developed a proper response management framework to adapt with changes as they come along. In his research, Chen (2003) wanted to examine how information sharing has an important impact on different supply chain models and settings. He utilized different mathematical models to be able to measure precisely how sharing different information such as: inventory, lead time and available resources can influence work relationships among partners. Such models are a representation of several information sharing strategies used in configuring and managing supply chains. Each partner in a supply chain may have to reexamine and improve their information sharing strategies as the role it has in the chain evolves.

Often organizations with a manageable number of contractors or suppliers push to have some clear responsibilities and working terms that all partnering organizations are obliged to. These working terms may include a variety of matters regarding legal responsibilities, environmental issues, working standards and employment. Such actions that organizations chose to oblige to often helps in creating a business environment that minimizes fraud and corruption and help maintain work ethics and obligation to work regulations and laws. Some organizations go further than that as they insist on examining their suppliers’ performance extensively on a regular basis in order to make sure that work done by the supplying companies is an exact match to the requirements and no misconducts happened along the way. Other organization have also created certain mechanisms to monitor suppliers’ work progression and quality which have lead in some cases to the cancellation of some contracts. (Malhotra et al. 2005).

Some organizations look at the situation in the opposite way as they depend on their suppliers in monitoring their work processes and activities in a way to improve their productivity. Even though monitoring mechanisms organizations apply can be a great way to align and monitor work processes and performance of partnering organizations, it not logistically or economically feasible for to monitor all of their suppliers. Thus, governmental laws and regulations of each country are also used to help protect employees' rights and maintain a productive work environment.

It is also important to add that the way different organizations in different industries demonstrate their dedication to their own responsibilities in their supply chains vary from one industrial field to the other. Some organizations tend to publicize their corporate responsibilities and might even subscribe to initiatives carried out by other corporations. Others however tend to keep their corporate responsibilities confined within their organization without making them available for public. Different recording and reporting systems are used as well by different organizations. Some include corporate responsibilities in annual corporate reports; some post them on the organizations website making them public. While other provide such information in confined monthly or weekly reports that are shared among supply chain partners in order to increase and improve the transparency in interactions among shareholders and suppliers. (Bensaou and Venkatraman 1995; Lee, 2004).

2.4.2.2 Organizational Competitive Advantage

In general, organizational behavioral changes and the adaptation of new processes, activities and guidelines when partnering with other organizations are all meant to increase the competitive advantage of the supply chain and thus the organizational performance of partnering organizations. In this market, organizations these days are not competing individually the competition is rather among supply chains and what they can do better than other available supply chains in the same market. Therefore, any organizational change, initiative even supply chain management processes and activities

eventually aim to improve the organizational performance. Competitive advantage basically refers to the degree to which an organization is capable of creating a good position for itself among competitors by incorporating different capabilities that differentiate it from others in the same market (Ellram, 1996; Lippman, 1999).

In his research, Koufteros et al. (1998) defines several dimensions that are associated with competitive advantage which are: “competitive pricing”, “value to customer quality”, “time to market”, reliable delivery and innovation. In his study, Porter (1987) states that competitiveness in general comes from the industry structure which includes the following: available competitors in the market, amount of influence and control both suppliers and customers have, market entry barriers and the possibility or availability of substitute products. However, in his research, Barney (1991) found that organizations that have the same structure within the same market can have different levels of competitiveness and thus different levels of profitability. Dyer and Singh (1998) also add that organization’s relationships are a major source of competitiveness since such relationships provide a framework stronger than industrial structure and internal capabilities. They add that such relationships are unique and thus cannot be imitated by competitors in the same market.

Harrison and New (2002), conducted a major study back in 1999 that examines the relationship between corporate strategies, supply chain strategy and supply chain performance in different countries focusing mainly on industrial organizations that are in the manufacturing field. The results of their study showed that 90% of the participants believed that supply chain performance has a major role in increasing the competitive advantage of the entire organization. They have concluded that supply chain performance through its utilized processes has a direct influence on the organizational financial standing and thus on corporate success.

Moreover, a study was conducted by Deloitte that included 600 different organizations from different countries. The study results indicate that managing a successful supply chain will enhance the entire corporate performance and thus lead to corporate success

(as cited in Colman, 2003). The study also found that organizations that efficiently manage their supply chains will have higher profit margins than other organization with a poor supply chain performance by about 73%. Another study was conducted by Gunasekaran et al. (2004) in an attempt to reveal the impact supply chain management practices has on the return of investments. The study also clearly found that a well managed supply chain will result in huge financial corporate benefits. Presutti and Mawhinney (2007) went beyond that in their study as they tried to demonstrate how supply chain performance measures can be linked to corporate performance measures. The study results found a direct connection between how well a supply chain is managed and the overall corporate performance. The positive influence supply chain performance has on the corporate financial performance will result in satisfying two very important stakeholders of any organization: customers and stakeholders.

2.4.3 Current Practices for Aligning SCs to Corporate Success

Organizations fail to understand that day to day actions and activities have a huge influence on the organizational financial strategy and on the overall financial performance. Many of the problems that organizations face these days are due to poor alignment between day to day supply chain activities and processes with the overall corporate objectives (Forslund, 2007). Performance measures of supply chain activities and process are not directly linked to corporate performance measures. The two sets of measures are defined in two different ways as the supply chain performance measures focus on day to day activities and corporate measures focus on the long term results (Camerinelli and Cantu, 2006).

Presutti and Mawhinney (2007) in their research state that the expenses of more than 70% of manufacturing firms is towards supply chain activities and processes, which indicates clearly that a well managed supply chain has a direct positive influence in improving financial performance and thus corporate success. To be able to “measure the exact impact supply chain processes and activities have on the overall corporate performance,

supply chain performance should be directly linked and aligned to the overall corporate financial performance goals and objectives” (Kremers, 2010).

The main financial aim of organizations is to increase their profit on the long term. However, organizations these days will not be able to succeed or compete with other organizations in the same market unless they adopt strategies that aim to reduce cost without affecting both the quality of end product and the overall productivity rate. It is a challenge to manage such tradeoffs that come with such strategies specially cost / quality tradeoffs as they usually work against each other. Strategies that focus on cost reduction can easily affect the quality of the resulted end product. When it comes to applying such strategies in a supply chain, the management of information flow, material flow and time will contribute in the success of such strategies (Chan et al., 2002).

To be able to achieve this, the organization should interpret this long term goal into short term objectives that can be easily monitored and measured on a day to day basis. The key to achieving these day to day objectives is to identify the specific activities and processes that cause poor performance, and thus come up with short term strategies that can be applied to boost performance. In general, performance measures focuses on identifying the effective and efficient activities and actions from the activities that cause poor performance (Neely et al., 2005).

Supply chain performance measures have proved over time to be very useful when it comes to monitoring daily supply chain operations. Also it helps managers by providing them with proper feedback regarding the effectiveness of some activities, diagnoses of problems that arise along the way as well as potential success opportunities that can be utilized to the benefit of the entire supply chain. However, many researchers have criticized the current performance measures applied by SCM modules based on the fact that it is not clearly connected to the overall corporate strategy (Chen and Paulraj, 2004; Gunasekaran et al., 2004), and that there is a lack of integration between financial and non-financial performance measures. According to Morgan (2007), current organizations must shift their performance measures from traditional financially focused measures to process and financial focused measures.

Even though many studies were conducted to examine SCM performance and how it influences organizational performance. There is a lack in the studies that tackle how SCM practices can be aligned to overall corporate success (Gardner, 2004). In their research Tejas and Srikanth (2007) managed to connect supply chain performance measures to financial corporate KPIs (key performance indicators). They have used different techniques in order to decide on the different investment priorities that can impact positively business processes and activities. These connections between the two also helps top management measure and quantify supply chain performance and thus fully understand its influence on upstream and downstream sides of the organization.

In 2008, Woei conducted a study that explores the relationship between supply chain management practices and corporate success in Malaysian organization during the financial years from 1999 to 2006. Woei used the organization's marketplace to measure corporate success, and used four different aspects to measure Supply chain performance, which are: total profit income, cost of sales measured as a fraction of the total profit, supply chain cash cycle and return of capital. Collected data was then analyzed statistically and the correlation between supply chain management practices and corporate success was found. The results indicated that in the years 1999 – 2002, the correlation was considered weak whereas the correlation between the two became much stronger in the years 2003-2006. These results indicate that as the organizations over the years are realizing that supply chain day to day process and activities have a huge impact on corporate success and thus they are taking some steps to make sure supply chain performance is monitored closely and is day to day activities are linked to the long term corporate objectives. The results of the study also indicate that organizations that fully utilize supply chain performance measures can ultimately be presented with a number of opportunities to become competitive and thus financially successful.

Camerinelli (2009), have also studied the link between operational performance and financial performance through mapping performance measures of the two. Operational measures in general focus on day to day carried out activities, measuring operational performance helps assess the operational status of the organization and thus helps in making proper operational decisions to help avoid any problems and impact positively

organizations operations. Hutchison et al. (2009) examined the relationships between operational performance and day to day activities with the overall organizational financial performance. He states in his research that cash to cash strategies can be useful in improving the overall supply chain environment and thus the overall organizational performance as cash management mechanisms and tools can be utilized to realize new opportunities for increasing profitability, efficiency and communication means among supply chain members. According to Hutchison, information sharing plays a huge role in improving cash flow and thus profitability.

Kremers (2010) came up with an approach that links organizational supply chain operations to the overall financial performance. According to him, operational performance of supply chain activities and process can be evaluated through measuring its influence on the organizations market value, organizations cash flow and the main internal financial performance measures. This approach provides a direct link between the strategic goals and objectives of any organization to the way supply chain operations are conducted through relating the SCOR performance measures to the organizational financial performance drivers.

Marquez (2010) presented a dynamic supply chain management model in his research that integrates many aspects of supply chain practices under dynamic conditions. The model is intended to evaluate and determine the benefits that results from different financial and non financial supply chain operations at different levels of a supply chain. The model also explores how different SCM related problems influence the financial and non financial aspects of the supply chain performance. In her research, Wisner (2011) states that SCM various decisions will directly impact the financial corporate performance of any organization. She demonstrates through testing the influence of each individual supply chain factor on the organizations financial statement.

2.5 Literature Findings

2.5.1 General Findings

Based on the information found from the literature review on the topic of corporate strategy and supply chain management, it is clear that both have an impact on each other whether it was directly or indirectly. Each individual corporate strategy of partnering organizations will impact the configuration and work scope of the supply chain. However, some organizations will have an influence more than others depending in the role it plays in the supply chain. Corporate strategy and culture differs from one organization to the other. Thus, aspects relevant to supply chain configuration such as the nature of partnering relationship, adopted supply chain processes, work goals of supply chain as well as utilized rules and guidelines will be influenced by the corporate strategies and culture of partnering organizations. This is due to the fact that corporate strategy basically is the steering wheel of any organization and it what sets the rhythm of all organizational work processes.

However, even though corporate strategy will influence the supply chain configuration, organizations that chose to work as part of a supply chain will be forced to make some behavioral changes to better fit their supply chain requirements. Thus, entering into a partnering relationship with other suppliers will make organizations reconsider and examine many of their work process and thus change many aspects of their work. Changes may be minor, or they can be extreme thus introducing changes to corporate strategy and main business objectives. Changes might include the means of communication and information sharing, the main rules and regulations set for work processes and work evaluation and performance measures. These changes happen usually in the early on stages and are meant to set harmony among supply chain partners. Entering in partnering relationships and adopting some changes typically impacts positively the organizational behavior and can open the door for new areas of strategic advantage and improvements in management systems.

Since each supply chain is unique in nature and cannot be duplicated easily even with organizations that have the same structure and same surrounding environment, supply chains were found to be a great source of competitive advantage. Organizations these days are pushing for having relationships with partnering organizations for the benefits supply chains give them. If all aspects of supply chain management practices are managed properly and aligned to the main corporate work objectives, they will influence positively and help in increasing the organizations market share, return of investment and thus the overall competitive advantage. Increasing the competitive advantage will thus improve the overall organizational financial and non-financial performance.

2.5.2 Conceptual Framework

The effective understanding of supply chain management practices and activities and their influence on both corporate strategies and the overall organizational performance is very essential for organizations nowadays. Supply chains can be a great source of competitive advantage and thus can improve the overall organizational performance as discussed earlier. The conceptual framework developed based on the general findings is presented in the figure below and will be used in the examination of two different case studies.

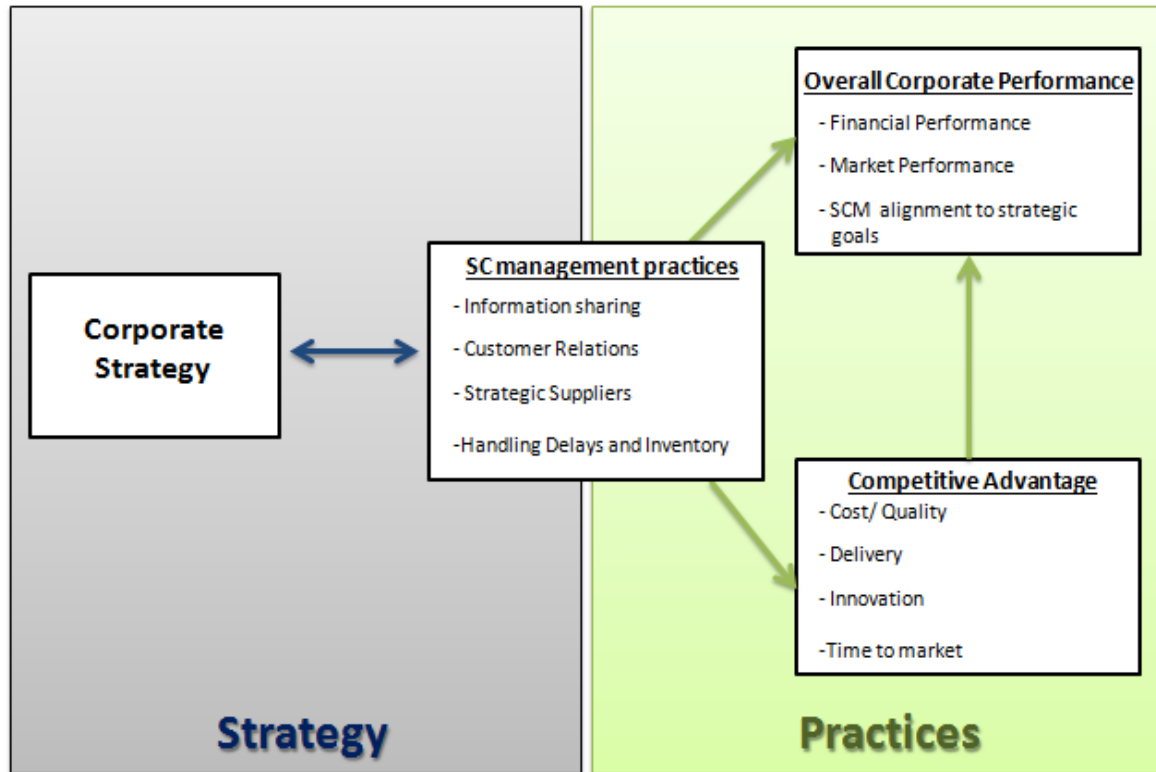


Figure - 8: Conceptual framework.

The configuration and management practices of a supply chain are directly influenced by the corporate strategies of partnering organizations. The early on stages of developing a supply chain, configuring its work processes and activities as well as short and medium term goals along the way are directly influenced by the corporate strategies of partnering organizations. Supply chains will also influence the behavior of each individual organization in the supply chain as they will be forced to adopt some new processes, activities and regulations to better match the work objectives of their supply chains and create harmony among partnering organizations.

First part will focus on examining how supply chain management practices and corporate strategy of the main organization in the chain impact and influence one another.

SCM different practices and day to day activities have a direct impact on the overall financial and non-financial organizational performance. SCM practices and activities can impact the organizations market shares and rate of return of investments. Firms with different levels of SCM practices will have different effects on the organizational performance levels. Competitive advantage is influenced by supply chain practices as such practices affect quality, cost, delivery time, process innovation and product innovation. Having a competitive advantage over others in the same market mainly suggests that organizations have more of the following capabilities compared to others: higher end product quality, lower product cost, faster delivery time and more reliability. Such capabilities will also have an influence on the overall organizational performance. Competitive advantage can affect positively the overall performance and thus lead to improved economical standing, higher rate of customer satisfaction and process effectiveness.

Second part will focus on examining how SCM practices and activities influence the competitive advantage of an organization and the overall organizational performance without dismissing the link between the competitive advantage and the organizational overall performance.

Chapter 3 - Research Methodology

3.1 Chapter Introduction

The previous chapter provided a detailed theoretical background on all aspects related to the research topic, aim and objectives. The examination of work done by experts and researchers helped validate the importance of this research especially in a continuously growing country like the UAE. In this chapter, the method of research adopted to carry out this research is described and explained in details. The chapter starts by introducing all available research techniques, and then it narrows down to the adopted research method. This research is utilizing mainly the qualitative research method in data collection and data analysis. Interviews are the main data collection method in this research, gathered data will be analyzed through specific dimensions that are explained in this chapter.

3.2 Background on Research Approaches

Several analysis techniques can be utilized in gathering and analyzing data in any research. Each of these analysis techniques has its own rules, requirements and characteristics. If we want to categorize them based on available research, they would fall into four main different types which are as follows:

3.2.1 Quantitative Research Approach

As the name indicates it mainly involves converting collected data into a numerical form where it can be analyzed through mathematical and statistical equations. Calculation results will then be used to draw specific conclusions based on one or more hypotheses made at the beginning of the research. In this type of research hypotheses are the predictions meant to investigate the relationship between different variables relevant to

the research topic. Participants to such research are asked to answer a survey that may consist of one or more of groups of questions. These days the analysis is not done manually instead there are many advanced statistical computer softwares that can easily be utilized to measure to what extent a relation between specific predetermined variables is or to what extent is the influence of one variable on one or more other variables. Analysis of collected data in quantitative research can be described as deductive, meaning it looks at the research problem from all aspects then it narrows down the research into specifics that's why it's called the top down approach (Leach, 1990; Duffy 1985).

3.2.2 Qualitative Research Approach

Opposite to quantitative technique which is based on numbers and statistics; it is based on the social aspect of reality. This type of research aims through collected and analyzed data to highlight and uncover human emotions, behaviors and believes within the research topic. Researchers that utilize this type of research technique mainly are interested in obtaining a deeper understanding of participants experiences and thoughts in a way to uncover specific patterns that can be generalized to a bigger group of people rather than just the group of participants. This type of research can be describes as inductive, meaning that researchers tend to move from the specific to the general in their way to find meaning or come up with theories from the collected data. That is why it is called the bottom-up approach, and that is why this type of research is not performed based on a pre determined research hypothesis. However, researchers must identify a specific research problem they want to tackle and might be guided through available research to stare their research in a specific direction and define a framework for their research (Cormack, 1991; Marshall & Rossman, 1999; Duffy 1985).

3.2.3 Mixed Research Approach

The third research approach is kind off a mix between the above two research techniques. Researchers adopting this approach basically use the approach that best suits their research topic and research problem without getting caught up with the idealistic debates

about which is the best research approach to be used. Thus, researchers are basically free to use any of the research procedures and techniques wither they were related to qualitative or quantitative approaches and they can mix procedures from both approaches in a way to show that both research approaches complements each other (Leach, 1990).

3.2.4 Participatory Research Approach

Finally, the last research approach used is the participatory approach. Researchers that adopt this approach usually feel that the other approaches do not satisfy the needs of their research and do not help deliver the results they are wishing to emphasize as their whole research is focused on a specific, often unique, group of people. Such research usually aims to bring out positive change in the lives of people participating in their research, which is why this approach is often described as emancipator. In other research approaches discussed above, the researcher's voice is not shown in the research as they try to deliver the results found as is. In this research approach researchers usually adopt a less neutral position as they are clearly biased to the needs or thoughts of their research participants and want to avoid marginalizing their problems. Most likely researchers that adopt this approach have a political agenda in mind which mainly focuses on giving the group of people they are studying a voice. Their research is one way of voicing these people's problems or issues that's why researchers tend to involve participants in all stages of the research, and researchers may also live among them for a period of time to help show their situation in more details in their research (Corner, 1991).

The previous provided information about all research methods adopted by researchers these days. However, for this type of research the, the qualitative and quantitative research methods are the two main research methods used by researchers.

3.2.5 Selected Research Approach for this Study

Qualitative research approach will be used mainly in analyzing two different case studies. This research approach is usually described as “constructivist paradigm”, which means it examines reality from a social point of view. It was mainly selected for this research over

other research approaches because it is more adequate in revealing repeated patterns. In addition, this approach relies on different sources of information, this extended view on the research topic is called triangulation and it is very important way used in insuring the validity and reliability of collected data.

3.3 Research Strategy

A research strategy basically is the plan of action with the work steps any researcher takes in order to organize the data collection process and make the research systematic rather than random and unorganized (Saunders, 2000). Research strategies for data collection vary from interview and surveys to archived information and historical case studies. The selection depends upon the selected research approach as well as the degree of focus on current events.

This research focuses on studying corporate strategies and their influences on supply chain management. Since the market organizations exist in these days is always changing it was essential to focus on current case studies rather than historical events and data. And since the qualitative approach was selected as mentioned previously, a set of questions were developed based on the conceptual framework formed upon the findings from the literature review. These interview questions were used as the major source of information and focused on examining closely the human behavior, feelings and different believes research participants have in an attempt to unveil certain patterns that lay beneath the surface by using this discovery-oriented research approach.

3.4 Research Participants

Participants in this research mainly come from two different private manufacturing based companies in the UAE, specifically Dubai. In order to insure receiving valid information

from participants it was essential to examine the views of different employees with different perspectives and different positions and rankings within each company. A total of 35 employees were interviewed including 10 females and 25 males that come from different business units within their companies (customer services, production, marketing and distribution). Information was gathered professionally insuring that the research process was maintained ethical. Participants who joined the study did so voluntarily and were not forced or pressured to join. Participants were informed that their interviews will remain confidential and that their names will not be mentioned in the study. Also through the interviews, no questions were asked that could be perceived in a wrong way or could trigger problems for any of the participants.

As for the two companies, the selection was not arbitrary. It was important to select companies that are part of one or more active supply chain in order to examine supply chain relationship with corporate strategy and it influences on the overall corporate performance. Supply chains vary in importance in each company depending on many factors, some of which are the market and the organization's work field. In today's market place, manufacturing organizations are one of the most competitive organizations as each works on developing and assembling a product with the highest quality but least manufacturing costs that attracts a huge customer base. Manufacturing organizations' work is highly dependent on having several suppliers and sub-suppliers to be able to provide a competitive end product. Chapter four provides more details on each of the two selected companies to participate in this research.

3.5 Instruments for Data Collection

For a qualitative research approach, there are a number of ways to collect information. The major way that was used in this research is one-on-one interviews with participants from the two companies. However, some other ways were also utilized through the data collection process and all were in textual form. The following figure shows the different ways that were used.

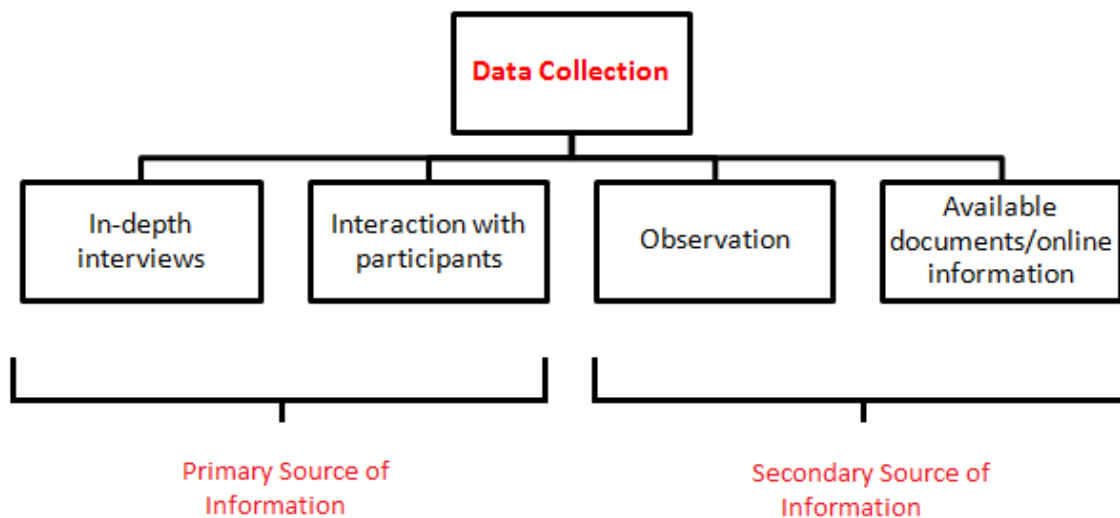


Figure - 9: Methods for data collection

Collected data was not analyzed numerically and/or statistically. The research approach provided more flexibility; data collection was done in a multiple of stages rather than just one. Additional questions were introduced during the course of interviews when extra information was needed. The interviews were altered in several directions depending on who is being interviewed and what issues were raised throughout the interview.

The set of developed questions were used on 35 different participants. Each interview lasted for 25 - 30 minutes, and was recorder in a textual form. Collected data was analyzed and used to detect repeated patterns, repeated perspectives and believes which at the end helped come up with a better understanding of the research topic in a real life perspective.

3.5.1 Interview Questions

Examining the relation between supply chain management practices and corporate strategy

- Q1. Describe the relationships formed by your company and its suppliers?
- Q2. What are the factors that influence the development of your corporate strategy?
- Q3. Where there any changes introduced to your supply chain process as a result of corporate strategic changes?
- Q4. Where there any changes introduced to your corporate strategy to better suit your suppliers?
- Q5. How did adopted changes wither to the supply chain process or corporate strategy benefit the end work results?
- Q6. To what extent is your supply chain practices aligned to your corporate strategy?
- Q7. In which aspects does your corporate strategy fall short in dealing with main suppliers?
- Q8. In which aspects does your corporate strategy fall short in improvement of internal supply chain practices?

Examining how supply chain management practices impacts both the competitive advantage and the overall organizational performance.

- Q1. How do you perceive competitive advantage in general?
- Q2. What, in your view, is your company's competitive advantage over other available companies in the same market?
- Q3. How is the supply chain practices adopted by your company aligned to improving competitiveness?
- Q4. How do the relationships formed between your company and its suppliers influence your company's competitiveness?
- Q5. In which areas does your company fall short in increasing competitiveness?
- Q6. What aspects are considered when evaluating the overall performance of your company?

Q7. How are the aspects the aspects that affect your company's overall performance influenced by enhanced competitiveness?

3.6 Limitations

There are some limitations associated with this study, but the major limitation is the number of case studies that were incorporated. Two different private manufacturing companies were included only, and a limited number of employees were interviewed along the way. Two case studies are relatively a small number of cases to be incorporated since the results will somewhat be a reflection of the work environment of these two companies.

Another limitation is that both companies are in Dubai, which means the study is focusing on only a small fragment of the huge number of companies and projects carried out in this global market. Time restriction is the major factor that made it hard to incorporate more case studies and participants within this research.

Chapter 4- Data Analysis, Findings and Discussion

4.1 Chapter Introduction

Based on the theoretical background information presented in Chapter 2, a framework was developed in section 5.2 to show the relationship between supply chain practices, corporate strategy and the overall corporate performance. This developed framework represents the road map for examining the relationship between these three factors and was utilized throughout this chapter in examining two different case studies. The analysis and examination of these case studies is presented below.

4.2 Case studies analysis

The two case studies are basically project based private organizations in Dubai that are part of an active supply chain. Each case study was examined separately first and then a cross examination was done to compare between the two cases to draw the similarities and differences and thus come up with some general findings. Information was obtained through examining available documents and information, interviews and through observation. The detailed analysis is presented in the sub sections below.

4.2.1 Case Study 1: Company A

Overview on the Company

Company A is basically part of a group of companies that started in the UAE back in 1950 where it was initially involved in trading activities only. However, over the years as Dubai started growing economically the group of companies expanded into diverse business areas that better serves the nation needs and requirements in this ever growing country.

The different areas that the group of companies is involved in include construction, contracting, maintenance, electrical equipment, shipping, food-Imports, general trading,

travel and other industries. It also has a heavy financial investments in portfolio management inside the UAE, in the region and even globally.

The huge success this group of companies has achieved over the years is mainly due to the simple yet effective philosophy adopted of making sure the customer with big or small is satisfied with the provided services and products. And through maintaining an honest, responsible and socially aware work environment to insure that customers receive the best they have.

Company A is mainly specialized in assembling switchgears among other products for different customers in the United Arab Emirates. Switchgears are basically power electrical systems used to de-energize different electrical and power equipments or systems allowing work to be done on them safely without any harm. Such product is mainly a combination of different parts that includes electrical switchers, circuit breakers and fuses to protect and separate different parts of a power system from each other. Such power electrical system is a requirement for any reliable power system in the UAE as the regulations force the use of such system for the safety it provides.

Company A started in this field of work since 1992 and have been providing different consumers with satisfying products ever since. Work processes are done in accordance with the requirements and regulations of the global industry as well as the local authority's requirements, not to mention that all products match the highest international Standard of IEC & UL. Products are mainly assembled in the main workshop located in Al Rashidiya which is one of the biggest and most advanced workshops in the region as it has over 10 Million Dhs in component inventory. Some of the assembled products by Company A are shown in the following figure:

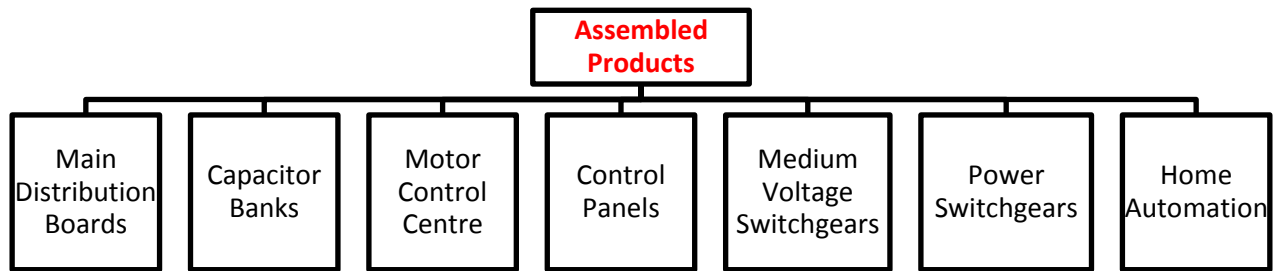


Figure - 10: Provided Products by Company A

Analysis Based on Interviews

This part includes the analysis formed based on the conducted interviews and the general observation of work processes as well as provided documents by Company A. A total of 18 employees were interviewed and all showed a clear understanding of the research topic. Employees were assured that their names will remain anonymous and the information they reveal will be confidential.

- **Corporate strategy of Company A**

The explanation given by employees through the interviews as well as the provided documents helped analyze the relationship between corporate strategy and supply practices in Company A. The corporate strategy of Company A based on interviewed employees is affected by several factors. Too many points were mentioned through the conducted interviews, however, the main points and the most repeated by different employees are as mentioned in the figure below.

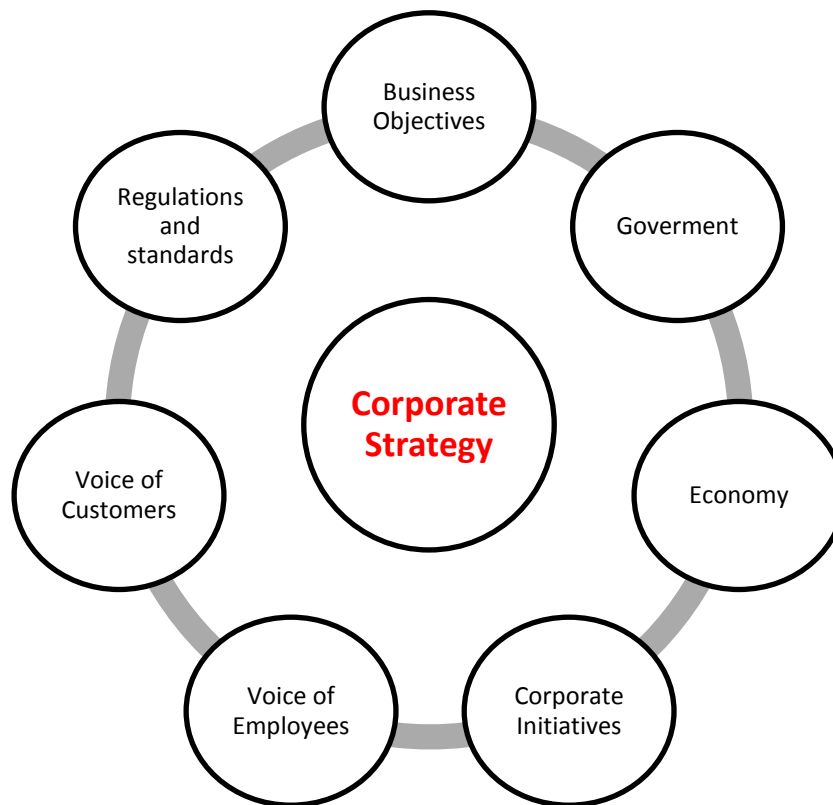


Figure - 11: Factors That Influence Corporate Strategy in Company A

These factors were perceived to influence the corporate strategy of Company A as they directly and indirectly help in steering the company and defining its focus. During the course of the interviews, the customers were mentioned as the most influential as their demand rate and satisfaction levels of the offered services and products will affect the way work is conducted internally and the relationships formed externally. According to the interviewed employees, customer satisfaction plays a great deal in forming and updating their corporate strategy as the main goal of Company A is to attract more customers and be the leading company in its field. Some also add that customers' satisfaction is essential to Company A, because they want to have and maintain a loyal customers' base, and others add that customer's satisfaction levels affects the company's profitability directly. The Governmental influence was found to come from two different areas. According to the interviewees, the first one is the laws and regulations set to control business operations in the UAE as any local business is obligated to follow all

local standards and laws or else it will face legal problems. Thus, Company A is always obligated to stay aware of any updates that happen to the consumer protection legislation laws, employment laws, health and safety laws and environmental legislation. The other aspect of governmental influence as mentioned throughout the interviews is the fact that the government is a major purchaser of the products provided by Company A as it is the owner of a huge deal of businesses and enterprises in the UAE. Thus as any other client, the government will influence the product demand rate.

According to the interviewees, the economical situation of the country also plays a huge role on their corporate strategy. Some mentioned that a rise in the economical standing of the country ultimately means that there will be a huge demand on the offered products. Others added that power systems installation is part of any construction project, and such projects require proper safety systems such as the products offered by Company A. Thus, a rise in economical standing indicates an increase in the infrastructure and contraction areas in the country and thus a high demand on Company A products. At the economical crises that happened 3 – 4 years ago, the demand rate of Company A dropped, at that time the corporate strategy focused on increasing the demand by taking a number of calculated risks that eventually helped boost the rate of demand which helped avoid any budget cuts or employee cuts. In that sense Company A's corporate strategy was perceived as adaptive. Based on the interviewees, the economical fluctuations are always evaluated and monitored closely. Corporate initiatives and the voice of employees were perceived as factors that influence corporate strategy formulation, if implemented. Throughout the course of the interviews, it was mentioned by several employees that adopting new initiatives or opening the door for new ideas or ways of doing things through their corporate strategy will help create an innovative environment. However, even though these factors were perceived by employees as beneficial to the corporate, they feel that their company's strategy falls short in creating such innovative environment by opening the door for employees to express their own ideas and initiatives.

On the other hand, business objectives were viewed by employees as the common thread that connects all business units and operations together. Some employees added that their

business objectives helps keep all day to day activities and processes focused on achieving the set business objectives by higher management. Throughout the interviews, it was mentioned that Company A objectives tackle some main work areas which are: increasing customer's satisfaction, maximizing profitability, increasing productivity and maximizing sales.

- **Supply Chain of Company A**

Company A basically work on assembling and delivering different electrical equipment to different customers in different business lines. Their customers according to interviewed employees range from industrial project owners, building owners, power stations to individual customers. Different parts required in the assembling process is obtained through a number of suppliers, some of these suppliers are available locally in the UAE while others are located outside the country. The following figure shows the supply chain Company A is part of.

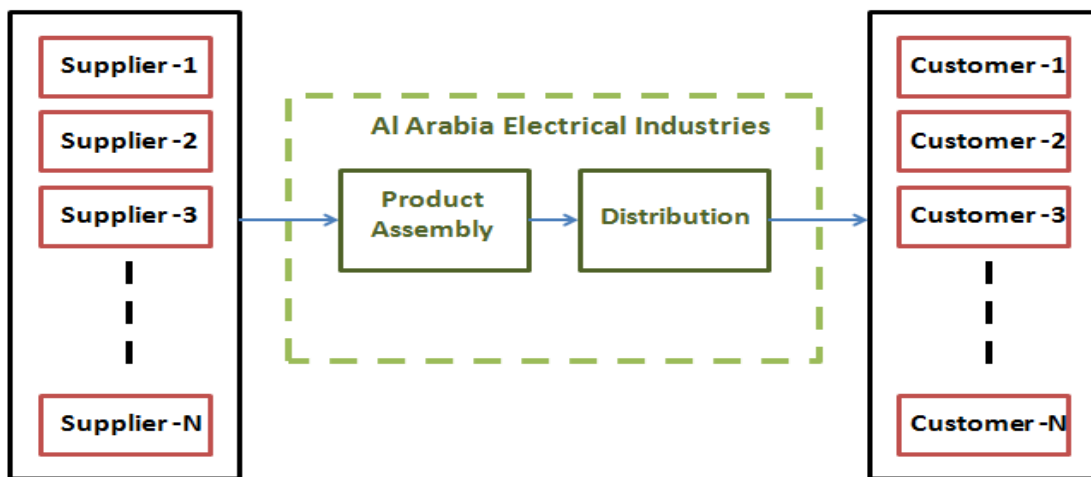


Figure - 12: Supply Chain of Company A

Assembled products require different parts that are obtained through different suppliers. Parts that are available locally are provided through local suppliers as such suppliers cost less and are easier to contact, manage and communicate with on a regular basis. However, some parts have only a limited number of suppliers that are located outside the

country thus some parts have to be shipped from suppliers outside the country. The requirements are set clearly and communicated to suppliers to insure that all parts are compatible and are aligned to the set designs and required regulations and standards.

Throughout the interviews, the relationship formed by Company A and its supplying partners were described as beneficial. It was mentioned more than once that what makes the current relationships Company A have successful is the maintained high level of communications as well as the alignment of work objectives of all partners. When asked about how they are sure that there is a consistent mutual understanding among their company and its suppliers, several points were brought up. According to employees regular meetings take place with suppliers some weekly and some monthly. Weekly meetings take place specifically when work is at its peak, supplied parts must match all requirements and the rate of defect parts must be as minimum as possible because at high demand time periods there is no time to redo work. Some added that there were some faced problems and misunderstandings in the past regarding the required parts specifications especially with suppliers that work outside the country which caused a delay in providing required products to customers. However, these problems helped develop a better communication strategy with outside suppliers and helped in exchanging information, demand data and visibility status much efficiently. It is important to add that it was clear that such strong relationships are formed mainly with direct suppliers and direct customers, as such close relationships require too much time effort and money and they cannot afford that.

Processes utilized by Company A with regard to their supply chain are mainly divided into two main categories. The first category is the planning, production and inventory control which basically describes the design and management of the entire manufacturing process (including the different required parts handling and control, time scheduling, available resources and acquirement). Inventory control which is also a part of the first category is mainly used to manage the different stored available parts, work in progress inventories and usually final products available in storages after the testing and validation of the design is done. The second category is the distribution and logistics Process, which

is used to basically determine how and when to transport final products from the warehouses to different users. Products sometimes get transported to final users directly, but sometimes they are moved to distribution units and facilities, which take care of the distribution process.

As for the performance evaluation a number of measures are utilized by Company A to evaluate qualitative and quantitative related aspects of the work done. With regards to the qualitative aspects (quality related aspects), the following figure states the main measures used, and a detailed explanation of each measure is provided underneath.

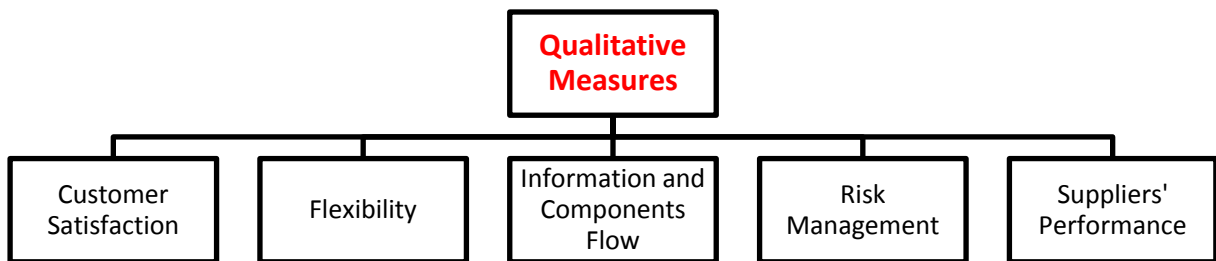


Figure - 13: The Different Qualitative Measures Utilized by Company A

- **Customer Satisfaction:** This is measured on three different levels. The first level basically measures the customer satisfaction of the received service elements prior to the transaction of products. The second level measures the customer satisfaction during the transaction of products; it is associated with service elements which are immediately part of the distribution process of the products. The third level measures the customer satisfaction prior to the transaction process; it is associated with how satisfied the customer is with the received product.
- **Flexibility:** This performance measure is concerned basically with the way the supply chain response to the variations in customers' demand patterns and how fast does the supply chain restore normality.

- **Information and Components Flow:** This is used to evaluate and measure how fast and efficient is the information being communicated to different supply chain parties and how efficient is the process of moving different parts required to assemble the final products along the supply chain.

- **Risk Management:** Applied risk management techniques are concerned with minimizing all the risks associated with the day to day work processes effectively. Work related risks that are tackled include: unplanned events, miscommunications with suppliers, out of stock components and shortage in inventory.

- **Supplier Performance:** This is concerned with measuring the quality of work done by the different suppliers, how consistent they are and how timely they are in delivering the required parts in a good condition satisfying all product regulations and standards.

Opposite to the qualitative performance measures, quantitative performance measured utilized by Company A mainly used to evaluate different work aspects that can be described in a numerical format. These main quantitative performance measures are stated in the figure below and are explained in details underneath.

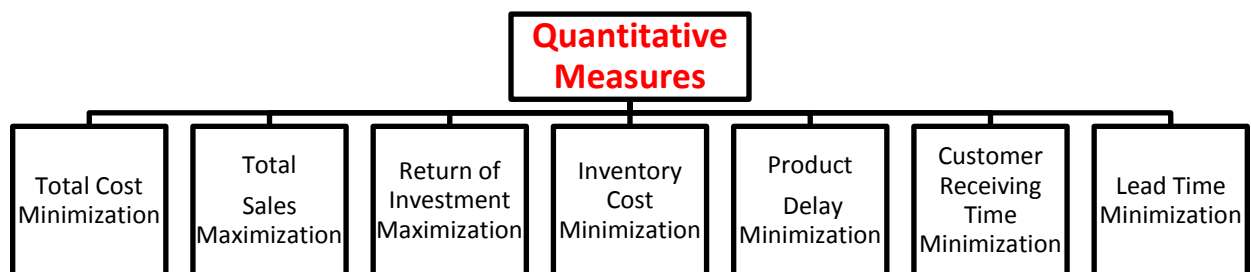


Figure - 14: The Different Quantitative Measures Utilized by Company A

- **Total Cost Minimization:** As cost is one of the most important factors that influence corporate success Company A focus on measuring how efficiently the total cost of the

supply chain is reduced, or how the cost in specific stages of a supply chain is reduced without affecting the quality of the end product.

- **Total Sales Maximization:** This is basically concerned with maximizing the total annual sales of end products in order to increase corporate profitability.
- **Inventory Cost Minimization:** This is concerned with minimizing the total costs required for inventory which includes product assembly costs and product holding costs.
- **Return of Investment Maximization:** This is concerned with maximizing the ratio between the total corporate profits to the utilized corporate capital costs.
- **Product Delay Minimization:** This is concerned with minimizing the gap between the set delivery of products date and the actual product delivery date.
- **Customer Receiving Time Minimization:** This is concerned with minimizing the gap between the time customer order time and the time the customer receives their ordered products.
- **Lead Time Minimization:** This is concerned with minimizing the gap between the starting date of manufacturing any of the products and the time finishing the manufacturing and assembly process.

- **Examination of the Influence between Corporate Strategy and SCs**

Throughout the course of the interviews, it was mentioned that supply chain management practices in Company A are set to help reach all of the business objectives of its corporate strategy. Supply chain management practices and operational objectives as viewed by employees provide a careful management of the different expenses necessary to manufacture the different products. Also, such practices according to employees focus on providing a good quality end product and that is seen through the different testing done on any product before distributing it to customers. Carrying for quality is also seen in the validation of materials and products provided by suppliers and making sure they match the specifications and regulations, since accepting any defected parts would basically lead

to high replacement costs and maintenance, vanishing replicate sales to existing customers and thus the loss of any competitive advantage based on the poor product performance. In general these day to day practices were found to be a reflection of the main corporate strategy objectives.

As a manufacturing organization, Company A deals with a big number of different suppliers that are located locally in the UAE and outside the UAE. The relationship formed with major suppliers were described in general as relational and collaborative where there is an emphasis on consistent information sharing and mutual planning to maintain a good supply chain position. However, the relation with some other suppliers of different parts were described as remote, as the parts they are supplying is available and not as rare as the parts provided by the main suppliers. Thus for such suppliers, a competitive environment was maintained with a somewhat large supplier bases in order to obtain low cost bids and there for save money. The relationships formed with main suppliers as interviewed employees' state have lasted for years, and it helped form a collaborative environment that focuses on extending united improvement in work processes, sharing of cost reduction techniques, general work efforts and enhanced communications. Thus, it was clear through the interviews that Company A had to adopt a number of work techniques to better suit the collaborative relationships formed with their main suppliers.

Some of the noticeable changes that were formed as a way to create beneficial relationships among Company A and their main suppliers are mutual cost reduction techniques and forming a consistent communication channels among the different parties. Such collaborative relationships also forced Company A to look to the benefit and success not only of itself but to its main suppliers as their successes is perceived to influence Company A's market standing. Thus, Company A had to adopt some behavioral changes to better suit their supply chains. According to the interviewed employees, the benefits of such relationships are basically associated to the drop in uncertainty and vagueness in work associated decisions as well as a drop in costs for partners and an increase in responsiveness derived from functional synergies. Some

employees add that such close relationships have also helped in improving information flow, material flow and thus product development process. It also improved quality, flexibility and service. Corporate strategy also is clear about communication strategies whether it was internally among business units or externally with suppliers and customers. These communication strategies helped keep the line open among Company A and its suppliers and directly influenced the day to day process and activities as all lingering issues should be communicated with all involved parties and work progression rate is always documented and communicated to all suppliers and higher management. However, it was clear that such huge deal of benefits were not reached among Company A and its main suppliers until a number years after forming a collaborative relation, which is a clear indication that such relationships are of a long-term nature.

Some shortcomings were mentioned in the role of corporate strategy in developing, formulating and evaluating such relationships. According to some interviewees, corporate strategy must be formulated with a complete set of information about the day to day activities, thus it must include its chain partners in all aspects, which is not the case for Company A. According to interviewed employees, this is due to the fact that Company A is in a more powerful position than its suppliers. Even though Company A adopted some changes specifically in communication means to improve its relationships with its main suppliers, it still pressures them at times to perform in a specific way. It was perceived that the corporate strategy of Company A also lacks clear conflict management strategies for external relationships; it also comes short in providing a clear perspective on power among partners. Also some employees add that not all relationships were found beneficial, however it seems that there is no clear strategies to deal with unbeneficial relationships and a clear way to evaluate and thus stop such relationships immediately. It was also added by other employees that day to day activities are carried out mainly by them, therefore their initiatives on how work related aspects can be improved should be taken into account.

As for how relationships can be improved and thus be more beneficial, it was found through the interviews that it is based on having clear collaborative strategic objectives

among different organizations in the supply chain. Business objectives were perceived as being unique and different from one organization to the other. However, in the case of Company A employees perceive their business objectives as basically concerned with the organizations internal matters. It seems their business objectives do not cover efficiently the external relationships formed among Company A and its main long term suppliers. It was argued that there should be a clear consistent set of business objectives among all partners, as well as a clear set of agreed on performance measures of work progression in order to maintain a competitive edge in the market.

It's clear that there is a mutual impact between internal supply chain processes and corporate strategy. And that day to day work processes adopted by Company A are a reflection of the main corporate objectives. Company A adopted some behavioral changes to better suit their main suppliers mainly when it comes to communication channels. However, the corporate strategy and business objectives of Company A was perceived to fall short in incorporating aspects with dealing with external relationships, setting clear performance measures among all suppliers, taking in employee initiatives on how to improve day to day activities and in managing conflicts and un beneficial partnerships.

- **Examining the Relationship between SC Practices and the Overall Corporate Performance**

The relationship formed with suppliers, specifically main suppliers, if was developed on a collaborative notion in general will force any organization to adopt some changes when it comes to it processes and guidelines. Such relationships and such adopted changes along the way was perceived by employees are basically meant to increase the competitiveness of that organization in specific and the entire supply chain in general. Competitive advantage as discussed by all interviewed employees directly benefits the overall corporate performance levels. The reason is that competitive advantage provides organizations with high revenue, market shares and a huge base of customers. And such things are directly linked to and have a huge influence on the overall corporate performance.

Competitiveness in manufacturing companies in general was perceived by interviewed employees as providing a competitive end product that is better than the other choices available in the market. In its supply chain management practices, Company A focuses on the quality of end product, the time it takes the products to reach end customers, decreasing delays, keeping a loyal base of customers and maximizing total profit. These aspects that go around customers, quality and finances were formulated according to employees as means of achieving their company's business objectives, and they were perceived to also impact the competitiveness of Company A. Throughout the course of interviews, it was mentioned that competitiveness is highly influenced by supply chain practices. According to employees adopted supply chain practices and evaluation measures not only focus in having a high performance level internally but it also focuses on maintaining a competitive advantage over competitors in the same market. Thus, the general view of employees is that if supply chain management practices were applied efficiently they will positively impact the company's competitiveness.

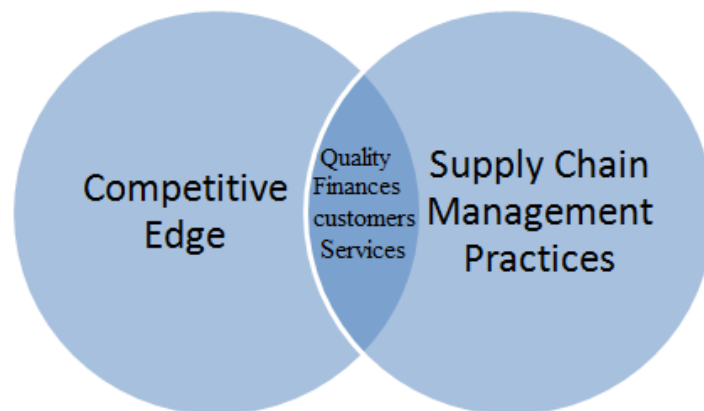


Figure – 15: Intersection between SCM Practices and Competitive Advantage (Comp. A)

As mentioned before, the business objectives set by Company A basically tackle some main work areas which are: increasing customer's satisfaction, maximizing profitability, increasing productivity and maximizing sales. According to interviewed employees, the way Company A align its supply chain practices to both its main business objectives and enhancement of competitive advantage is as explained below:

- **Quality of end product:** As it was mentioned by employees, manufacturing organizations cannot manufacture all parts required to produce an end product all alone, even if they do they cannot produce and manufacture parts with the same level of quality as other specialized organizations since it requires a huge deal of expertise and funds. They thus must work with different suppliers that help provide the parts they cannot manufacture or can manufacture but not with the same quality received by specialized suppliers. That is why Company A puts a lot of efforts in maintaining strong relationships with its main suppliers located inside and outside the country. Company A also incorporates main suppliers in the manufacturing process and keeps an eye on the overall performance of each of its main suppliers as any fluctuation in their performance levels may influence Company A production rate. Quality is also monitored through the extensive testing applied on products before allowing them to reach different customers as shown in the following figure. Such testing and design validations requires a considerable amount of funds, however they were found to decrease the products defect rate and thus boost the quality of provided products in comparison to other competitors.

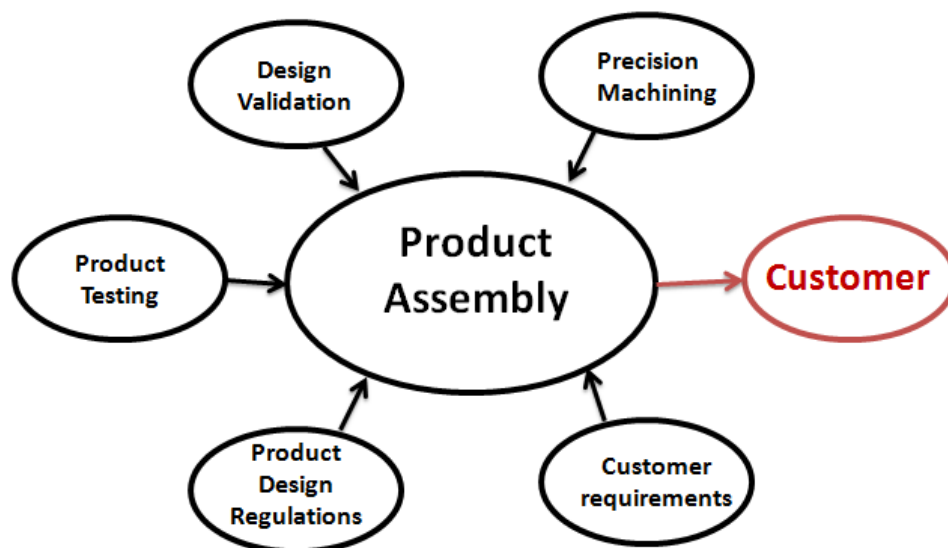


Figure 16: Factors That Influence Product Assembly Process in Company A

- **Communication Channels:** Employees pointed out that the strong relationships Company A has with its main suppliers, which have lasted for years, makes it easier to respond faster to high customer demands and sudden fluctuations in the market. Strong relationships Company A has with its suppliers allows it to communicate its requirements clearly to its suppliers which in return helps it respond to market demands faster than others. And that is perceived as one of the advantages that impacts positively the competitive advantage of Company A. Also, employees have mentioned that regular meetings are held with representatives of the supplying companies on a weekly and monthly basis depending on the demand rate. The open communication lines between Company A and its main suppliers are perceived to boost the competitiveness of Company A.
- **Customers Satisfaction:** employees pointed out that Company A has been in the market longer than other organizations and thus it has a loyal customer's base and that is perceived as a competitive advantage. According to some employees, such customers rarely change product providers specially that they are mainly satisfied with the product they receive. Company A tries to keep the lines of communications open with customers in order to keep up with their requirements and needs, to be able to predict market fluctuations and demands. Other employees mentioned that there is also an added set of services provided to customers beside the provided end product. Such services include: online customer services, face to face meetings with major customers on a regular basis, involving major customers with the design and production periods, available maintenance for provided products, replacing of defected products free of charge and customizing some products to better match customers requirements, feedback online systems available for customers as well as involving major customers in the manufacturing process and keeping them updated about work progress.

With regard of competitive advantage some employees have also added that supply chain relationships formed by Company A and its suppliers are unique and cannot be

duplicated even by organizations that have the same structure and are in the same market with the same surrounding environment. Thus, it was expressed that this unique relation provides a great source of competitive advantage for Company A. Based on the interviews, nowadays it is very rare to find organizations that work solo and are not in some kind of relationships with some other organizations. Thus, it is clear by that fact alone that partnering relationships among supply chains provide a great deal of competitive advantage that cannot be reached by individual organizations.

As discussed with employees, competitiveness nowadays is among supply chains not individual organizations and the above mentioned points are a great source of competitiveness for Company A. However, some employees added that any organizational change or initiated programs, incorporated capabilities and even supply chain management practices improvement all boost competitive advantage. It is perceived that Company A falls short in this area as it seems from the employees' feedback that there is no room for internal initiatives when it comes to the way work is carried out. It's clear that Company A focuses on the external influences on its supply chain and works very hard to improve them but fails to adopt internal initiatives intended to improve its competitive edge. The quality of leadership within the company was frequently criticized, indicating a somewhat poor management. It may be argued that such poor management style can influence the well being of employees involved in the day to day operations, which may open the door to errors or to a slower rate of work progression.

The organizational performance levels in Company A as discussed with employees are evaluated to determine the level of achievement of business main objectives in the corporate strategy. Such evaluation is done in terms of ROA, which refers to the return of assets, also the rate of growth in sales, the total net profit compared to the productivity ration, cost per operation hour, the amount of variations from the original budget, supplier cost saving as well as customers feedback and satisfaction rate. Besides customer satisfaction, all the points mentioned were related to finances. All employees have agreed through the interviews that supply chain management practices and the way they are conducted will influence the overall performance of the company since they are

based on the main business objectives. However, their organizational performance is mainly measured in financial terms and the non financial aspects of their organizational performance is somewhat ignored. Supply chain management practices focus on finances, time, quality and customers, thus the influence of all financial and non financial aspects of supply chain management should be taken into account when evaluating the organizational performance.

4.2.2 Case Study 2: Company B

Overview on the Company

Company B represents one of the headquarters of a parent company located in Slovenia. The parent company was first established in the year 1961, and very fast became one of the top manufacturing European companies specialized in container manufacturing, steel constructions, roofs as well as insulation systems. Three major factors has always been influential to its success and allowed it to expand widely: innovation, high quality products and customer satisfaction. The organization structure is available in Appendix – E.

Through the years, the parent company in Slovenia has gained a huge customer base in the Middle East. Thus it was essential to establish headquarter in the region to be able to respond to customers demands much efficiently and in a timely manner, thus Company B was established in 2007 in Dubai. Even though the company in Dubai works on developing a number of different products, its core product is fabricated containers with different sizes and multi purposes that can be utilized temporary or permanently for several uses. The advantages such containers provide is that their configuration does not require a lot of time and effort, they do not require any infrastructure changes, they have a huge number of uses and they are cost friendly when compared to other alternatives.

Company B has grown over the years and nowadays it is one of the leading container manufacturing companies in the UAE with a manufacturing ability of 400 containers per month and customers that are located locally and from around the world. The vision, mission and values of the company are as follows:

Vision:

To become the top company in it's field by offering the best solutions in steel buildings.

Mission:

To offer creative and unique full solutions in the field of steel buildings:

- In order to help provide customers with all the specifications they require.
- To improve the individuality and abilities of each employee within the company.
- To maximize the rate of return of capital money and insure consistent growth of the company.
- To be aware about the changes in the working environment and the external surroundings thus adapt to any faced changes.

Values:

The main value are trust, innovation, accountability, partnership, enthusiasm and dependability.

Management in Company B

In General, the parent company's management incorporates several systems to insure work efficiency, quality, customer's satisfaction and total cost reduction. The nature of implemented management, its authority, duties and competencies are identified for each individual company, thus it's different from one company to the other. Every individual headquarter company has its own management authority. The management authority of the UAE headquarters run according to the:

- Rules and regulations of the local law in the UAE.

- Work progression rate.
- Internal adopted evaluation measures set by higher authority in the company which are approved by the professional council of the parent company in Slovenia.

Management of the supply chain, customers and suppliers is set by the Management authority in the UAE. However, its activities, processes and work progression are monitored by the parent company in Slovenia at associates' meetings. Such meetings to monitor the management of the UAE headquarter (Company B) occur on several levels, which are:

- At Annual meetings held with the parent company where it can apply its voting rights and take decisions regarding problematic issues.
- At operational levels like production, marketing finances, HR, IT systems and supply chain management as the parent company can influence how such operations occur.
- At the supervisory meetings where specific personals meet the management authority of the UAE headquarter as representative of the parent company to supervise work process and send their feedback.
- At specific organized meetings that incorporates several management representatives of all branches with the management board of the parent company.

Analysis Based on Interviews

This part includes the analysis formed based on the conducted interviews and the general observation of work processes. A total of 17 employees with different employment ranks were interviewed and all showed a clear understanding of the research topic. Employees were assured that their names will remain anonymous and the information they reveal will be confidential.

- **Corporate strategy of Company B**

As for the corporate strategy and its influence on the day to day supply chain activities and practices, as in the first case employees were directed first to mention what factors influence their corporate strategy and then explain how they believe it influences their day to day work. Factors that were brought up through the interviews are mentioned in the figure below and discussed in details beneath it.

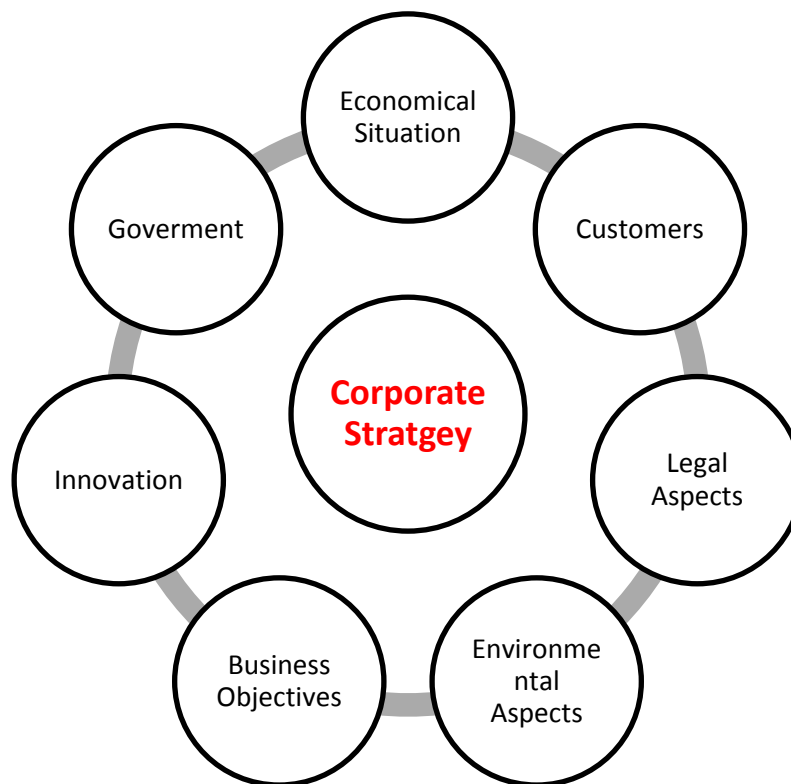


Figure - 17: Factors That Influence Corporate Strategy in Company B

These above factors were perceived by employees to influence their Company's strategy as any change or fluctuations in any of them will impact strategy. As discussed with employees customers were perceived to have the biggest influence on strategy. Some employees have mentioned that the core focus of Company B is to attract more customers and to maintain a stable base of customers especially at harsh economical situations. Thus satisfaction levels of customers are taken into account at all stages. Some employees

added that through the years Company B has developed a loyal base of customers, that is due to the fact that they are involved at almost all stages and most of their requirements, if not contradicting the regulations and standards, are met. Governmental influences on strategy were perceived mainly in a similar way as in the first case study. Company B has to fulfill all standards and regulations set by the government in general to keep its business running in the UAE. However, Company B has to take into account as well the regulations and standards set globally for steel container manufacturing. The economical situation as mentioned by employees also affects the demand rate of their products. As the economical situation rises, new projects are picked up and the need for Company B's products increases. Oppositely, the rate of demand decreases as the economy in the UAE and surrounding region drops. Such rise and fall in the economical situation based on employees forced Company B to adopt different strategies to better adopt with its surroundings.

Business objectives of Company B tackle several aspects: the desired profit levels, growth rate of the company, amount of total generated cash, and company's position in the market and customers satisfaction. These aspects as discussed with employees are viewed from a strategy's point of view and are translated into milestones, operational objectives and day to day activities and processes. As mentioned by some interviewees Business objectives of Company B are set by the top management in UAE and are formulated to relate all business units and all business activities to a common set of goals. Some employees add that the supply chain management practices and performance measures that are formulated at the operational level of the company are a direct reflection of the main business objectives. In closely examining the practices of the company's supply chain, employees mentioned that quality and customers satisfaction are

- **Supply Chain of Company B**

As it was mentioned previously, Company B works mainly in manufacturing and delivering different containers with different sizes and purposes to a variety of customers. Customers include a wide range of companies, governmental sectors and businesses. The

supply chain incorporates three main parts which are the **manufactured product**, **suppliers** and **customers**. Each of the three parts is examined below.

1. Manufactured Product:

The main produced product is the steel containers. These steel containers fall under three different categories:

Work Facilities and Military Camps

Such facilities provide minimum to none infrastructure changes and are mainly utilized in residential areas for extended periods of times. They can be customized to better suit a working environment, livening environment or for military purposes. They can also consist of different facilities such as a sleeping area, kitchen, offices and many others that can be accommodated upon request.

Standard accommodation 20' Container

This specific type of containers is designed for multiple purposes based on the international standards of the container transport. These standards are accommodated in the design of the containers based on the ISO 1161 regulations. This type of containers are very light and can be combined together in a longitudinal and crossways directions with no limits, and also can be formed to establish two floors.

VIP Containers

These containers are customized based on the customers' requests and specifications and can include different facilities. Usually such containers are used for VIPs or for customers that want to include extra features.

2. Suppliers:

As the case of Company A, Company B works with a number of suppliers that provide required material to construct the containers and to prepare the different facilities accommodated inside the containers. Manufacturing of such containers happens on several stages, each stage requires somewhat different materials. In general, each

container consists of a: front end, base, rear end, side wall, roof and a floor. The manufacturing of each of these parts requires several materials. Refer to Table – 5 in Appendix – F for the list of required materials. All these required materials are provided through several suppliers that Company B works very closely with. The relationship between Company B and its suppliers have been strong and maintained that way. As any other company the relationships it has with external suppliers can face some bumps along the way, however Company B kept its relationships strong with an open line of communication in order to deal with any problem that may occur at any time.

3. Customers:

The major customers that utilize the Company's main product (steel containers) come from three different sectors in the UAE and the surrounding region, which are:

Industry

Operations sometime takes place in areas located outside the city where workers have to stay for long periods of time in harsh environmental conditions. Such operations usually take place in oil exploration, power system installations, telecommunication system installations and remote area construction projects. Such operations require a proper working, living and storing areas, which is what Company B offers to them by the steel containers it manufactures. These containers can be customized to better fit the specific uses and requirements of each industrial project.

Government

Steel containers are proper for military uses and relief operations as it provides re-locatable, strong rugged small buildings that can accommodate all the necessities for living in remote areas for long periods of time. Such containers are resilient and are designed to keep its occupants safe even in the harshest and most dangerous areas on

earth. Such containers also have been used by hospitals or medical teams when travelling from one area to the other offering medications to unprivileged patients.

Education

Company B's products provides a quick solution when an extra space is required urgently, especially in schools. Steel containers can be utilized to provide extra classrooms, expand schools, and provide playing areas for kids and even in building small kindergartens. As such containers are flexible and re-locatable they can be moved around easily to where it's required. Not to mention, that the containers fulfill all container requirements and regulations thus they provide a top quality and safe area for kids to be in.

Adopted **evaluation measures** as in the case of Company A include some qualitative and quantitative measures. However, these qualitative and quantitative measures in the case of Company B are divided into four main categories as shown in the table below. These different categories are what maintains the stability of the supply chain and helps Company B reach to the leading market position it aspires. These categories are: customers, finances, innovation and internal business.

Table – 6: Performance Measures Utilized by Company B.

<p><u>Customers:</u></p> <ul style="list-style-type: none"> -The level of customer satisfaction of received product -Order lead time -Delivery performance -The extra provided services along with the product -The ability and methods used to respond to high demands -Efficiency of carrying out the distribution schedule -Quality of delivery documentation - The quality of delivered products -Achievement of defect free deliveries 	<p><u>Finances:</u></p> <ul style="list-style-type: none"> - Rate of return on investment - Variations against budget - Delivery reliability and overall performance - Initiatives for Supplier cost savings - Average required cost for each operating hour - Ratio of the overall profit to total production
<p><u>Innovation:</u></p> <ul style="list-style-type: none"> - Supplier involvement in problem solving - Quality vs. cost of the suppliers provided materials - Initiatives for Supplier cost savings - level of accuracy and efficiency of entry methods - level of accuracy and efficiency of forecasting methods - level of flexibility in providing customers needs - The level of Buyer–supplier relationship - Available services other than the provided product - Value of received product as perceived by the customer 	<p><u>Internal Business:</u></p> <ul style="list-style-type: none"> - Supplier lead time compared to the industry’s average time - Level defect free parts - level of accuracy and efficiency of forecasting methods - Cycle time of the product development, the purchase order and the planned processes - Effectiveness the production schedule - Capacity utilization - Total cost inventory procedures and techniques.

- **Examination of the Influence between Corporate Strategy and SCs**

The relationships formed by Company B and its suppliers as well as customers were described by several interviewees as a partnership. Some added that most formed relationships go back to the year 2007 when Company B was first formed. Such close relationships are viewed to be very beneficial to all parties as the understanding developed over the years makes it easier to respond to demands very fast. As it was stated by employees meetings are held on a regular basis. When the demand is at its peak these meetings may occur weekly or even daily. Otherwise, meetings occur on a monthly basis

with the purpose to keep the alignment of work objectives and work progression known to all involved parties. The suppliers were also described as a very important factor that is incorporated almost with all the planning that happens. As it was pointed out, suppliers influence work process and the successfulness of Company B directly as they impact the delivery time, product quality, customer demand and also they can be a great source of innovative ideas and opportunities.

As in the case of Company A, it was mentioned that the strong relationships formed are with main, direct suppliers and regular customers. The justification of that was also related to financial aspects; as such relationships require both time and money. In the case of Company B however, employees mentioned that some main suppliers are even involved in the designing stage of products. The involvement of suppliers in later stages as discussed by interviewees helps Company B in coming up with some innovative ideas, and also provides sometimes a fresh perspective on how some problematic issues should be handled. Even though Company B is in a powerful position, but when it comes to its relationship with its main suppliers Company B tries to keep it balanced without exercising forcing measures on any of them. However, Company B makes sure that all its requirements wither its time cost or materials related, standards and regulations are clear and well communicated to all its suppliers. Materials provided by suppliers will be utilized in manufacturing Company B's products, thus these materials will be one of the factors that will influence the quality of the end provided product. For that reason Company B makes sure that the materials fulfill all necessary requirements, and that it's tested first to validate it matches all specifications. Meetings between Company B and its suppliers take place on a regular basis specially when there are high product demand rates, and progress reports are provided to Company B's management board on a weekly basis. Being that innovation is a huge part of Company B's philosophy it is always interested according to employees to adopt supplier initiatives in producing a better end product.

Supply chain management strategies and performance measures according to employees are an interpretation of their corporate strategy and their main business objectives. Throughout the course of the interviews, it was mentioned that supply chain management

practices in Company B have a set of functional and operational objectives that cover the day to day and week to week work progress. These sub-objectives provide a timely format for operational employees to follow in order to manage both time and production rate. According to employees, time is very essential when dealing with customers these days as well as keeping them involved at all stages of work. Thus management practices and day to day activities are always cross examined with the original time schedule to avoid any delays in specific activities or a push back in delivering the final end product. Time as well as customer involvement influences customer satisfaction level of the received end product. Other employees emphasized also that operational objectives set by their managers provide a careful management of different costs necessary to manufacture the different products as well as a way to reduce extra expenses. However, the quality of end product is highly emphasized by managers as its one of the major requirements in the company's business objectives. According to employees, the type of materials incorporated in the manufacturing process are examined and tested through different techniques in order to insure its quality. One of the trading marks of Company B is that it uses materials that are environment friendly and can be easily recyclable. Thus, customers must always be provided with the best material quality. Specifications and standards followed by Company B according to employees is highly emphasized in the communications the company does with its suppliers. Quality is un-negotiable for Company B.

In general, the day to day management practices of the supply chain activities were found to be a reflection of the main corporate strategy objectives. Still there were some negative points mentioned by employees through the course of the interviews. In their opinion, customer satisfaction is huge for their company specifically key customers. However, employees noted that sometimes the demand, constrains and targets being placed upon the company gets to be excessive at time and somewhat difficult to achieve. According to employees, key customer demands create a lot of pressure especially on production employees, thus creating a stressful environment through high demand times. Such pressure to achieve customers demand is perceived to create at times an unhealthy work environment for some employees. A company's name was mentioned in particular during

the interviews and it was described as one of the major customers of Company B. According to employees, it is very essential to Company B to keep its relation with this key customer through satisfying its requirements and sometimes tough constraints in order to avoid losing them to other competitors available in the market.

As for the changes that had to be adopted to benefit the relationship formed by Company B and its main suppliers and customers, they were mainly in the utilized communication channels. The corporate strategy of Company B according to employees has always provided a clear layout for communication means within the different internal business units and within each business unit. According to employees however, not all units and managers communicate their progress to others. Work sometimes gets conducted in parallel among business units and sometimes the start of specific activities is based upon the completion of others, and not communicating work progression to other units mainly will cause some delays. Thus, even though communication requirements are clear it seems that there is poor evaluation of the commitment of different units to these means. Communication with suppliers however, according to employees, happens on a daily, weekly and monthly basis in order to respond to customers' demands. Company B and its suppliers are directly influenced the day to day processes and activities as all problematic issues should be communicated with all parties and work progression rate is always documented and communicated between suppliers and higher management.

Some of the noticeable changes that were formed as a way to create beneficial relationships among Company B and their main suppliers in involving them in the design and manufacturing stages. It was brought up through the course of the interviews that involving suppliers with the Company's internal processes helped form a closer relation and also opened the door for suppliers to share their thoughts and ideas in problem solving. This involvement is perceived as an initiative that can be a great source of benefit to Company B and can be a great source of innovative ideas. According to employees, the closer relationships formed with suppliers also helped decrease uncertainty and ambiguity in work related processes and decisions. And an increase in responsiveness due to the fact that main suppliers are knowledgeable on the different

requirements of Company B. However, it is also important to mention that throughout the interviews it was mentioned that Company B was involved in some relationships with some suppliers that turned out to be mainly unbeneficial. These suppliers mainly could not keep up with the requirements and the high demands of Company B which caused a delay in providing required materials and thus a delay in providing customers with their products. Even though Company B ended its relationships with some of its suppliers due to such problems, it seems that there is a poor supplier evaluation system. It is essential to evaluate all aspects of possible suppliers before involving them in the company's work. It also comes short in providing a clear perspective on power among partners. Also some employees add that not all relationships were found beneficial, however it seems that there is no clear strategies to deal with unbeneficial relationships and a clear way to evaluate and thus stop such relationships immediately rather than wait and suffer from financial consequences in later stages of work.

As for how relationships can be improved and thus be more beneficial, it was found through the interviews that it is through having a clear communication of work objectives among companies. Based on that some employees add that a set of agreed upon work objectives among their company and its suppliers can help guide their work. Another important point that was discussed is the customers influence on work related aspects. As mentioned before, Company B's philosophy is to satisfy customers and make it easier to them to communicate their needs. However, employees add that some of the key customers cause a lot of work pressure especially on operational employees due to their different product demands and short notice timing. According to employees, this causes a lot of work pressure and stress on them which at times affects the whole work environment. Unhealthy work environment will ultimately open the for mistakes to happen and innovation to drop.

- **Examining the Relationship between SC Practices and the Overall Corporate Performance**

Competitiveness in general was perceived by interviewed employees as what differentiates a company from similar companies in the same market. It was mentioned that the relationship formed with key suppliers is a great source of competitive advantage. According to employees, close relationships affects responsiveness of the supply chain and reduces vagueness and uncertainty as all involved parties are well aware of the requirements and they way work in conducted by their partners due to the long lasting relationships. Keeping a competitive advantage over others in the same market is highly important to Company B. According to employees, competitive advantage in Company B is related to its offered end product and services, market lead time and maintaining high quality while applying cost reduction techniques. Competitive advantage as discussed by all interviewed employees directly affects their corporate performance. That is due to the fact that it provides their company with high revenue, market shares and a huge base of customers. And such things are directly linked to and have a huge influence on the overall corporate performance.

Throughout the course of interviews, it was mentioned that the different aspects of competitiveness is mainly applied through the supply chain management practices to insure quality, cost, time and customer satisfaction. According to employees, adopted supply chain management practices and evaluation measures in general are designed to maintain a high performance level that focuses on having a competitive advantage over others in the same market. Thus, the general view of employees is that if supply chain management practices were applied efficiently they will positively impact the company's competitiveness.

As in the case of Company A, it was found that the areas the company focuses on to enhance its position and increase its competitiveness are aligned with the main corporate objectives. According to interviewed employees, the way Company B align its supply chain practices to both its main business objectives and enhancement of competitive advantage is as explained below:

- **Quality of end product:** As it was mentioned by employees, different materials required to manufacture Company B's containers are provided by a number of different suppliers. Through the manufacturing process, Company B tries according to interviewed employees to differentiate its product through different aspects. The first aspect is through the materials utilized. Materials are tested for quality and its performance and endurance as well as life expectancy and how it ages due to the surrounding environment all is tested before any manufacturing process starts. Special additions are incorporated in the manufacturing process to insure the final product is of a high quality. These additions include thermal insulations, high density rock wool and special panel joints, environment friendly materials that are resilient to fire and harsh living environments, incorporation of the highest global designs of steel containers, the flexibility and simplicity of the design as it can be assembled and de-assembled easily, the ability for customers to customize their containers to better fit the required uses as well as the ability to join more than one container together in one unit. It's also important to add that the designs are constantly improved and that the key suppliers according to employees are involved at the design and manufacturing stages and at times even help in providing innovative ideas or solutions to unexpected problems.

- **Communication Channels:** The main benefit of having strong relationships with key suppliers as viewed by employees is the enhanced responsiveness and the mutual understanding of each other's work requirements. These close relationships according to employees were improved further more to insure a fast response to market requirements through the utilized communication means. Communications mainly are held on a weekly basis and at times daily when the demand rate is high. Suppliers provide regular documentations on work progression and materials testing results. The suppliers results and progress rate is constantly, according to employees, compared to the predetermined time schedule to make sure they have a time advantage. This is also applied throughout the internal processes as well as employees progress should always be compared

against measureable preset work objectives. It was also mentioned that variations from the preset objectives or time schedule are often discussed in the regularly held meetings as a way to keep control of the working environment and keep the deviations of original plans to a minimum.

- **Customers Satisfaction:** Company B has been established in the UAE since the year 2007, thus it had to work harder than other companies to sustain a loyal customer base. The Company's growth is directly linked to the number of customers attracted to the company's products. Accordingly, customers' satisfaction is taken seriously in Company B. Company B works hard on keeping the lines of communications open with customers in order to keep up with their requirements and needs, to be able to predict market fluctuations and demands. Key customers are kept involved and informed at all manufacturing stages and their specifications, if not contradicting with the main standards and regulations, are implemented in the manufacturing process. Meetings are held also at a regular basis in different stages starting with the design stage, through the manufacturing stage and ending with the transportation of end products. Company B also provides customers with a wide range of extra services that includes free technical after sales support, free transportation of products to the required destination, 30+ life expectancy with maintenance as well as online available information on how users can assemble and de-assemble their containers by themselves. Company B was described frequently throughout the course of the interviews as a customer focused company.

With regard of competitive advantage some employees have also added that the strong recent supply chain relationships formed by Company B and its suppliers helped save a lot of time as it caused a reduction in required paperwork and overheads as well as faster payment all due to the configured long term agreements. Such long term agreements are also seen by employees to be the cause to more accurate market predictions and innovative new ideas. One of the ideas suggested by one supplier and accepted by Company B is opening offices for members of the supplying company in Company B's

manufacturing facility. As indicated by some employees this helped save time and provided an improvement in the way information is shared among the two parties. However, it is also important to add that even though some relationships were found to be beneficial to Company B, some employees mentioned that in the past Company B have formed several relationship with some suppliers that turned out to be unbeneficial. According to employees, Company B failed to realize the capabilities of these suppliers which were not suitable to the demand rate required by Company B. Again, it seems through the interviews that there is no efficient way to evaluate suppliers before engaging in long term agreements with them. Many aspects should be taken into consideration when evaluating different suppliers not only the financial aspects of their business. Also, as in the case of Company A it was also deduced that Company B did not form a close relationship with all of its suppliers. Some suppliers still work with company B through traditional purchasing ways which basically involves bidding and selecting the best suitable bid out of different candidates.

It was mentioned through the course of interviews that new initiatives, incorporated capabilities and programs as well as improvements on supply chain practices are usually intended to enhance the competitive position of their company. However, it was mentioned that the application of such programs and initiatives mainly relay on the capabilities of the managers and leaders of each business unit involved in the supply chain practices. Good leaders were described as who enhance shares value, increase growth and total revenue, establish programs that incorporate key suppliers in order to insure that they as well aware of all work updates as well as help provide a competitive end product when it comes to quality and cost. However, throughout the course of interviews employees emphasized that such previously mentioned work enhancements are not always realized due to poor leadership applied by few managers and executives in the Company in some business units. Some individuals add that sometimes they have to implement some decisions that they are sure is flawed and will not benefit the company. This lack of participation on the employees' side is due to the high pressures they experience when the demand is at its highest. The urgency some times in getting work done as fast as possible does not allow involving employees in the decision making

process. Employees have expressed that management should consult with them in some work related aspect due to their deep technical background in the operational level of work aspects. Employees' input is a source of competitive advantage that Company B seems to forget about in its efforts to improve their competitiveness.

Again, it's evident that Company B work very hard to involve external parties like key suppliers and key customers with the purpose to increase its competitiveness but fail to realize the influence internal initiatives by its employees might have on its competitive position. Some managers were criticized throughout the interviews, as their poor management styles is reflected through the level of stress and pressure some employees face in high demand time periods.

As for organizational overall performance, it was defined in general by several employees as the level to which an organization achieves its set goals whether they were market-oriented or related to the financial standing of the organization. Through the course of interviews, it was mentioned that supply chain management practices operational objectives are divided into two different parts in Company B, short term and long term objectives. As for the short-term objectives some employees explained that it is intended to monitor and enhance productivity as well as shrink inventory and cycle time. Long term objectives on the other hand as explained are intended to enhance the company's market share and profits not only for Company B but for all the members in the supply chain. These short and long term objectives as some interviewees add are based on the main business objectives thus they are intended to enhance the overall performance of the company. According to employees, many measures are utilized by Company B to measure their overall performance which includes return on investment (ROI) rate, current market share, rate in growth in sales, the growth of ROI, and the rate of growth in the market share as well as the overall competitive position.

An important point that was mentioned in that supply chain management practices and evaluation measures helped increase Company B's market share in the last three years. Enhancements were also seen in the rate of return on investment, and in a clear improvement in the overall competitive position. For example, interviewees mentioned

that the strategic relationship with key suppliers helped reach specific benefits in terms of the financial performance. Also, involvement of suppliers in the design and manufacturing processes was linked to better-performing plants. With regard to customer, involving them and keeping them informed about work progress enhanced their satisfaction levels and thus enhanced the overall standing of the company. In general it was explained throughout the interviews that the different communication means utilized with key suppliers and customers helped lower total costs, enhanced order fulfillment rate and finally reduces the order cycle time.

4.3 Discussion

From the examination of both case studies presented in the previous sections above, it is clear that there are a number of similarities as well as differences. In general, it was found that in the two manufacturing companies there is a great deal of emphasis on improving the overall organizational performance through the application of supply chain practices. It is also clear from the analysis that in both cases a clear relation between the applied supply chain management practices and corporate strategy was detected. However, the main influence on supply chain management practices were introduced by the main company in the chain (manufacturing company), as it had the most powerful position in the supply chain. The influence of other supplying companies on the chain's adopted practices was very limited and was mostly detected in the way they conduct their own work activities.

According to the analysis the development and updating of the corporate strategy is influenced by several factors, one of which is the main business objectives. In both cases it was found that the supply chain practices, the functional objectives, performance measures of work progress as well as the long-term objectives of supply chain management are a reflection of the main business objectives of the manufacturing company. Thus, this indicated a clear influence from corporate strategy on the configuration of supply chain practices and the type of external relationships formed. Supply chain management practices in general were found to cover different aspects form

the relationships formed with key suppliers and customers to quality and level of communications among different supply chain parties.

Changes were introduced in both companies to better suit their external relationships. However, through the interviews it was clear that changes mainly occurred in the adopted communication means. As both companies were in a more powerful position than their suppliers, it was clear that this power influenced the relationship formed with suppliers forcing them to follow the work schedules of the two manufacturing companies. In the case of Company B however, some key suppliers were involved to some extent in the manufacturing process and helped in the some problematic issues. Even though it was clear through the interviews that such relationships helped reduce vagueness and unpredictability as well as save money and time due to reduces paper work, it was clear that the relationships were not utilized to the fullest. Not all benefits that can be realized from such collaborative were reached in the two companies. Long term relationships can help in enhancing many work aspects such as:

- Enhanced design capabilities as suppliers can be involved in this stage and weigh in their ideas and thoughts. Company B has made an effort to enhance this aspect, however in general suppliers were not involved in this stage.
- Enhanced financial stability as long-term relationships increase predictability and reduces vagueness. However, it was clear through the interviews that both companies were involved in unbeneficial relationships that did not match the required production needs and caused fluctuations in the financial stability of both companies due to time delays.
- Enhanced logistics, as supplier can provide transportation capabilities, and thus improve the lead time performance. This aspect was not mentioned by any of the interviewed employees.

- Enhanced inventory, as this aspect depends on suppliers being able to supply materials in time to avoid stock outs.
- Ability to offer technical assistance, as suppliers with development capabilities valuable to manufacturing companies by providing them with solutions that can save money and enhance quality.

The lack of unified common strategic objectives among company A and B with their suppliers can be a reason for the limited role suppliers' play in the relationship. The lack of supplier involvement in the designing, manufacturing and distribution parts did not allow the supply chains to reach the full benefits that can be reached from such collaborative relationships. It can also be deduced from the interviews that even though the functional objectives of supply chain management practices and performance measures were aligned in theory to main business objectives in both companies, there is still a problem in the application of day to day activities due to poor management and the influences of key customers. Employees sometimes find themselves applying instructions that they know are problematic. Employees also are unable to apply their suggestions or express their personal opinions on how some work related aspects can be improved, all that is due to poor management in some business units. As for key customers influence, it was deduced that at times both companies allow key customers to apply some pressure on them and surrender to their hard requests to avoid losing them. Even though customer satisfaction is highly important, but it seems that it comes first before the well being of the companies' employees as hard requests from customers are translated into stressful and pressured work environment for employees that have to suffer from a huge work load.

All of the above mentioned points can be related the misalignment between the functional objectives and the activities done to reach these objectives, the lack of supplier

involvement in different supply chain stages, the lack of unified strategic objectives among all supply chain partners and the poor use of power. Many improvements can take place to better benefit the financial standing of both companies through the full utilization of suppliers' capabilities and employee satisfaction level. The enhancements that can be realized through suppliers can help boost the competitive advantage as well, thus improve the overall performance of all companies in the supply chain.

The results also indicate that competitiveness is reached in both companies through the practices adopted by their supply chain management system. Different aspects such as time, quality, customer satisfaction, finances and information sharing were aspects that were improved through the application of supply chain practices. The improvements of these aspects as employees mostly mentioned helped in differentiating their offered products and services which enhanced the competitive position of the companies. However, it was found that in both companies the overall performance is measured mainly through financial measures. Benefits realized can be both financial and non-financial, thus both aspects should be taken into account when evaluating the overall standing and performance levels of each company. Also, overall performance can be further improved through the full utilization of the formed relationships.

Chapter 5- Results, Conclusion and Recommendations

5.1 Chapter Introduction

This chapter includes research main results which are presented in a summarized format. It starts with the conclusion of the whole work done, and then presents some of the limitations faced. Based on the found results in the previous chapter some recommendations are presented to organizations who could be interested in enhancing their overall performance through their supply chains practices. Finally, this chapter concludes with a set of areas for future research that can be beneficial for those interested in this area of research.

5.2 Conclusion

This research presented a number of contributions in the area of understanding the impact corporate strategy and supply chain management practices have on each other. It provides information on how supply chain practices can influence the competitive advantage of organizations and thus the overall organizational standing and performance.

This research provided a general introduction on the topic's objectives and research significance. Several contributions were found through the viewed literature. Firstly, the research examined supply chain management definitions and practices. Specifically how supply chains are managed and influenced by the corporate strategies of organizations in the supply chain. The early on stages of developing a supply chain, configuring its work processes and activities as well as short and medium term goals along the way were found to be directly influenced by the corporate strategy of main organizations in the supply chain. The research also found that supply chains will also influence the behavior of each individual organization in the supply chain as they will be forced to adopt some new processes, activities and regulations to better match the work objectives of their supply chains and to create harmony among partnering organizations. Thus, the influence between corporate stagey and supply chain management was found to be mutual.

The second thing this research examined is the impact of supply chain management practices and on both the competitive advantage and the overall organizational performance. It was found through that competitive advantage directly leads to successful organizational performance. SCM practices and activities can impact the organizations market shares and rate of return of investments. Firms with different levels of SCM practices will have different effects on organizational performance levels. Competitive advantage was found to be influenced by supply chain practices; such practices also affect the quality, cost, delivery, process innovation and product innovation. Having a competitive advantage over others in the same market suggests that organizations have more capabilities compared to others, these capabilities include: higher quality, lower product cost, faster delivery time and more reliability. Such capabilities were found to influence the overall organizational performance. Competitive advantage can affect positively the overall performance and thus lead to improved economical standing, higher rate of customer satisfaction and process effectiveness.

Using the theoretical information found through the literature, a conceptual frame work was developed that basically focuses on examining the way corporate strategy and SCM influence and impact one another. As well examining how SCM practices impact the overall organizational performance. A qualitative research was carried out to examine these two different relationships in private manufacturing organizations in Dubai, UAE. The found results mainly are aligned with the main literature findings. It was clear that SCM practices, short term functional objectives as well as supply chain performance measures are a reflection of the main business objectives set by the corporate strategy. It was also found that SCM practices and supplier relationship provide a great source competitive advantage since they can help save both time and effort. However, the results indicate that the relationships formed with suppliers are not being utilized to its fullest. Many aspects can be improved through long term relationships such as logistics, inventory and market lead time. The results also indicate companies are often influenced by key customers, taking in a huge load of work in an attempt to not lose them to available competition in the market ignoring how it will affect their employees and pressure them. Employees can be a great source of competitive advantage if well

managed and given an opportunity to express their ideas of how work can be done is available.

In general the results match the theoretical information found in the literature review with regard to the mutual influence between corporate strategy and SCM practices. However, it is clear that in both companies not all benefits that can be a result of such chains were realized. This is the result of the misalignment between the functional objectives and the actual activities carried out to reach these objectives due to poor management and the lack of supplier involvement in late work stages. Also this can also be related to the fact that in both companies the influence of both competitiveness and supply chain practices on the overall performance is measured in terms of the financial standing on the company only. Focusing on financial aspects only will not allow companies to realize other non-financial benefits.

5.3 Research Limitations

Even though limitations can be presented in a negative context, they can provide a great source of information for future research. Further discussion and analysis can be done on the topic of corporate strategy and supply chain management practices, and the limitations presented here can help steer future research in several directions.

One of the limitations is the number of companies that were examined throughout this research. Time was a huge factor in the study; it was not possible to examine more than two companies due to the limited time constraints. This study also examined the corporate strategy and supply chain management relation in private companies in the manufacturing domain in Dubai only. Even though markets are interconnected nowadays, but still there are some fundamental differences from one country and one market to the other. Even though found results can be a reflection of the way corporate strategy and supply chain management practices influence one another in local manufacturing organizations, results cannot be generalized on organizations in different markets. Restrictions, regulations and carried out supply chain practices differ from one industrial domain to the other.

This study also focused on examining the influence supply chain management practices have as an individual factor on the corporate overall performance without considering the influence some other factors have. Supply chain management practices represent only one factor among other factors that if aligned with work objectives can improve the overall performance. Other factors can include innovation processes, working environment and management style adopted by the organization. It is also important to add that the overall corporate performance incorporate many factors like financial aspects, quality of end product, customer satisfaction and meeting the set work objectives. The study did not examine how each factor of these is influenced individually by the application of supply chain management practices and activities.

5.4 Recommendations

As mentioned before, the final results found through the examination of the two case studies were aligned to the theoretical findings from the literature. Supply chain management practices and corporate strategy mutually influence one another, and the different adopted practices were found to enhance the overall standing and performance of the supply chain. However, through the analysis it was clear that the supply chains were not realizing the entire benefits of such collaborative relationships due to some problematic issues that need to be enhanced.

The selection of suppliers for a collaborative relationship should be done carefully as the strategic supplier relationships are very essential in realizing supply chain benefits (Gunasakan el at., 2001). For that reason, it is recommended that suppliers should be evaluated carefully before engaging in long-term relationships with them. Different aspects should be looked at and examined not only the financial standing of suppliers. Some of the points that can be taken under consideration are:

- **Dedication to quality:** product quality is one of the most important factors that influence customers' satisfaction levels. Suppliers' utilized processes, different used materials, approach to problem solving and preventive maintenance all should be taken under consideration to evaluate suppliers' dedication to quality.
- **Cost competitiveness:** competitive markets require having the ability to manage providing good quality products to customers at a competitive price. The ability of suppliers to provide high quality and at a competitive price should be evaluated closely before engaging in long-term relationships.
- **Open communication:** It is very important to be able to communicate openly with suppliers in order to avoid deception and maintain an honest collaborative environment. Thus, the current supplier communication policies must be considered and evaluated.

- **Timely Services:** The commitment to preset time schedules is very important to avoid delays and obtain lead time of over competitors, thus enhancing competitive advantage.
- **Flexibility:** Many customers appreciate giving them extra attention if when extra measures are used to satisfy their needs. Such "perks" can help sustain a customer base.
- **Knowledge in market:** This can help enhance responsiveness of the supply chain in case of market fluctuations or changes in the demand levels. This aspect will help in sustaining financial success.
- **Production capabilities:** Production levels should be closely examined to make sure that the supplier's can handle production when the level of demand is high. Ability to integrate designs, multi task and work under pressure all should be taken under consideration.
- **Financial Stability:** This aspect gives an indication about supplier's abilities to allocate large sums of money for purchasing purposes when demand is high. It also gives an indication about the supplier's successfulness level and production capabilities.
- **Location:** This is very important in order to evaluate how communications will take place. In this area supplier's transportation capabilities, just-in-time' performance as well as sourcing capabilities should be taken under consideration.
- **Inventory management:** The evaluation of this aspect depends on the current business state of the supplier. Good inventory management should help avoid stock-outs, and should provide easy access to available inventory.
- **Ability to provide technical assistance:** Suppliers with good knowledge in technical issues can be very essential in saving money and maintain quality.

Having mutual strategic objectives among companies and their suppliers is also very essential in avoiding misunderstandings, work mistakes, duplicated or invaluable activities. Such objectives will also involve suppliers in late stages of work. Involvement of suppliers can help enhance the way work is conducted, it can help come up with some innovative solutions to some problematic issues, thus enhance the competitive position of

the entire supply chain. Therefore, it is recommended that companies along with their supply chain partners' form some unified agreed upon strategic objectives and performance measures to insure all see eye to eye on work related issues. Shared objectives also will help enhance suppliers' commitment to the entire supply chain as well. The following figure shows how roughly how supply chain benefits are realized.

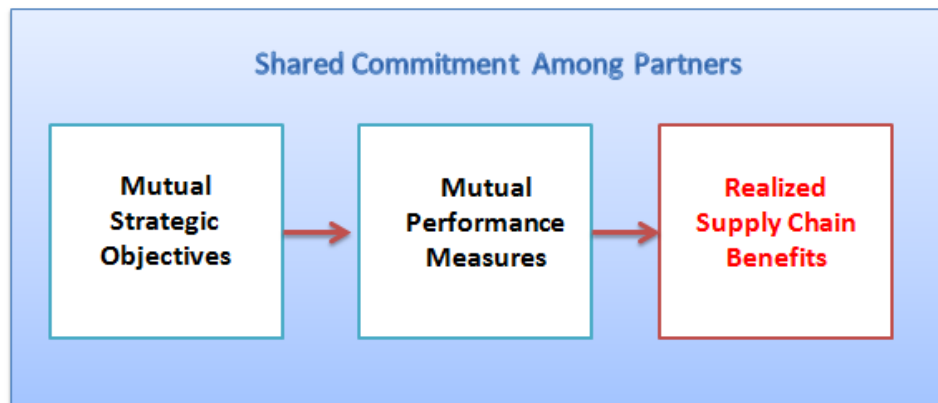


Figure- 18: Commitment among Supply Chain Partners.

As for corporate strategy, it should be able to provide conflict management mechanisms, especially in companies that are part of a collaborative relationship. Conflicts that may arise through different stages of a supply chain must be handled and managed properly rather than leaving them a side. Solving problems instantly will help avoid big blow ups in the future. It will also help identifying relationships that are unbeneficial and add no value to the overall supply chain performance, thus end them or try to enhance them. Also based on the analysis of the two case studies, it is recommended that management in different business units be evaluated consistently in order to make sure all work activities are carried out efficiently and that employees are voice and initiatives to improve work is taken under consideration. Improving internal management will help create a healthy working environment for employees that carry out functional supply chain operations.

Also, to enhance supply chain management practices and capabilities in general it is recommended that companies keep a balanced distribution of power among all

companies in the supply chain. Some companies are more powerful than others, thus they sometimes pressure their suppliers and demand extra work in less time, basically overloading which can cause some quality problems or conflicts. It is also recommended that companies should stay updated about the new technologies and innovative products that can be incorporated into their work, and thus improve their competitive advantage. Some of the designing and production tools can help save a lot of money as well as time and allow products to be customized. The availableness of customization options will help attract customers and will open the door for them to voice their specific product requirements and needs.

5.5 Areas for Future Research

This research opens the door for different opportunities for future research around the same presented topic. Research limitations provided in the previous section can help direct the path of future researchers as it sheds light on weak links and areas of research improvement. The following are some of the areas that can be considered for future research:

- Examining the influence supply chain management practices have on individual aspects of corporate performance such as quality or financial standing.
- Evaluating the effectiveness of some of the performance measures adopted by supply chain management, and whether they are value adding measures or not.
- Exploring employees' satisfaction towards their job on the successfulness levels of supply chains.
- Exploring how employee empowerment can influence the successfulness of supply chain management practices.
- Exploring how different supply chain modules influence the overall corporate performance.
- Exploring how supply chain management practices can differ from one industrial domain to the other, and what practices are fundamental in each industrial domain.
- Examining the influence each individual supply chain management practice has on the competitiveness level of the supply chain.

Appendices

Appendix – A

Table - 1: Sample Definitions of SCM (Croom al at., 2000)

Authors	Definition
Tan et al. (1998)	Supply chain management encompasses materials/supply management from the supply of basic raw materials to final product (and possible recycling and re-use). Supply chain management focuses on how firms utilise their suppliers' processes, technology and capability to enhance competitive advantage. It is a management philosophy that extends traditional intra-enterprise activities by bringing trading partners together with the common goal of optimisation and efficiency.
Berry et al. (1994)	Supply chain management aims at building trust, exchanging information on market needs, developing new products, and reducing the supplier base to a particular OEM (original equipment manufacturer) so as to release management resources for developing meaningful, long term relationship.
Jones and Riley (1985)	An integrative approach to dealing with the planning and control of the materials flow from suppliers to end-users.
Saunders (1995)	External Chain is the total chain of exchange from original source of raw material, through the various firms involved in extracting and processing raw materials, manufacturing, assembling, distributing and retailing to ultimate end customers.
Ellram (1991)	A network of firms interacting to deliver product or service to the end customer, linking flows from raw material supply to final delivery.
Christopher (1992)	Network of organisations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer.
Lee and Billington (1992)	Networks of manufacturing and distribution sites that procure raw materials, transform them into intermediate and finished products, and distribute the finished products to customers.
Kopczak (1997)	The set of entities, including suppliers, logistics services providers, manufacturers, distributors and resellers, through which materials, products and information flow.
Lee and Ng (1997)	A network of entities that starts with the suppliers' supplier and ends with the customers' custom the production and delivery of goods and services.

Appendix – B

Table - 2: Definition of Sub Constructs of SCM Practices

Sub-constructs	Definitions
Strategic supplier partnership	The long-term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits.
Customer relationship	The entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction.
Level of information sharing	The extent to which critical and proprietary information is communicated to one's supply chain partner.
Quality of information sharing	Refers to the accuracy, timeliness, adequacy, and credibility of information exchanged.
Postponement	The practice of moving forward one or more operations or activities (making, sourcing and delivering) to a much later point in the supply chain.

Appendix – C

Table - 3: Partnership Evaluation Parameters in a Supply Chain (Gunasekaran et al., 2001)

Partnership evaluation criteria	References
Level and degree of information sharing	Toni et al. (1994), Mason-Jones and Towill (1997)
Buyer-vendor cost saving initiatives	Thomas and Griffin (1996)
Extent of mutual co-operation leading to improved quality	Graham et al. (1994)
The entity and stage at which supplier is involved	Toni et al. (1994)
Extent of mutual assistance in problem solving efforts	Maloni and Benton (1997)

Appendix – D

Table - 4: Framework of Metrics for the Performance Evaluation of SCM (Gunasekaran et al., 2001).

Level	Performance metrics	Financial	Non-financial
Strategic	Total supply chain cycle time		✓
	Total cash flow time		✓
	Customer query time	✓	✓
	Level of customer perceived value of product		✓
	Net profit vs. productivity ratio	✓	
	Rate of return on investment	✓	
	Range of products and services		✓
	Variations against budget	✓	
	Order lead time		✓
	Flexibility of service systems to meet particular customer needs		✓
	Buyer-supplier partnership level	✓	✓
	Supplier lead time against industry norms		✓
	Level of supplier's defect free deliveries		✓
	Delivery lead time		✓
Tactical	Delivery performance	✓	✓
	Accuracy of forecasting techniques		✓
	Product development cycle time		✓
	Order entry methods		✓
	Effectiveness of delivery invoice methods		✓
	Purchase order cycle time		✓
	Planned process cycle time		✓
	Effectiveness of master production schedule		✓
	Supplier assistance in solving technical problems		✓
	Supplier ability to respond to quality problems		✓
	Supplier cost saving initiatives	✓	
	Supplier's booking in procedures		✓
	Delivery reliability	✓	
	Responsiveness to urgent deliveries		✓
Operational	Effectiveness of distribution planning schedule		✓
	Cost per operation hour	✓	
	Information carrying cost	✓	
	Capacity utilization		✓
	Total inventory cost as:		✓
	Incoming stock level		
	Work-in-progress		
	Scrap value		
	Finished goods in transit		
	Supplier rejection rate	✓	✓
	Quality of delivery documentation		✓
	Efficiency of purchase order cycle time		✓
	Frequency of delivery		✓
	Driver reliability for performance		✓
	Quality of delivered goods		✓
	Achievement of defect free deliveries		✓

Appendix – E

MANAGEMENT BOARD

PRODUCTION DEPARTMENT	DEVELOPMENT AND IT DEPARTMENT	COMMERCIAL DEPARTMENT	PROJECT MANAGEMENT AND IMPLEMENTATION DEPARTMENT	QUALITY DEPARTMENT	ECONOMICS AND FINANCE DEPARTMENT	HRM AND GENERAL AFFAIRS	GROUP FOR STRATEGIC DEVELOPMENT
roof and façade production	development	marketing	project management	quality centre	finance	personnel department	strategic innovation
steel construction production	technical support	purchasing	project management office	quality control	controlling	education and training centre	competencies development
internal logistics, shipping and transportation	organisational development	sales	assembly and service	laboratory	accounting	legal office	business excellence development
maintenance	business IT solutions	sales operative		certification		security	public relations
	IT infrastructure	market network development				kitchen	

Figure - 19: Organizational Structure of Company B.

Appendix – F

Table - 5: List of Required Materials for Each of the Different Container Parts

Front End	Base	Rear End	Side Wall	Roof	Floor
- Corten A - Steel	- Corten A - Steel	- Corten A - Steel - SMSOYA - Electro Zinc Plated - EPDM - SCW49	- Corten A - SS41 - Electro Zinc Plated - A.B.S	- Corten A	- Apitong / Hardwood - Electro Zinc Plated

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