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**Supply Chain Management  
In Selected Clothing Retail Businesses**

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# **Supply Chain Management**

## **In Selected Clothing Retail Businesses**

### **ABSTRACT**

In today's highly competitive, global market place the pressure on organizations to find new ways to create and deliver value to customers grows ever strong. At the same time, market maturity combined with new sources of global competition has led to over-capacity in many industries leading to an inevitable pressure on price. Managers are increasingly interested in actively managing their supply chains because of environmental changes.

The study is aimed to identify the importance of effective supply chain management and call out the awareness on the supply chain management in the clothing retail business. The main objective of the study is to provide a framework for effective supply chain management in the retail clothing business and give some recommendations on how to achieve effective supply chain management.

Supply chain management plays an important role on the competitive relativities in achieving success in the market place. The focus of supply chain management is upon the

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management of relationships in order to achieve a more profitable outcome for all parties in the chain. The framework of effective supply chain management can be described as a network of production under the economic and market environment which processing with the characteristics as purchasing, distribution, customer, and demand to purchase again. Each part of the operation in the model provides the positive effects to the others under the whole supply chain management to avoid the uncertainty and improve the competitive advantage. Information technology can be used to facilitate the company to achieve effective supply chain management.

The empirical study provided a clearer vision on the supply chain management from the practical aspect. The survey greatly confirmed importance and significant effects of supply chain management in the retail clothing business.

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# **CHAPTER 1**

## **NATURE AND SCOPE OF STUDY**

### **1.1. INTRODUCTION.**

In today's highly competitive, global market place the pressure on organizations to find new ways to create and deliver value to customers grows ever strong. At the same time, market maturity combined with new sources of global competition has led to over-capacity in many industries leading to an inevitable pressure on price.

Managers are increasingly interested in actively managing their supply chains because of three environmental changes (Fredendall and Hill, 2001: 6). First, technology has been developed to simply communication between members of the supply chain. Secondly, new management paradigms have developed that are being widely shared among supply chain members so that it is simpler for these managers to coordinate their efforts. Third, the development of a highly trained workforce allows employees at each stage of the supply chain to assume responsibility and authority necessary to quickly make decisions and take actions required to coordinate the supply chain. While the three changes above make supply chain management possible, it is competition in the marketplace that is pushing firms to make supply chain management a reality.

Supply chain dynamics involved much more than finding the materials you need at a good price (Östring, 2004: 1). It highly related with the company strategy and

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competitive advantage.

The objective of the study is focused on the retail clothing business. The new competitive landscape forces organizations to identify new opportunities to gain competitive advantage. Apparel companies should be beginning to find more fashionable items in response to diversified consumer demands as the industry becomes global (Standard and Poor's, 1998). For retail clothing business, these market changes require more product variety, which generates demand uncertainty and supplier variability. Many managerial problems are experienced on supplier management, product forecasting, inventory management, timely distribution and customer satisfaction. Supply chain management is concerned as efforts to reduce inefficiencies and solve the problems throughout the supply chain, from supplier to final customers.

## **1.2. THE PROBLEM STATEMENT AND OPPORTUNITY UNDER INVESTIGATION**

Supply chain management has been identified and researched in many industries including automobile, food service, healthcare, information technology, and retailing sector. However, limited information is available about the functions and practical experiences of the supply chain management in the retail clothing business.

The study will focus on the importance of the supply chain management and framework of an effective supply chain management in the clothing retail business. The real meaning of supply chain management will be defined. The related practical skills and effective management issues will be discussed. The research specially focuses on the retail clothing business in South Africa.

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The clothing retail businesses are spread all over the country. The size and scale of the businesses are various. Also the target customer and markets are quite different. Therefore, supply chain, as a dynamic is difficult to be covered in all the aspects in the study. The study will focus on the selected clothing retail business in South Africa.

### **1.3. THE GOALS OF THE STUDY**

The essence of this study is to demonstrate the importance of the supply chain management and provide a framework of effective supply chain management in the retail clothing business. As well as the study will determine how effective supply chain management improves the competitive advantage and performance.

To achieve the main objective, the following objectives must be reached, namely:

- Define the supply chain management in the retail clothing business.
- Identify the importance of the effective supply chain management.
- Discuss the problems and ineffective phenomenon involved in supply chain management.
- Provide the framework of effective supply chain management in the retail clothing business.
- Create a model for effective supply chain management --- managing the supply chain as a network.

It is expected that the theoretical management knowledge could reflect in an effective way in the practice. The empirical study and successful samples would be an important supplement and proof of the literature study.

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## **1.4. THE INVESTIGATION METHODOLOGY AND TECHNIQUES**

### **1.4.1. The investigation techniques.**

The following techniques for investigation are used in this study.

- Use five clothing retail company whom are The Edcon Group, Sunrising Company, Pep store, Foschini and Woolworths as the sample for the effective supply chain management investigation.
- Use the questionnaire in 120 retail clothing businesses to investigate the different levels of the recognition on supply chain management, thereby to identify the importance of the supply chain management.
- Use the statistical data analysis to gather the information of the business performance to the effective supply chain management.

### **1.4.2. Methodology.**

The research adopted the quantitative design using the mail survey method.

#### **1.4.2.1. Instrument.**

For the convenience of the research, basic statistic information including size of the company, product style and distribution channel is required from the respondents.

- The size of the selected companies is divided into two parts: “small to medium size” and “medium to large” size. Small to medium size is defined as the average

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turn over less than 20million and employees less than 100 persons; medium to large size is defined as the average turn over more than 20 million and employees more than 100 persons, most of these companies are formed as chain stores with multi-brand products.

- Basic statistic information is used for respondents to divide their product line into two groups, fashion product and basic product and to describe the proportion of each type of product to the total production by percentage. The product style is decided by the percentage of the each kind of product in the company and it reflects the company's fashion level. In the questionnaire, a detailed definition of fashion product and basic product was presented to eliminate confusion from misunderstanding of the terms. The definition is adopted from Priyadarshi's research instrument (1996) in studies of the apparel industry namely that fashion goods refer to products of which the demand is hard to forecast due to high fashion level and seasonality and have quite varied style changes season by season."

#### **1.4.2.2. Data sampling.**

A random sample of 120 retail-clothing businesses was selected for the research. The population consists of retailers and managers whose main products relate with clothing industry. The sample companies were selected from all sizes of retail clothing business. The respondent companies were stratified into two different groups by means of a cross tabulation of size (i.e. number of employees and turnover), product type (i.e. fashion product and basic product) and distribution channel (single shop and chain store) for the conclusion on the research result.

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#### **1.4.2.3. Return rate for the survey.**

A total of 120 mails have been sent out, requesting companies to complete the questionnaire. A total of 33 companies have been responded, resulting in a 27.5% (33/120) respond rate. According to the basic statistic information, the respondent details of the survey were statistically summarized and presented in the following table.

#### **1.4.2.4. Data collection and analysis.**

The data for the study was obtained by performing a survey amongst the selected companies in the clothing retail industry by means of a questionnaire designed specifically for this purpose. The questionnaires (attached with Appendix A) were mailed to the sample group through post and e-mail. Intensive follow-up activities, including e-mail, calls, postcards, and letters were used to improved return rate.

The data gathered from the questionnaire were analyzed by using a Microsoft Excel spreadsheet. The results obtained were used to formulate final results and conclusions.

### **1.5. A PROVISIONAL CHAPTER DELINEATION**

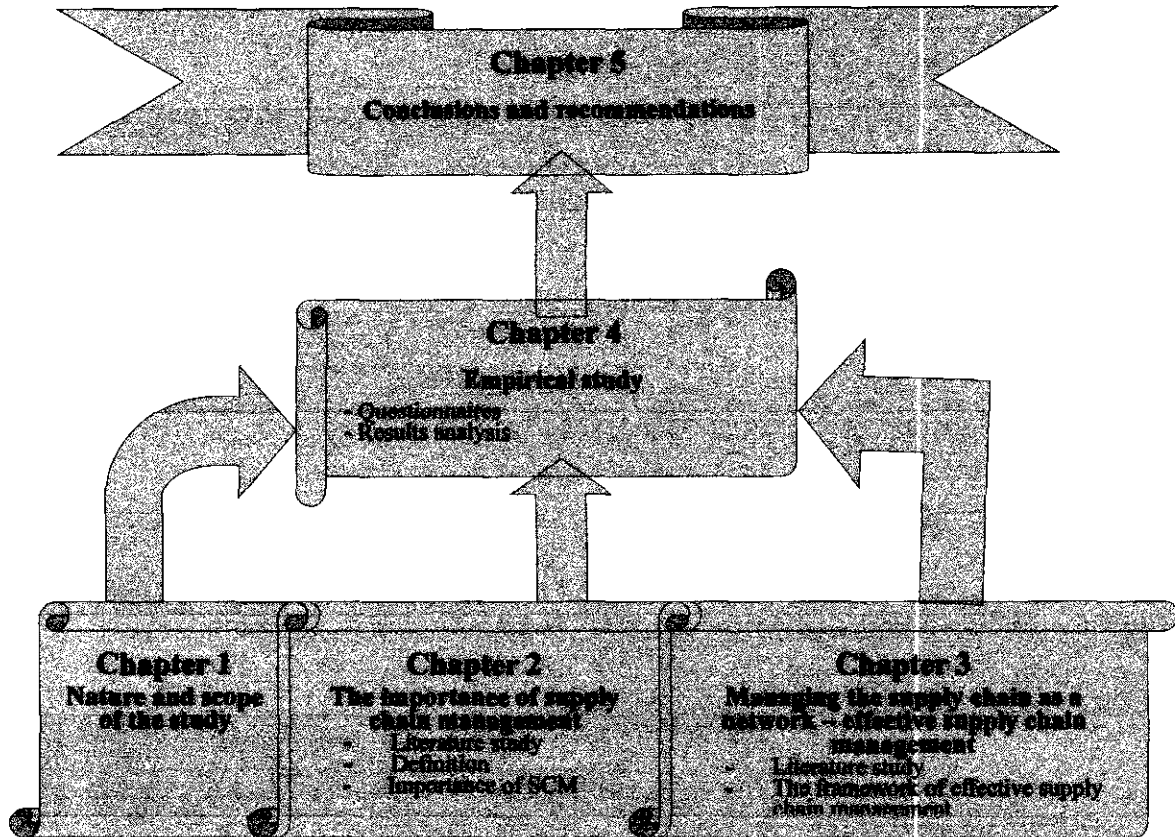
Figure 1 provides an overview of the interrelationships between the various sections of the study. The chapter descriptions define the dissertation as follow.

#### ***Chapter 1: Nature and scope of the study***

The general problem area, the specific problem of the study will be listed. The important of the research and the research approach of the dissertation will be introduced. The limitations and contributions on the research in the supply chain management will be described.

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Introduction, problem statement, the goals and objectives of the study, research methodology and limitation and questions of the study will be the sub topics of this chapter.



**Figure 1.: Layout of the study**

***Chapter 2: The importance of the effective supply chain management.***

The definition of supply chain management will be defined through the literature study. The nature and characteristics of the clothing retailing business will be introduced as a background of this study. The importance of supply chain management will be identified. The supply chain challenges faced to the clothing retail business will be discussed and

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analyzed..

Supply chain comes from a picture of how organizations are linked together as viewed from a particular company. The organizations can achieve significant competitive advantage by the way they configure and manage their supply chain operation.

***Chapter 3: Managing the supply chain as a net work — effective supply chain management.***

The framework of effective supply chain management is provided through literature study and practical experiences. The effective supply chain management stresses the need to extend logistics integration upstream to suppliers and downstream to distributors and customers (Christopher,2004:214). The problems and ineffective phenomenon can be outlined to facilitate the development of integrated end-to-end supply chain processes.

Supply chain management can be achieved effective through logistics and integration. The new paradigms concerning supply chain management involve total integration such that each element of an entire supply chain looks through its supplier's supplier and its customer's customer.

Technology plays an important role for the effective supply chain management.

***Chapter 4: The empirical study.***

A research based on the supply chain questionnaire is conducted to demonstrate and prove the literature study. Qualitative and quantitative methods are used to analyze the survey results.

The goal of the study is to call out the awareness on the importance of the supply chain management and provide the framework of effective supply chain management. The

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empirical study is the important supplement of the theory.

### ***Chapter 5: Conclusions and recommendations.***

The dissertation is summarized with emphasis upon the results obtained and the contribution made by these results. Some recommendations are provided for how to achieve the effective supply chain management in the retail clothing business. Suggestions for further research are also outlined.

#### **1.6. KEY TERMS.**

- **Single shop:** It is defined as individual retail shop. In this dissertation, single shop means that the retail business formed as one individual shop.
- **Chain store:** It is defined as one of many retail shops owned and controlled by the same company (Hornby and Cowie, 1984: 187). In this dissertation, chain stores can be described as the retail business with more than two individual retailers and outlets.
- **Venders:** It is defined as seller or supplier. In this dissertation, venders can be described as suppliers including importers, local factories and wholesalers.
- **Supplier:** it can be defined as person or firm supplying goods, etc (Hornby and Cowie, 1984: 1184). In this dissertation, suppliers include importers, local factories and wholesalers.
- **Distribution channel:** It is the channel of distributing or being distributed or the manner of being distributed (Hornby and Cowie, 1984: 346). In this dissertation, distribution channel can be described as the way and channel of distributing the stocks and can be separated as single shop and chain stores.

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## **1.7. SUMMARY.**

In this chapter, the problem from which the study evolved has been stated, as well as the main objective the study aims to achieve, namely to demonstrate the importance of the supply chain management and provide a framework of effective supply chain management in the retail clothing business. In addition to this, the detailed objectives of the study have been defined. Further the method of research has been described in detail. Some key terms related with the study are introduced shortly. The chapter has been concluded with a layout of the study to follow. The proposal chapter delineation will be used for a guide of the dissertation.

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<p style="text-align: center;"><b>CHAPTER 2</b></p> <p style="text-align: center;"><b>THE IMPORTANCE OF SUPPLY CHAIN MANAGEMENT</b></p>
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## **2.1. INTRODUCTION**

Traditionally most organizations have viewed themselves as entities that exist independently from others and indeed need to compete with them in order to survive. However such a philosophy can be self-defeating if it leads to an unwillingness to cooperate in order to compete. Behind this seemingly paradoxical concept is the idea of supply chain management (Christopher, 2004: 15).

Supply chain management has received attention since the early 1980s. There can be little dispute that supply chain management is an area of importance in the field of management research.(Bechtel and Mulumudi,1996; Harland, 1996: 63-80; Cooper et al., 1997). Supply chain management and other similar terms, such as network sourcing, supply pipeline management, value chain management, and value stream management have become subjects of increasing interest in recent years, to academics, consultants and business management (Christopher, 1992; Hines, 1996; Lamming,1996; Saunders, 1995,1998). It is recognized in unit of competitive analysis (Macbeth and Ferguson, 1994; Cox,1997). Companies will not seek to achieve cost reductions or profit improvement at the expense of their supply chain partners, but rather seek to make the supply chain as a whole more competitive. In short, the contention that it is supply

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chains, and not single firms, that compete is a central tenet in the field of supply chain management (Christopher, 1992; Macbeth and Ferguson, 1994).

## **2.2. DEFINATION OF SUPPLY CHAIN MANAGEMENT**

A supply chain is a sequence of suppliers, warehouses, operations, and retail outlets. Different companies may not have identical supply chains due to the nature of their operations, and whether they are primarily a manufacturing operation or a service operation (Stevenson, 1999: 694).

The supply chain is the network of organizations 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 (Christopher, 2004:15). Thus for example a shirt manufacture is a part of a supply chain that extends upstream through the weavers of fabrics to the manufacturers of fibers, and downstream through distributors and retailers to the final consumer. Each of these organizations in the chain are dependent upon each other by definition and yet closely link and relate each other in practical operation processes.

Supply chain management is managing the movement of goods from raw materials to the finished product delivered to customers. Supply chain management aims to reduce operating costs, lead times, and inventory and increase the speed of delivery, product availability, and customer satisfaction (Marks, 2003: internet).

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Chase and Aquilano (2001:17) mention that the purpose of supply chain management is to apply a total system approach to managing the flow of information, materials, and services from raw material suppliers through factories and warehouses to the end customer. Recent trends such as outsourcing and mass customization are forcing companies to find flexible ways to meet customer demand. The focus is on optimizing core activities to maximize the speed of response to changes in the customer expectations.

Supply chain management is not the same as 'vertical integration'. Vertical integration normally implies ownership of upstream suppliers and downstream customers. This was once thought to be a desirable strategy but increasingly organizations are now focusing on their 'core business' – in other words the things they do really well and where they have a differential advantage. It must be recognized that the concept of supply chain management whilst relatively new, is in fact no more than an extension of the logic of logistics (Christopher, 2004:16-17).

Table 1 gives an explanation of different definitions associated with the concept of supply chain management.

**Table 1 A sample of definitions of supply chain management**

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<b>Authors</b>	<b>Definition</b>
Tan et al. (1998:45)	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 focused on how firms utilize their suppliers' processes, technology and capability to enhance competitive advantage. It is a management philosophy that extends traditional intra-enterprise activities by

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	bringing trading partners together with the common goal of optimization and efficiency.
Berry et al. (1994:20)	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.
Saunders (1995:82)	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 (1991:13)	A network of firms interacting to deliver product or service to the end customer, linking flows from raw material supply to final delivery.
Christopher (1992:82)	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 (1992:65)	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 (1997:226)	The set of entities, including suppliers, logistics services providers, manufacturers, distributors and resellers, through which materials, products and information flow.
Lee and Ng (1997:191)	A network of entities that starts with the suppliers' supplier and ends with the customers' custom the production and delivery of goods and services.

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*Adaped from Lewis and Slack (2003) Operations management.*

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The table is not intended to provide a comprehensive review of supply chain definitions; rather the purpose here is to highlight some of the contrasting approaches to supply chain management existing in the literature.

The lack of a universal definition of supply chain management is in part due to the way the concept of supply chain has been developed. In fact, the concept of supply chain has been considered from different points of view in different bodies of literature. Such a multidisciplinary origin and evolution is reflected in the lack of robust conceptual frameworks for the development of theory on supply chain management (Lewis and Slack, 2003:7). As a consequence the schemes of interpretation of supply chain management are mostly partial or anecdotal with a relatively poor supply of empirically validated models explaining the scope and form of supply chain management, its costs and its benefits.

Summarized on the overview of the definitions from the literature study, ***supply chain management can be defined as a management network on the processes and activities that organizations involved, linking flows from raw material supply to final delivery in the form of products and services to enhance competitive advantage.***

***Supply chain management in the clothing retail business can be described as the network management on the supply chain that extends upstream through supplier (importer, manufacturer and wholesaler) to bring the stocks in and downstream through seller (chain store, distributor and other sales processes) to the final customer.***

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## **2.3. THE IMPORTANCE OF THE EFFECTIVE SUPPLY CHAIN MANAGEMENT**

### **2.3.1. The supply chain and competitive performance**

#### **2.3.1.1. Competitive advantage.**

In the past it was often the case that relationships with suppliers and downstream customers (such as distributors or retailers) were adversarial rather than co-operative. It is still the case today that some companies will seek to achieve cost reductions or profit improvement at the expense of their chain partners. Companies such as these do not realize that simply transferring costs upstream or downstream does not make them competitive. The reason for this is that ultimately all costs will make their way to the final marketplace to be reflected in the price paid by the end user. The leading edge companies recognize the fallacy of this conventional approach and instead seek to make the supply chain as a whole more competitive through the value it adds and the costs that it reduced overall. They have realized that the real competition is not company against company but rather supply chain against supply chain (Christopher, 2004: 16).

There is a great danger that those companies that do not recognize the need for organizational change, or that lack the will to make it happen, will never achieve the improvements in competitive advantage that integrated logistics management can bring (Christopher, 2004: 217). While transportation and logistics are crucial to a successful

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apparel or footwear operation, fierce competition requires the province of supply chain management to extend to everything from raw materials management to accurate sales forecasting (Speer, 2003: 24).

Logistics is essentially a planning orientation and framework that seeks to create a single plan for the flow of product and information through a business. Supply chain management builds upon this framework and seeks to achieve linkage and co-ordination between processes of other entities in the pipeline, i.e. suppliers and customers, and the organization itself. Thus the focus of supply chain management is upon the management of relationships in order to achieve a more profitable outcome for all parties in the chain. This brings with it some significant challenges since there may be occasions when the narrow self-interest of one party has to be subsumed for the benefit of the chain as a whole (Christopher,2004: 17).

#### **2.3.1.2. The new rules of competition.**

We are now entering the era of 'supply chain competition'. The fundamental difference from the traditional model of competition is that an organization can no longer act as an isolated and independent entity in competition with other similarly 'stand-alone' organizations. Instead, the need to create value delivery systems that are more responsive to fast-changing markets and that are much more consistent and reliable in the delivery of that value requires that the supply chain as a whole be focused on the achievement of these goals.

In the past the ground rules for marketing success were obviously: strong brands, backed up by large advertising budgets and aggressive selling. This formula now appears to have

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lost its power. Instead, companies must recognize that increasingly it is through their capabilities and competencies that they compete. Essentially, this means that organizations create superior value for customers and consumers by managing their core processes better than competitors manage theirs. By performing these fundamental activities in a more cost-effective way than competitors, organizations will gain the advantage in the marketplace.

### **2.3.2. The global supply chain.**

As international trade barriers fall, more companies are expanding to global operations. This is presenting tremendous opportunities and opening up previously untapped markets for products and services. It has also increased the number of competitors, and even companies that only operate within a single country and who are faced with increased foreign competition. Managing global supply chain that may have far flung customers and /or suppliers magnifies some of the challenges compared to managing a domestic supply chain (Stevenson, 1999:700). Obviously, distances and lead times become more critical as the supply chain becomes more stretched out. So, too, does the possibility of having to deal with language and cultural differences. Currency differences and monetary fluctuations are other factors that must be dealt with.

The ethical, social, and environmental policies of their suppliers and subcontractors as part of the process of globalization, more and more organizations are either sourcing their products directly from overseas suppliers, or have relocated large portions of their manufacturing base to operations in low-cost labor markets. It gives the most obvious

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reason companies today need to be concerned with actively helping to manage or at least to monitor and be aware of the global supply chain management. It is a fact of life in the global economy: For the foreseeable future, modern multinationals will continue to pursue strategies based upon the twin policies: Firstly, cutting costs in domestic operations through delayer, downsizing, and automation and Secondly, relocating manufacturing and assembly operations and outsourcing labor-intensive operations to low-cost labor markets in the developing world (Neef, 2004:12).

The growth in world trade has continued to outstrip growth in most countries' Gross National Product throughout the end of the 20<sup>th</sup> century and looks continuing for the foreseeable future. In part this trend is driven by expanding demand in new markets but also the liberalization of international trade through GATT/WTO accords has had a significant effect (Christopher, 2004: 129). To remain competitive in this new global environment, companies will have to continually seek ways in which costs can be lowered and service enhanced, meaning that supply chain efficiency and effectiveness will become ever more critical.

In a global supply chain, the sourcing path is usually much less straightforward than in the past (see Figure 2) (Neef, 2004: 46):

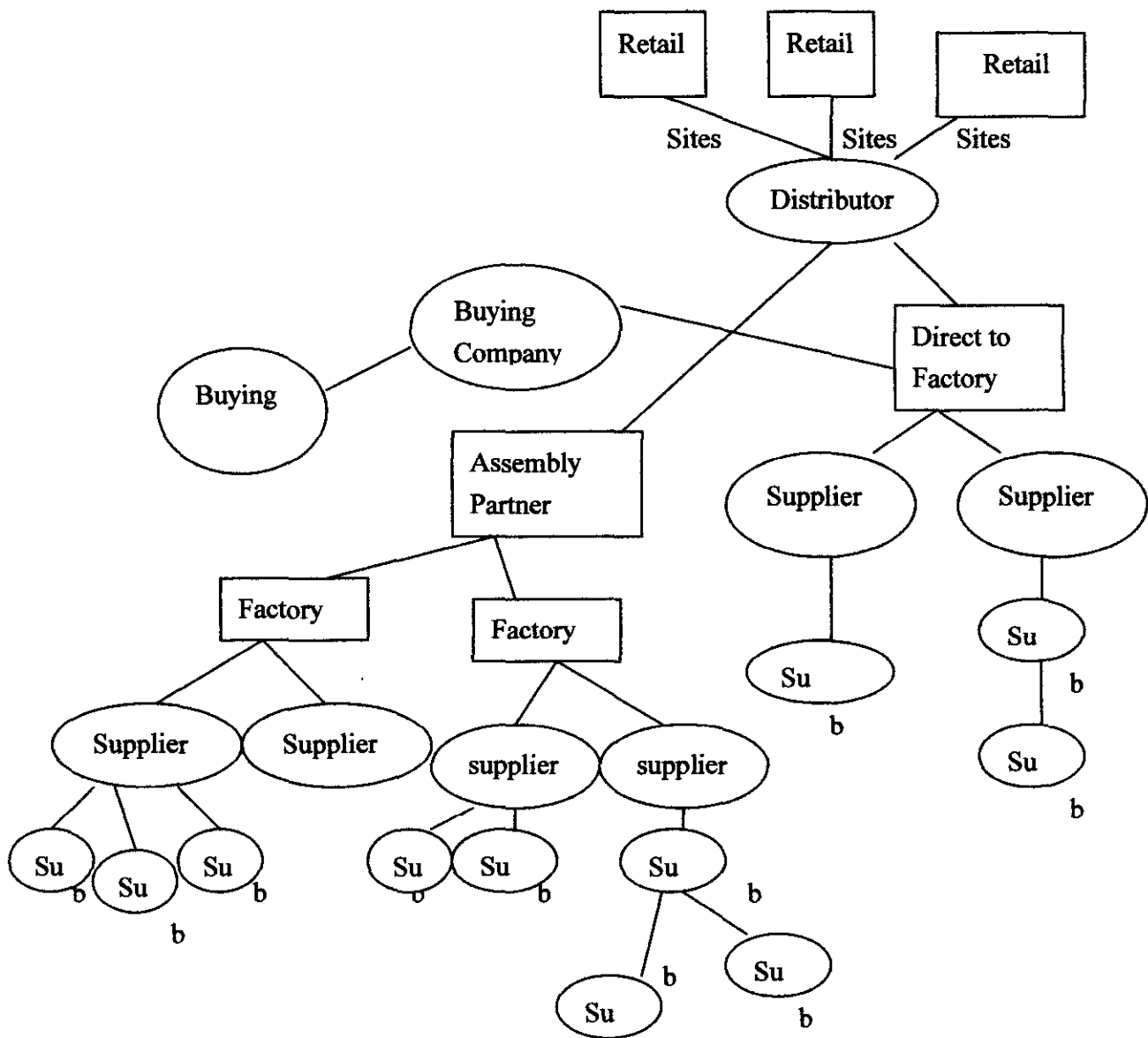


Figure 2: The extended Supply Chain

Source: Dale Neef, 2004. The Supply Chain Imperative.

Figure 2 shows the various levels of company-supplier relationships:

- **Tier-One Suppliers.** These are the company's most important suppliers, critical to

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production or to supply. Sometimes domestic, more often foreign based, these suppliers are usually selected and managed directly by the company's procurement professionals.

- ***Tier-Two Suppliers and Below.*** Depending on the size of the buying company and the scale of its strategic sourcing exercise, tier-two and below suppliers may still be considered within a major company's supply chain span of responsibility. A lot depends on the nature of the relationship. There seems to be a direct and fairly logical correlation based upon the extent to which a supplier contributes—or is indispensable—to the success of a company's production and the level of responsibility be applied.
- ***Supplier's Suppliers.*** Part of the problem is that many tier-one and tier-two suppliers themselves serve as an assembly or transportation clearinghouse, maintaining relationships with hundreds of smaller suppliers from around the world. It is a recipe for low-cost consumer goods, which provides much-needed employment for developing-economy workers, but only at price. Environmental and social violations are rampant.
- ***Downstream Subcontractors Including Product Disposal and Recycling Partnerships.*** Even with these various categories, it is important to remember that it is not only product assembly services that present a potential danger to a company's reputation. Downstream contracted services for waste or used product disposal, for example, constitutes one of the greatest subcontractor risk areas. Similarly, construction and maintenance work, even in domestic operations, are often carried out by small contractors employed on a short-term, often spot, contract.

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Christopher (2004:137-141) identified four factors critically important to global supply chains against with smaller horizons. These factors exist in the planning of all supply chains but are relatively more dominant in terms of mix and extent in a global context; they create the need for different solutions. The factors are as follows:

- ***Extended lead times of supply.*** The consolidation of global production into a single or a limited number of manufacturing sites creates contention in terms of the demands of the various markets, possibly requiring local product variations. Leading edge practice shows that the imposition of long manufacturing lead times is a largely artificial constraint. It is also normally essential for the global chain to hold a level of intermediate inventory between manufacturing and the customer to buffer against extended transit times.
- ***Extended and unreliable transit times.*** Transportation is always an important factor and cost for the global supply chain. It can be differ on the cost and time by the form of shipping, air freight, train and truck delivery etc. Such are the penalties of high inventories and inflexible response to marketplace needs that the trade-off will increasingly swing towards shorter transit times and hence swifter transit modes. Shipping, consolidation and customs clearance all contribute to delays and variability in the lead time of global supply chains.
- ***Multiple consolidation and break bulk options.*** The options for the management of international freight are several and the trade-offs will be

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complex and may vary for different product/market channels. They can be summarized under four main headings:

- Direct ship from each source to final market in full containers.
  - Consolidate in the supply region for final market in full containers.
  - Consolidate from each source for each theatre of operation with break bulk/intermediate inventory in the theatre for specific markets.
  - Consolidate in the supply region and also break bulk in the theatre of operations.
- ***Multiple freight mode and cost options.*** The mix of freight methods which may be practical in the context of the required lead time must be overlaid on the point above. In the context of global logistics the transportation management function needs to broaden to include responsibility for pipeline management and, in particular, end-to-end lead times. Whilst the per unit transport costs were obviously higher, the total logistics costs were lower. At the same time variability in the lead time of supply was dramatically reduced.

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## **2.4. MANAGING THE SUPPLY CHAIN AT RETAIL BUSINESSES.**

### **2.4.1. The characteristics of supply chain management in clothing retail business.**

Apparel companies should start to find more fashionable items in response to diversified consumer demands as the industry becomes global (Pashigian,1988; Standard and Poor's,1998). Apparel companies under this uncertain environment are experiencing many managerial problems in production planning, forecasting, inventory management, production system, and timely distribution. Supply chain management, defined as efforts to reduce inefficiencies and solve the problems throughout the supply chain, has been studied in many industries. Supply chain management, which is reflected in the strategy of quick response in the apparel industry, is getting more attention from practitioners and academics since the mid-1980s (Lee and Kincade, 2003:31).

Traditionally in the apparel industry, each chain member runs its business based upon separate concerns and interests, sometimes causing conflicts in the relationships with chain partners. Hammond (1992) notes that in the apparel industry, very little coordination exists among companies. Each segment has built production schedules based on their own forecasting methods, which may not accurately represent actual demand. Lack of information sharing on actual demand between chain members creates long lead-times and high levels of inventory with consequent risks of obsolescence at each segment (Kincade et al., 2001:301-327).

According to Aron (1998) and Byrne and Young (1995), retailers do not partner with their

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vendors well and abuse their powers to secure low prices by threatening suppliers with order withdrawals. Retailers are pressured by consumers to provide a wide assortment of products at prices that are considered reasonable by consumers. At the same time that consumers desire lower cost products, they are requiring increased variety and increased quality. Consumers want value in their purchases (Ko and Kincade, 2000; Singletary and Winchester, 1998). Retailers must seek low wage sources of production; demand strict costing structures from vendors; require improved quality control, and in general have manufacturers reduce margins to provide lower cost but better made products (Lee and Kincade, 2003: 34). In the apparel industry, the upper end of the supply chain contains an abundant supply of available manufacturers and low wage workers from various countries (Bonacich and Appelbaum, 2000; Hill et al., 1999; Iyer and Bergen, 1997). Manufacturers compete for retail business, and retailers select vendors, primary on a cost basis. Retailers can use this competition among manufacturers to their own advantage in demanding lower costs and improved quality for goods and services.

#### **2.4.2. The supply chain challenges facing by the clothing retail business.**

While transportation and logistics are crucial to a successful apparel or footwear operation, fierce competition requires the province of supply chain management to extend to everything from raw materials management to accurate sales forecasting. In today's apparel industry, as many companies focus on their core competencies and outsource the rest, the ability to compete lies in the efficiency of complete supply chains, not individual companies. Finding success are those companies that not only optimize their own internal operations, but also streamline processes that they share with their partners, both

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upstream and downstream (Speer, 2003:24).

Stephen Tierney (2003) summarized that 97% of clothes retailers he has spoken to agree that the supply chain is a strategic imperative. Some important supply chain challenges faced up in the fashion industry.

- Quality up, cost down. The obvious supply chain implication there is that clothing retailers need to find “new” sources of manufacturing.
- Relationship problems. Manufacturers and retailers in the fashion industry face a similar dilemma –throw fashion designers into the mix and challenge looms even larger.
- Togs might fly. On the manufacturing side, fashion is becoming so fast retailers are having to “bringing their buying power” closer to home. In other words, they have to work with textile manufacturers that are at least on the same side of the world as them.
- Speed up time to market. Successful retailers have to focus on the design element. Local manufactures are important and ones with design resource are preferred to speed up time to market.
- Cultural different. There is a kind of hierarchy. Retailers are the buyers while manufacturers are supplicants looking for work. Design act as go between. People need “excitement” from their fashion shopping experience they do feel is the result of someone’s creativity. The quality and cost are always a contradiction and can only be managed as a polarity management.

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### **2.4.3 The core components and dimensions of supply chain activities in clothing retail business.**

In a time of shortening product life cycles, complex corporate joint ventures, and stiffening requirements for customer service, it is necessary to consider the complete scope of supply chain management, from supplier of raw materials, through factories and warehouses, to demand in a store for a finished product (Davis, 1993: 35). There are three core components in the definition of supply chain management (Lee and Kincaid, 2003:32):

- The range of participants. In the retail clothing business, all channel members within a company or between companies, including supplier, manufacturing, distributor and customer, should be involved in the chain activities and collaboration between members.
- The flow of both materials and information. Agreement across definitions is that materials, whether raw materials or finished goods, and information flow simultaneously both upstream and downstream in the chain.
- Integrated and coordinated value-added activities are required (i.e. cross – functional approach, joint planning and forecasting, flexible operations), in order to manage the flow of materials and information and to provide high customer value.

Six specific dimensions of supply chain management can be identified for the supply chain activities. Each dimension may contain multiple activities for which the adoption levels of chain members can be assessed. The level of supply chain management activities

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can be determined by the extent to which supply chain members understand the characteristics and key issues, implement techniques of supply chain management, and are willing to eliminate the barriers between members (Lee and Kincade, 2003: 32-33).

- The first dimension of supply chain management is the establishment of collaborative partnerships between chain members. Partnership is defined as “ ... an agreement between a buyer and a supplier that involves a commitment over an extended time period, and includes the sharing of information along with a sharing of the risks and reward of the relationship (Ellram and Cooper, 1990:10). A close partnership is not only a prerequisite for supply chain management, but it can also result from successful supply chain management. Therefore, activities that can enhance the long-term relationship through collaboration between chain members (e.g. joint planning and demand forecasting, accurate and timely information sharing throughout the chain, and technology sharing) are required activities to advance to a partnership (Spekman et al., 1998:630-650).
- The utilization of information technology is the second characteristic to be measured. Electronic links between suppliers and carriers or customers are critical for information sharing. Technologies at each stage of the supply chain should be compatible with their partners' to better streamline the information. Types of information fed into this electronic links are data on sales, usage, product changes, promotions, discontinuations, and product and process (Sabath, 1998:698).
- Flexibility of operations is the third dimension. Agile manufacturing is achieved by flexible operations, which can be handle frequent style changes in the production line. Flexibility can be described as an ability to vary production

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volumes economically in response to market demands, to implement minor changes in product design for customization purposes, and to reduce delivery lead times, respectively (Narasimhan and Das, 1999:4-10).

- A service and performance measurement, established for each stage of the supply chain, is the fourth dimension. Performance measurements, as well as financial information, are needed to monitor supply chain management performances. Process reliability, changeover time, and schedule attainment can be measured to monitor the production. Perfect order completion, order fill rate, on-time delivery, and replenishment lead times are used to measure the delivery performance. Importance of metrics to facilitate change or to adopt an innovation in apparel manufacturing is noted by Regan (1997).
- The fifth dimension is top management's commitment and leadership. For the success of any new management initiative, top management's awareness of benefits, their willingness to implement, and desire to continue change are required to be a better participant in supply chain management (Higginson and Alam, 1997:19-31; Vass and Kincade, 1999:60-73). Top management is responsible for creating the culture of the company. Bethtel and Jayaram (1997:15-34) noted that the most important barrier to reengineering is people, not systems and technology.
- The final and sixth dimension is the knowledge of demand characteristics. Knowledge of demand characteristics determines the success of supply chain management. Characteristics of demand such as certain and uncertain, dependent or independent, seasonal or staple, are closely associated with key operational decisions. Characterizing demand patterns, aligning supply capabilities with

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demand cycles, and understanding the operational implications of surge or uncertainty caused by product proliferation and product-line complexity issues are related activities to this dimension (Copacino, 1998:23).

## **2.5. SUMMARY.**

According to the study on the overview of the definition on supply chain management, supply chain management can be summarized and defined as a network management on the processes and activities that organizations involved, linking flows from raw material supply to final delivery in the form of products and services to enhance competitive advantage.

In the special field of clothing retail business, supply chain management focused on the management on the supply chain that extends upstream through supplier (importer, manufacturer and wholesaler) to get stocks in and downstream through seller (chain store, distributor and other sale processes) to the final customer.

Supply chain management plays an important role on the competitive relativities in achieving success in the market place. The focus of supply chain management is upon the management of relationships in order to achieve a more profitable outcome for all parties in the chain. This brings with it some significant challenges since there may be occasions when the narrow self-interest of one party has to be subsumed for the benefit of the chain as a whole. Furthermore, the new era of competition and globalization required the effective supply chain management.

Some important supply chain challenges are faced up in the fashion industry: quality up, cost down; relationship problems; togs might fly; the devil is in the retail; speed up time

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to market; cultural different. Based on these challenges, the companies could achieve success not only optimize their own internal operations, but also streamline processes that they share with their partners, both upstream and downstream.

Six specific dimensions of supply chain management have been identified: the establishment of collaborative partnerships between chain members; the utilization of information technology; flexibility of operations; a service and performance measurement; top management's commitment and leadership and the knowledge of demand characteristics.

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**CHAPTER 3**

**MANAGING THE SUPPLY CHAIN AS A NET WORK**

**----- Effective supply chain management**

**3.1. INTRODUCTION.**

The transition to the 21<sup>st</sup> century seems to have been accompanied by ever-higher levels of turbulence in the business environment. Mergers and takeovers have changed the shape of many markets and global competition has changed for all time the rules of game. These pressures have combined to produce a new imperative for the organization: the need to be response (Christopher, 2004: 215). In a time of shortening product life cycles, complex corporate joint ventures, and stiffening requirements for customer service, it is necessary to consider the complete scope of supply chain management, from supplier of raw materials, through factories and warehouses, to demand in a store for a finished product.

Clothing business should be beginning to find more fashionable items in response to diversified consumer demands as the industry becomes global. For the retail business, the market changes require more product variety, which generates demand uncertainty and supplier variability. Supply chain management in the clothing retail business provides efforts to reduce inefficiencies and solve the problems in production planning, forecasting, inventory management and timely distribution.

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To manage in such a radically revised competitive structure clearly requires different skills and priorities to those employed in the traditional model. To achieve effective supply chain management is based on managing the supply chain as a network.

### **3.2. EFFECTIVE SUPPLY CHAIN MANAGEMENT IN THE CLOTHING RETAIL BUSINESS.**

In today's clothing industry, as many companies focus on their core competencies and outsource the rest, the ability to compete lies in the efficiency of complete supply chains, not individual companies. Successes are those companies that not only optimize their own internal operations, but also streamline processes that they share with their partners, both upstream and downstream.

#### **3.2.1. The overview of supply chain management in selected retail clothing business in South Africa.**

##### **3.2.1.1. The textile and apparel industry in South Africa.**

The textile and apparel industry is South Africa's sixth largest manufacturing sector employer and eleventh largest exporter of manufactured goods. After the mines, it is the second largest user of electricity and second largest source of tax revenue (ANON: 2004: 1-7).

#### **Economy**

The current volatility of global financial markets and realignments of emerging market

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economies has impacted on South Africa heavily, making the government's ambitious reform and restructuring process difficult. The Asian Financial Crisis hit South Africa particularly hard, as Japan and Taiwan are South Africa's two largest trade and investment partners. As a direct result, the South African Rand has lost 25 percent of its value against the dollar since January 1998. South Africa is experiencing an economic slowdown, which began in the 3<sup>rd</sup> quarter of 1997. In recent years, as the dollar/rand exchange rate became to strong and stable, more imported production arrived in South Africa, the clothing business got more competitive and challenge.

### **Tariff Structure**

The South Africa Textiles and apparel Industry has embraced the General Agreement of Trade and Tariffs (GATT) and the philosophy of trade liberalization and is striving to become more efficient and competitive. Large capital investments have already been made and the improving financial performance of some of the industry's major companies provides concrete evidence of the textile industry's determination to succeed.

### **Market Assessment**

South Africa experienced a huge increase in smuggling and fraud, which needs to be effectively controlled through customs patrol. More efficient and effective control could be achieved by improving systems and procedures, rather than increasingly the amounts of human and capital resources to the problem. The higher prices of raw materials and lower productivity cause more importers placing orders overseas.

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**3.2.1.2. Typical effective supply chain management in the selected retail clothing business--- Research on the Edcon Group.**

The research on the real company was accessed in the Edcon Group.

**About the Edcon Group**

The Edcon Group (Edgars Consolidated Stores) is South Africa's leading group of fashion retailers focused on clothing, footwear, accessories, mobile phones and home textiles with six chains: Edgars department stores, Jet, Smileys and Sales House value apparel stores, and ABC and Cuthberts specialty shoe stores. With aggressive expansion plans for the future, Edcon needed an IT solution that would improve and support the operations of its various chains, and allow the retailer to move its high fashion merchandise quickly to increase profitability.

**Challenges**

The main challenges faced to Edcon are multiple chains, aggressive expansion and fast moving fashions. John Day, Group IT Director for Edcon says, "Our five chains all need to be able to respond quickly to changing trends in the market, so we need a very responsive supply chain to ensure we are delivering the latest merchandise our customers are seeking. We also have expanded rapidly, and are planning to continue that growth into the future." (ANON, 2004).

**Supply chain efficeincis**

All supply chain functions, including efficient sourcing, quality inspection and movement of Edcon product from supplier to stores, have been centralized and reorganized to

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optimize the efforts of crucial support services.

<b>Edcon supply chain efficiencies</b>	<b>2004</b>	<b>2003</b>	<b>Change%</b>
Total logistics cost per unit handled (cents)	133.3	158.6	(16.0)
Total units through distribution centers	125.5	81.2	54.6
Distribution centers – Units per person per annum	319,320	269,916	18.3

### **Supplier management**

The new strategic alliance with Hong Kong based sourcing agent, Linmark Group Limited, has contributed meaningfully to improvements in the supply chain in respect of imports, by leveraging off Linmark's extensive sourcing, social compliance, and value-add capabilities. Importantly, Linmark provides the Group with access to an extensive hard-lines sourcing capacity.

### **Distribution and logistics**

The group's distribution and logistics team is responsible for the management of stock received from suppliers and distributing it to stores efficiently and productively.

A dedicated systems development team, which maintains and develops systems that ensure higher levels of productivity, supports this area. The systems employed at the various distribution centers, aside from Jewellery, are world class, enabling a high productivity rate, with Pick – to – Light and radio frequency being used for many years in the clothing distribution centers.

The distribution and IT systems are further supported through materials handling systems that are continuously being redesigned, developed and implemented to support quicker throughput times. During 2003 Markhams & exact! Distribution lines were replaced with

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RAPIDPAC technology, which more than doubled of their throughout rates.

The transport of stock to stores countrywide is outsourced to HRP distribution services, which relationship has been highly synergistic. This outsourced contract has earlier this year been extended for a period of 4 years.

The entire group's stock distribution is handled by the group's 4 distribution centers; 2 situated at Parow, 1 at Montague Gardens and 1 at Ndabeni, all based near the group's head office in Parow East, Cape Town. All storage, picking, packing and dispatching of stock is managed centrally at these distribution centers. The group utilizes HRP Distribution Services' hubs to cross-dock stock to stores in the various regions across South Africa, Swaziland, Namibia and Botswana (ANON: 2004).

The Edcon group is a typical effective supply chain management sample in the retail clothing industry. It provides a clear picture of supply chain and a format to be effective. Some other companies such as Woolworths, Foschini, Pep stores etc. also perform well in the supply chain management field. To gather all their advantages can contribute to outline a format of the effective supply chain management in this field.

### **3.2.2. The problems and ineffective phenomenon involved in supply chain management.**

- *Too narrow defined on supply chain management.*

One problem with supply chain management is that it too narrow defined a supplier's impact on a customer (Tom, 2002: 52). It is very often that the real meaning of the supply

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chain management is lost. Instead, the company focused on an intensive effort to improve the supplier management and ignore the rest of the activities.

Good supplier management, while praiseworthy, does not constitute effort to manage the rest of the aspects of delivering products to customers (Davis, 1993: 35). Supply chain management is a logistics solution to a broader problem. It's not the only solution --- just a part of a more comprehensive philosophy of competing based on total solution, not just logistical and cost advantages.

- ***Uncertainty propagates through a supply chain network in the retail clothing business.***

Clothing retail business can be simply described as a fashion industry. The business performance is directly related with the style and quality of the product, the speed to market and customer satisfaction. The real problem with such a confusing network is the uncertainty that plagues it. This uncertainty is observed on a daily basis as the customer's favorite, inventory amount, delivery, the feedback on the production and the re-order time. The problem is much more complicated when one considers the whole network.

Clearly, supply chain management should not be confused with supplier management. Supply chain management covers a far broader scope. Approaching problems with a systems view and a sound supply chain methodology can lead to great savings.

- ***The confusion between supply chain and value chain.***

“Supply chain – 1) the processes from the initial raw materials to the ultimate consumption of the finished product linking across supplier-user companies. 2) the functions within and outside a company that enable the value chain to make products and provide services to the customer.

Value chain – The functions within a company that add value to the products or services

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that the organization sells to customers and for which it receives payment.”

*Adapted from: APICS Dictionary, 8<sup>th</sup> edition, 1995.*

The differences between the definitions of the supply chain and the value chain are illustrated in Figure 3 as follow.

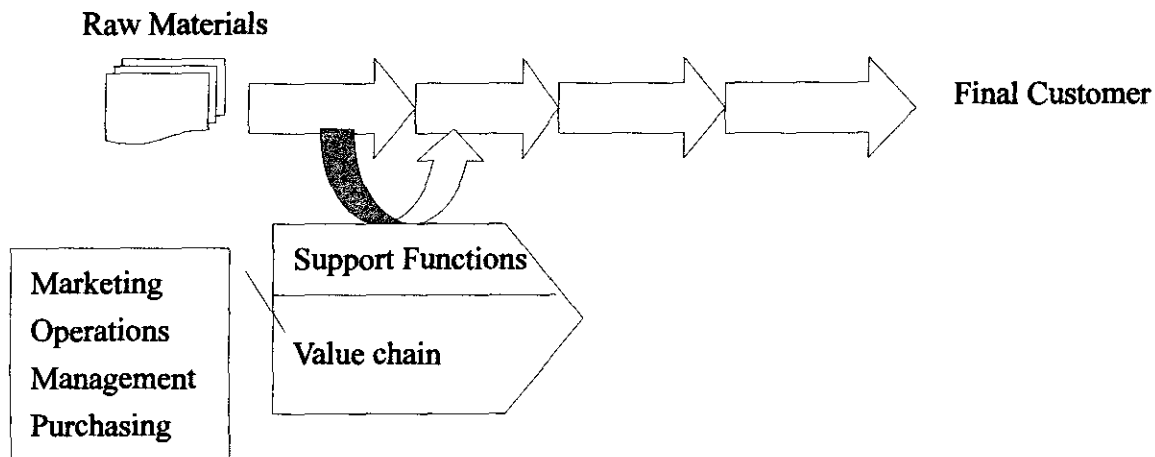


Figure 3: Supply chain

*Adapted from Fredendall and Hill (2001: 4) Basics of supply chain management.*

Figure 3 illustrate that the supply chain consists of more than the movement of physical goods between firms. The primary purpose of every firm in the supply chain is to make money. This helps to remind all supply chain members that increasing their own income requires them to do everything in their power to improve the operations of the supply chain. Figure 3 also illustrates that the value chain is enlarged for one firm in the supply chain so that some of the internal functions of the firm that add value can be shown.

To achieve effective supply chain management, it is important to find out these problems and understand the full meanings of the supply chain. Based on these aspects, we can establish the framework of effective supply chain management.

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### **3.2.3. The frame work of effective supply chain management in clothing retail business.**

Effective supply chain management focused on developing a framework for addressing the uncertainty that plagues the performance of suppliers, the reliability of ordering and transportation processes, and the changing desires of customers.

Effective supply chain model can be illustrated as a circle by figure 4 below. The functions are related and supported each other in the circle. From an analysis point of view, a supply chain management in the clothing retail business is simply a net work of production under the economic and market environment which processing with the following characteristics: purchase, distribution, customer and demand to purchase again. An important aspect of the model is that each part of the operation provides the positive effects to the others under the whole supply chain management to avoid the uncertainty and improve the competitive advantages.

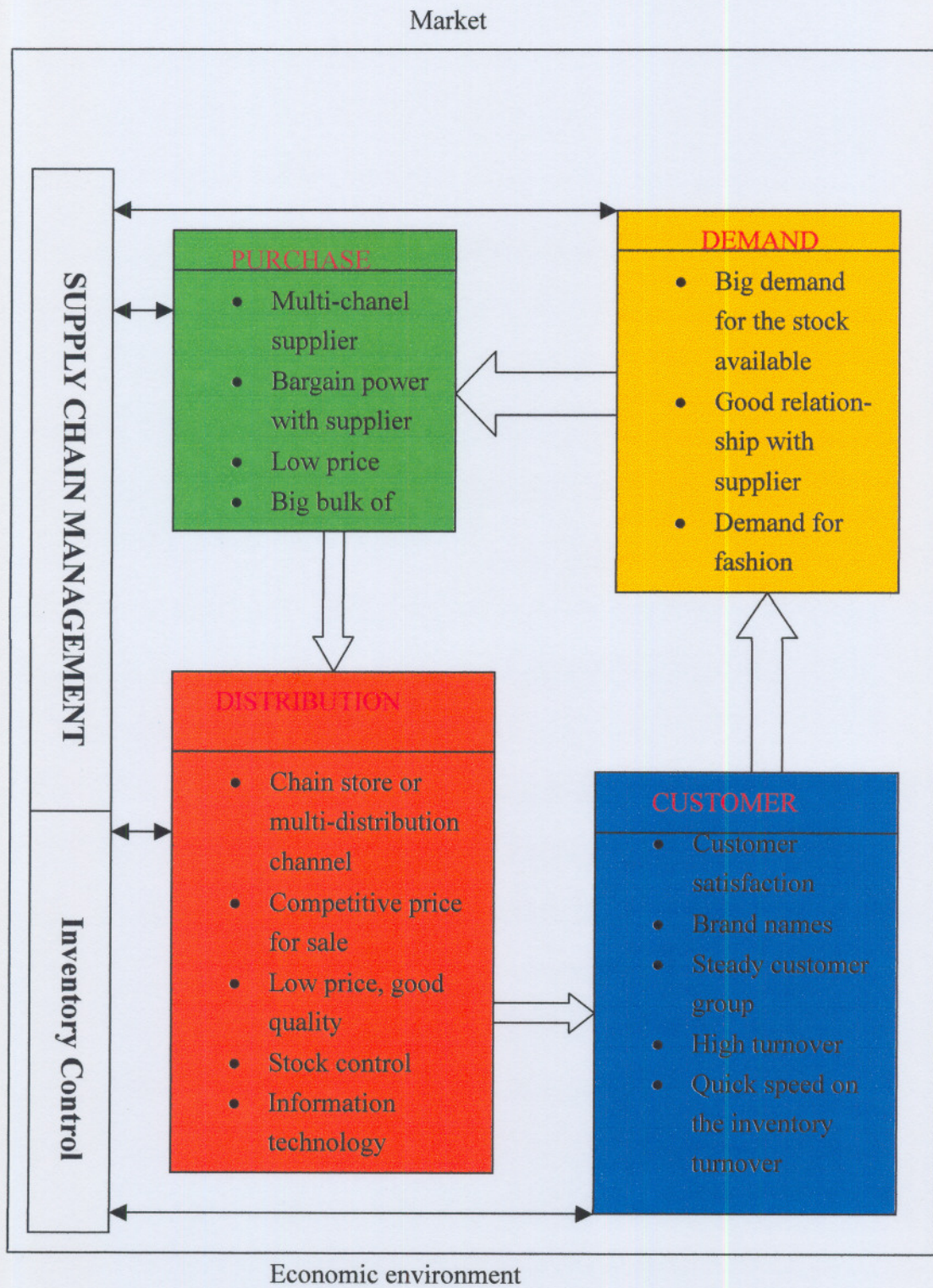


Figure 4: The model of effective supply chain management

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Figure 4 provides a model of effective supply chain management. It covers three main processes of retail business which are purchase (Demand and purchase), sale (Customer and distribution) and inventory control. The inventory control is the central focus of the supply chain management.

### **(1). Purchase and Supply chain management**

Purchasing contributes to the firm's efficiency and effectiveness in many ways (Fredendall and Hill, 2001:205).

- It helps to determine a firm's cost structure through negotiations with suppliers.
- Reducing the investment in inventory and improving the quality of incoming parts and components through its vendor selection and supplier development policies.
- Encouraging new product development by encouraging supplier involvement in technology development.
- Savings obtained by the purchasing function go immediately to the firm's bottom line.
- An important role performed by purchasing is boundary spanning. Purchasing is in position to obtain information not only about prices and availability of goods, but also about new supply sources and new technology in the market.
- Purchasing is defined as the term used in industry and management to denote the function of and the responsibility for procuring materials, supplies, and services (Cox, 1998).

Purchasing management is directly related supplier management. The style of managing the supplier relationship has changed. Superior products do not necessarily provide the

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only sustainable competitive edge. In the new approach, it is easy to clone or reproduce products. The advantages of mass production are available to every company through purchased production capacity. There are several differences among suppliers when comparing the new approach with the classic approach (Östring, 2004:6).

The New Approach – a company and its relationship to its suppliers:

- ❑ There are fewer suppliers.
- ❑ Each supplier is more important.
- ❑ There are more complex products.
- ❑ The supplier chain is longer – more players are in the supplier chain.
- ❑ The supplier's ability to change with its customer is increasingly important.
- ❑ Relationships are strategic.

Purchasing is involved not only in obtaining and receiving supplies into the firm, but also in resolving any problems with the supplies during their use. This requires purchasing to stay in communication with the users of the materials and supplies. Typical supply problems that need to be resolved are a supplier's inability to meet delivery dates, nonconformance of materials to specifications, receipt of damaged materials, or receipt of the wrong quantity of materials. An additional problem is when there is a need to change the specification for the materials to be purchased. To resolve these quickly, purchasing must stay in communication with the suppliers of the materials and have clear procedures in place for resolving problems (Fredendall and Hill, 2001: 208).

## **(2). Demand and supply chain management**

Demand management – The function of recognizing all demands for products and services to support the marketplace. It involves doing what is required to help make the

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demand happen and prioritizing demand when supply is lacking. Proper demand management facilitates the planning and use of resources for profitable business results. It encompasses the activities of forecasting, order entry, order promising, and determining branch warehouse requirements, interplant orders, and service parts requirements (Cox: 1998).

*Adapted from APICS Dictionary, 9<sup>th</sup> edition, 1998.*

The relationship the members of the supply chain have with each other is strongly represented in how the firms perform the demand management function. In supply chains where information is shared quickly and the information is accurate, the demand management function of those firms who do not serve the end customer is less one of forecasting and more one of responding to known needs of its customer, the next firm in the supply chain. When the relationships in the supply chain are more competitive or at arm's length, firms must actively manage demands. Demand management includes forecasting demand, accepting orders, and processing orders. It also includes stimulating demand when it is low (Fredendall and Hill, 2001: 117).

### **(3). Customer and supply chain management**

Integrating the customer into the management of the supply chain has several advantages(Fredendall and Hill, 2001: 5-8).

- Integration improves the flow of information throughout the supply chain. Customer information is more than data. Customer information is data that has been analyzed in some manner so that there is insight into the needs of the customer. In the typical supply chain the further the members of a chain are from the end customer, the less understanding these members have the needs of the

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customer. This increases the supply chain member's uncertainty and complicates the planning. By improving the information flow in the supply chain, firms throughout the chain have less uncertainty to resolve during the planning process. This allows all the firms in the supply chain to reduce inventory and consequently to shorten lead times while reducing their costs.

- Integrating the customer into the supply chain integrates the product development function with the other functions in the firm. This integration allows the product development staff to communicate more with the customer both internally and externally to the firm, which decreases the firm's response time to the customer's needs and tends to reduce product development time.
- The purpose of the internal customer logic is to keep each employee focused on the needs of the end customer. This helps employees recognize that not only is their firm just one link of a larger supply chain, but that the firm itself can be viewed as a chain of processes each of which is a customer of the preceding process.
- By focusing on customers, particularly the end customer, all members of the supply chain see the need and benefits of obtaining and using information about the end customer. If information from the end customer can be spread throughout the supply chain, there can be faster reaction from the supply chain to the end customer's requirements. If enough information is being shared, the uncertainty in the demand faced by each step in the chain is reduced, which also leads to a reduction in inventory throughout the chain. Reducing uncertainty reduces the need for just – in – case inventory.

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#### **(4). Distribution and supply chain management**

Distribution channel can be defined as the distribution route, from raw materials through consumptions, along which products travel (Cox, 1998). In the retail clothing business, the distribution channel is directly related with company's performance.

- ❖ Pep, Southern Africa's best known chain of retail stores, offers a variety of durable and up-to-date family clothing, footwear, textiles, household goods and cellular products to Africans from all walks of life with a particular focus on the very poor. There are over a thousand Pep stores throughout South Africa, Namibia, Lesotho, Botswana, Swaziland, Malawi, Mozambique, Zambia and Ghana. Pep expanded quickly throughout South Africa. Its combination of no frills, solid value goods combined with savvy branding kept Pep almost synonymous with poor but proud marketing (Irwin,2002).
- ❖ Foschini division comprising Foschini, Fashion Express and Donna Claire grew sales by 12.2% for year 2003, with the growth driven by our new format stores, which grew sales in excess of 20%. During the year 3 significant new stores were opened: Gateway, a regional shopping center outside Durban; Promenade, a new shopping center in Mitchell's Plain, and Midlands Mall, a new center in Pietermaritzburg. These new stores are consistent with the brand's location strategy of opening large stores in major shopping centers and all three are trading well above viability. A further 13 stores were enlarged or converted to our new Foschini format during the course of the year (Bowley, 2004 : 7).
- ❖ Edcon is the leading specialty fashion retailer in Southern Africa. The Edcon group owns 9 retail brands, trading in over 660 store locations throughout

**(5). Inventory control and supply chain management**

To achieve the effective supply chain management, an important part is focused on responding to the uncertainty. As discussed in the previous section on the problems and ineffective phenomenon of the supply chain management, uncertainty propagates through a supply chain network. With the proper tools, understanding and improvement can come from the following three steps:

- ***Benchmarking current performance.*** It is essential that the managers of a particular inventory network know just what performance is possible, given the existing set of operating characteristics (order review periods, forecast accuracy, etc.). Many of the potential savings come simply from the “tuning” progress of adjusting an existing system for better performance. Possible metrics include inventory investment and order fill rate, among others.
- ***Controlling uncertainty.*** A company can make great strides by understanding the relative impact of different sources of uncertainty in the system and by then working to reduce (or avoid) the impact they have. In the clothing retail business, it is important to measure the indirect effect of uncertainty on downstream or upstream nodes in the supply chain.
- ***Planning changes.*** In addition to adjusting the parameters that describe an existing network, it is possible to study in advance the benefits (or costs) of sweeping changes to the inventory network. New policies and practices might lead to great reductions in cost and/or improved performance.

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An important part with uncertainty is inventory control in the clothing retail business. Inventory is insurance on protecting against life in an uncertain world. To meet our objectives for customer service, we keep a little extra material around (in what we call “safety stocks”) so that service won’t be adversely affected when something in the upstream process goes wrong. Understanding the impact of variability in the system is the goal of modern inventory control theory (Davis,1993: 38).

In fact, in the clothing retail business, there are three distinct sources of uncertainty that plague supply chains: suppliers, distribution, and customers. To understand fully the impact on customer service and to be able to improve performance, it is essential that each of these be measured and addressed.

The first source of variability that leads to holding safety stocks is supplier performance. In the clothing industry, the suppliers can be local factory, self-manufactured, wholesalers and self-imported. Wholesales are the quickest way to get stocks but limited quantity. All the other suppliers need lead times and cause uncertainties such as the machine broke down, late transportation and shipment. Effective supply chain is required variety suppliers management. Each supplier’s on-time performance, average lateness when late, and degree of inconsistency should be considered and maintained. The customer demand and product quality is also the important factors to be considered for the supplier performance on the stock requirement.

The second source of variability comes in the distribution process itself. For the retail business, the distribution channel focused on the retail shops. The chain store is always the best form of distribution for the retail business. The market, season change, probability and service are all related with the inventory control. The reliability of the distribution process is the determinant of downstream customer service and the inventory

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investment to achieve that service.

Customer demand marks the third and final major source of uncertainty in the supply chain. Depending on the distribution channel in the supply chain, this may reflect irregular purchases in the retail clothing business. The customer's favorite and demand is directly affect on the market need and stock control and lead to the direction of the fashion. The quick and correct feedback from the customer is the important information to eliminate the stuck stocks and quick respond to meet customer demand.

To be effective supply chain management in the retail clothing business, supplier management, distribution management and customer demand as the important sources of uncertainty should be very closely linked and managed for the inventory control. To include the uncertainty is an effective way for the supply chain management in the clothing retail business.

### **3.3. MANAGING THE SUPPLY CHAIN AS A NETWORK**

#### **3.3.1. The new organizational paradigm for the effective supply chain management.**

Whilst there can be no doubting that the traditional organizational model has served us well in the past, there are now serious questions to be asked about its appropriateness for the changed conditions that confront us today. Of the many changes that have taken place in the marketing environment, perhaps the biggest is the focus upon "speed". Because of shortening product life cycles, time to market becomes ever more critical. In almost every market today, organizations seek to reduce their inventories and hence a critical requirement of a supplier that they are capable of rapid response. It requires a

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transformation that goes beyond re-drawing the organization chart and entails a cultural change that must be driven from the top (Christopher, 2004: 259).

- ❖ ***From functions to processes.*** Conventionally, businesses have organized around functions such as production, marketing, sales and distribution. The problem with this approach is that it is inwardly focused and concentrates primarily upon the use of resources rather than upon the creation of outputs. The outputs of any business can only be measured in terms of customer satisfaction achieved at a profit. In the horizontal organization the emphasis is upon the management of processes. These processes, by definition, are cross-functional. The justification for this radically different view of the business is that these processes are in effect ‘capabilities’ and it is through capabilities that the organization competes. In other words the effectiveness of the new product development process, the order fulfillment process and so on, determines the extent to which the business will succeed in the marketplace.
- ❖ ***From profit to performance.*** Long term and sustained profit has to be the goal of any commercial organization, ratios, capacity utilization, production efficiencies – these are the currency by which the conventional business is measured and hence controlled. Hence there is a saying that ‘what gets measured, gets managed’, implying that it is through the choice of performance measurement that behavior is determined. The logic of this viewpoint is that performance drives profitability. Therefore, if we get the right performance then profit will follow. Many of these new performance indicators will be non-financial. That is, they will focus management’s attention upon such things as customer satisfaction, flexibility and

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employee commitment.

- ❖ ***From products to customers.*** Even though the marketing concept has gained widespread acceptance across industry, there is still an underlying tendency to manage products rather than customers. Because customer satisfaction has to be the ultimate objective of any commercial organization it is imperative that the management structures and the measurement systems also mirror this. In organizational terms the requirement is to create a means whereby markets, channels and customers can be managed and appropriate accounting and control procedures can be implemented. In marketing terms, this transformation will require greater emphasis to be placed on 'customer value' and not just 'brand value'.
- ❖ ***From inventory to information.*** The conventional solution to the problem of uncertainty has been to make a forecast. However, the inaccuracy of forecasts has led many to deliver that they are only right by chance and that it is self-defeating to rely on a forecast since, by definition, the degree of error embodied in it will directly influence the need for stock. Instead, if information on actual customer usage of a product could be linked directly into the logistics system, then the need for the forecast could be much reduced.
- ❖ ***From transactions to relationships.*** One of the primary goals of many companies is market share. However it can sometimes be the case that a blind pursuit of market share will emphasize more the 'winning' of customers than the 'keeping' of them. The longer customers stay with the business, the more profitable they become. The trend towards customers seeking to reduce their supplier base and to move towards 'single sourcing' is gathering speed. The benefit of such an

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approach includes: improved quality, innovation sharing, reduced costs, integrated scheduling of production and deliveries. Underlying all of this is the idea that buyer-supplier relationships should be based upon partnership.

### 3.3.2. Managing the supply chain through logistics and integration

Logistical activities include locating facilities, transporting materials, storing inventory, communicating, and the handling associated with these. These activities have been integrated over the past 50 years and are an essential function of supply chain management. To achieve the highest level of service at the lowest possible cost, it is necessary for managers to examine the entire logistics system and not just one isolated facility or activity such as transportation. The logistics system is concerned not only with the physical placement of the facilities, but also with the levels of inventory and the flow of material through those facilities (Fredendall and Hill, 2001: 209).

Logistics management is the means whereby the needs of customers are satisfied through the coordination of the materials and information flows that extend from the marketplace, through the firm and its operations and beyond that to suppliers (Christopher, 2004: 13).

Figure 5 illustrates the total systems concepts.

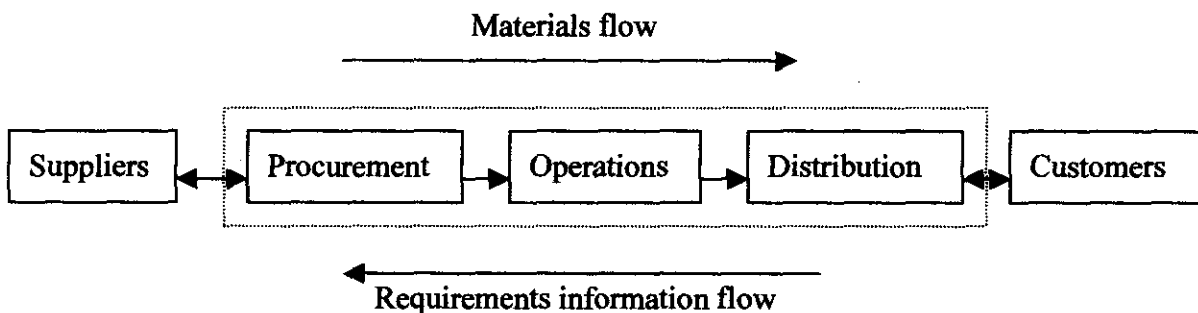


Figure 5: Logistics management process

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To compete and survive in the competitive markets today requires a logistics – oriented organization. There has to be nothing less than a shift from a functional focus to a process focus. Such a change entails a regrouping within the organization so that the key tasks become the management of cross-functional workflows.

Supply chain integration implies process integration, both upstream and downstream. Not just integration with the organization but integration upstream with suppliers and downstream with distributors and customers. By process integration means collaborative working between buyers and suppliers, joint product development, common systems and shared information.

The supply chain network is a collaborative environment where all members are involved in defining the processes and contributing to the value of the finished product. Dean Strausl (2001) provided four stages to the evolution of such a supply chain network:

***Stage 1: Supply management.*** The most basic stage is the supplier management. Communications are transactional and include quoting, purchase orders, and releases.

***Stage 2: Supply chain management.*** This stage is characterized by an increased scope and includes tier-two suppliers and beyond.

***Stage 3: Supply chain integration.*** Includes programs that benefit all members of the chain. It elevates supply to collaborative involvement among the members, including strategic planning and risk sharing.

***Stage 4: Demand-supply network collaboration.*** Cooperative interaction and proactive behavior based on critical information that flows freely and simultaneously throughout the supply network. Moving beyond supply chain management requires

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collaboration, and collaboration requires shared plans and trust. Collaboration tends to generate self-sustained improvement.

### **3.3.3. Managing the supply chain through information technology.**

Supply chain management is driven by the customer. It requires communication to all participants in the supply chain of the customer's needs and wants as well as how well these needs and wants are being met. To facilitate managing the linkages in the supply chain, many types of software tools have been developed. Installing and using these tools is not the goal of the firm; the goal is to improve management of the supply chain. The information technology is an enabling technology that allows managers to do their job better because they have information that is more complete and more accurate than they would otherwise have (Fredendall and Hill, 2001: 215).

Leading organizations have long recognized that the key to success in supply chain management is the information system. However, there is a dimension to information that enables supply and demand to be matched in multiple markets, often with tailored products, in ever-shorter time frames. The extension of the information system beyond the classical dimensions of simple planning and control enables time and space to be collapsed through the ability to link the customer directly to the supplier and for the supplier to react, sometimes in real-time, to changes in the market (Christopher, 2004: 271).

The Internet has perhaps provided one of the biggest breakthroughs of the late twentieth century when its potential impact upon supply chain management is considered. The Internet provides a perfect vehicle for the establishment of the virtual supply chain. not

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only does it enable vast global markets to be accessed at minimal cost and allow customers to reduce dramatically search time and transaction costs but it also enables different organizations in a supply chain to share information with each other in a highly cost-effective way (Christopher,2004: 272).

The practical examples can be identified from the real world such as Foschini, Edcon, Sunrising etc.

Foschinidata is responsible for the information technology (IT) function of the entire group, with an objective of adding value by improving operational efficiencies and supporting future growth strategies. Information technology is today integral to business operations and Foschinidata plays a decisive role in ensuring that all systems throughout the group work efficiently, as well as providing the necessary information technology facilities to support the expansion of all of the new business ventures. Efficiencies have been achieved during the period through better vendor and outsource partner management, consolidation and standardization of IT technologies and applications with the group and a focus on the total cost of each IT initiative (Curry, 2004: 2).

Edcon selected Retek's Merchandising, Supply Chain Management and Logistics solutions to drive improvements in these areas, with scalable technology to integrate with its existing Oracle applications. By standardizing and centralizing its business operations across all chains, Edcon now has a single set of integrated systems to support the entire retail group. Major benefits achieved by Edcon (ANON: 2004):

- Scalable IT backbone, supporting nearly 700 stores and five chains;
- Improved data integrity;
- Enhanced gross profit information;
- Superior price management;

- 
- Streamlined distribution center operations;
  - Supply chain lead time reduced by several days;
  - Strategic IT platform for the future.

Sunrising Company is a small chain store established in year 1998. For the expansion need and the limitation of the human resources, the company selected point-of-sale software and Internet to facilitate the development. Major benefits achieved by Sunrising Company (Yang, 2004: interview):

- Total inventory reduced 30% than the same time of previous year;
- The turnover increased 25% than previous year;
- The turnover on each display shelf improved because of the stuck stocks have been cleared in time;
- The ordering system becomes quick and cost-effective;
- The company expected to be expanded next year.

In order to make effective supply chain management, information and communication technologies are considered to be the ideal solution for solving the problems related to the application of the supply chain management strategies: IT can improve contracts all along the chain (suppliers of raw materials, other suppliers, manufacturer, logistics, wholesalers, retailers and the end customers); by accelerating the communication processes, should produce competitive advantages, such as improving the capability of the company to satisfy the variations in commercial demand, increasing its innovation capabilities, boosting its competitiveness as a whole and, finally, giving a better customer service and, consequently, increasing the number of satisfied customers. So that to achieve the supply chain network (Fulantelli et al., 2002: 514).

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### **3.4. SUMMARY.**

In today's clothing retail industry, as many companies focus on their core competencies and outsource the rest, the ability to compete lies in the efficiency of complete supply chains, not individual companies. The market changes require more product variety, which generates demand uncertainty and supplier variability.

A typical sample of effective supply chain management – The Edcon Group is discussed. It provides a practical format for the effective supply chain management in the retail clothing business in South Africa.

In the retail clothing business, there are some problems and ineffective phenomenon involved in supply chain management, which are: too narrow defined on supply chain management; uncertainty propagates through a supply chain network; and the confusion between supply chain and value chain. To achieve effective supply chain management, it is important to find out these problems and understand the real meaning of the supply chain.

An effective supply chain model is provided for the clothing retail industry. The effective supply chain management is a network of production under the economic and market environment which processing with the characteristics as purchasing, distribution, customer, and demand to purchase again. Each part of the operation in the model provides the positive effects to the others under the whole supply chain management to avoid the uncertainty and improve the competitive advantage.

Responding to the uncertainty is very important for the inventory control and whole supply chain. In the clothing industry, there are three distinct sources of uncertainty that

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plague supply chains: suppliers, distribution, and customers. To understand fully the impact, it is essential for the supply chain management.

The new organizational paradigm from the effective supply chain management can be concluded as five transformations: from functions to processes; from profit to performance; from products to customers; from inventory to information; and from transactions to relationships.

The supply chain network is a collaborative environment where all members are involved in defining the processes and contributing to the value of the finished product. In the clothing retail business, managing the supply chain as a network must be based on the logistic management and process integration.

Information technology can be used to facilitate the company to achieve effective supply chain management. It has been recognized by some companies already, the empirical research on Foschini, Edcon and Sunrising Company confirmed the functions of IT in the retail clothing business.

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## **CHAPTER 4**

### **EMPIRICAL STUDY**

#### **4.1. INTRODUCTION.**

An empirical research is undertaken to determine the unique circumstances surrounding the object of the study. The goal of this empirical research is to achieve the objectives for this study by accurate conclusions and provide the meaningful recommendations to link the theory and reality.

In order to confirm and further enhance and substantiate the literature findings discussed up to now, an opinion survey was conducted consisting of five sections (See Appendix A for survey questionnaire).

#### **4.2. RESEARCH QUESTIONS.**

Based on the concerns of the supply chain management activities and characteristics of retail clothing business, the following questions are presented:

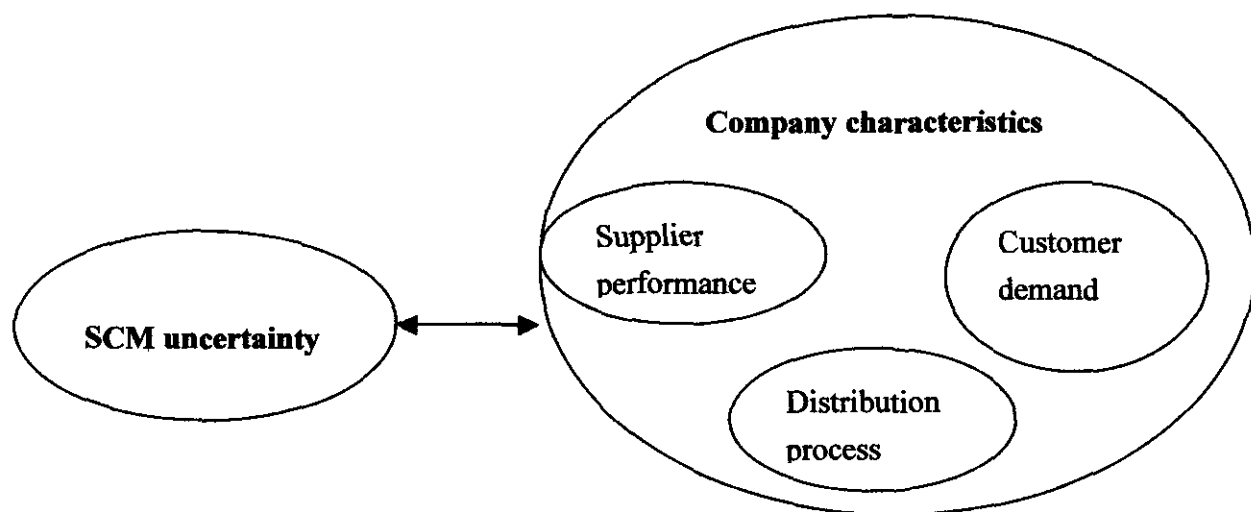
- Is supply chain management recognized and fully understood by the retail clothing business?
- Is supply chain management important for the operation and expansion in the retail clothing business?

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- Is supply chain management imperative in the highly competitive environment?
  - Does supply chain management effect on the company performance?
  - How do three distinct sources of uncertainty plague the supply chains?
  - What challenges did retail-clothing businesses face in the supply chain management?

A supplement survey question – basic statistic information of your company is provided for the further analysis of the survey results.

### 4.3. QUESTIONNAIRE DESIGN.

Respondents were assessed for their level of agreement with part A to E supply chain management statements on a Likert Scale (five-point scale) with endpoints of strongly disagree (1) and strongly agree (5). The Part A to E statements designed and characterized the supply chain management activities into three main sources of uncertainties: supplier performance, distribution process and customer demand.



**Figure 6:Supply Chain Uncertainty and company characteristics.**

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- ***Characteristics of respondent.*** The separate questions -- Basic statistic information of your company were asked to obtain information to divide respondents into different groups for the further analysis on the survey results (Refer to Appendix A). The required information includes size of the company, product style and form of distribution channel.
  
  - ***Supply chain management recognition.*** Three questions and two statements in part A have been provided to evaluate the degree of the respondents' recognition and understanding at the supply chain management. Basic statistic information was used to divide respondents into two groups according to the size of the company, 'small to medium' and 'medium to large'. The separate analysis will base on these two different groups.
  
  - ***Supply chain imperative (the importance of supply chain management).*** Five statements in part B are designed to determine the importance of supply chain management from the respondents' practical experiences and knowledge. Through the basic statistic information, the respondents are divided into two groups based on the distribution channel, single shop and chain store. To have separate analysis on the two different distribution channel, because of:
    - ***Different way of management.*** Single shop's management is based on one shop's operation and market and production need; but chain stores have to consider on different market and customer needs.

- 
- *Different level of communication.* Chain stores required more communication for the flow of the information than single shop.
  - *Different supply chain.* Normally, chain stores can achieve higher turnover than single shop, more products flow in the operation. It is different on the procedure of purchase, inventory control and sale.
- 
- ***Supply chain management and performance.*** The statements in part C are used to determine whether effective supply chain management can improve the performance and the degree of the relationship between supply chain management and performance.
  - ***Elements of uncertainty involved supply chains.*** Inventory control is an important process and function of the retail business management. Part D is divided into three sub-sections: supplier performance, distribution channel and customer demand. The statements are used to determine whether each uncertainty source plagues the inventory control and the degree that the uncertainty needs to be managed. Due to the fashion level of the company, the respondents are divided into two groups, namely those who focused on basic product and those who focused on fashion product.
  - ***Supply chain challenges faced by retail clothing business.*** Respondents were asked to evaluate the existence and effect of certain challenges in the supply chain. Four statements and questions are included in part E. The result would contribute on determining the importance of the supply chain management.
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## 4.4. ANALYSIS OF SURVEY RESULTS.

### 4.4.1. Statistical information on the respondent details.

<i>Size of the company</i>	No. of company	Frequency
Small to medium size	12	36.40%
Medium to large size	21	63.60%
Total	33	100%

<i>Product style</i>	No. of company	Frequency
Fasion product focused	27	81.82%
Basic product focused	4	12.12%
Unknow	2	6.06%
Total	33	100%

<i>Distribution channel</i>	No. of company	Frequency
Single shop	7	21.20%
Chain stores	26	78.80%
Total	33	100%

**Table 2: Survey results on the respondent details.**

Table 2 shows an overview of the respondent details. 63.6% respondents belong to medium to large size. Most of the respondents (take 81.82%) are fashion product focused company, which means high fashion level company. And most of the respondents (take 78.80%) form as chain stores. From the information, I have found that all of medium to large size company (100%) form as chain stores.

### 4.4.2. Supply chain management recognition (Part A).

Results of questions 1 to 5 in Part A

	strongly disagree(1)		disagree(2)		neutral(3)		agree(4)		strongly agree(5)	
	Count	Freque.	Cnt	Freq.	Cnt	Freq.	Cnt.	Freq.	Cnt.	Freq.
Question 1			5	15.2%	4	12.1%	17	51.5%	7	21.2%
Question 2			6	18.2%	8	24.2%	13	39.4%	6	18.2%
Question 3			7	21.2%	3	9.1%	17	51.5%	6	18.2%
Question 4					3	9.1%	23	69.7%	7	21.2%
Question 5							30	90.9%	3	9.1%
overall frequency				10.9%		10.9%		60.6%		17.6%

**Table 3: Statistics of Supply Chain Management Recognition (overall)**

With regard to the survey of Part A on the questionnaire, the results listed in Table 3 can interpret the following statements and establish the linkage with the literature study in the previous chapters.

- 51.5% (agree) and 21.2% (strongly agree) of respondents agree with that supply chain management are mentioned and recognized by the company; the rest 27.3% of respondents didn't recognize the supply chain management in the company.
- 18.2% (disagree) and 24.2% (not sure) of respondents misunderstand between supply chain management and value chain management. It demonstrates the point in the literature study, namely *the confusion between supply chain and value chain (Refer to Section 3.2.1.)*;
- 51.5% (agree) and 18.2% (strong agree) of respondents realize the difference between supply chain management and supplier management; 21.2% (disagree) and 9.1% (not sure) of respondents can't separate supply chain management and supplier management. The survey results demonstrate the view in the literature study, namely *too narrow defined on supply chain management (Refer to Section*

3.2.1.);

- There is no negative result on the relationship between supply chain management and retail clothing business. It proves the importance of the supply chain management in the retail clothing business (Refer to the literature study Section 2.3);
- All respondents agree with the definition of supply chain management. Supply chain management is the network of organizations 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 ultimate consumer (Refer to the literature study Section 2.2.).

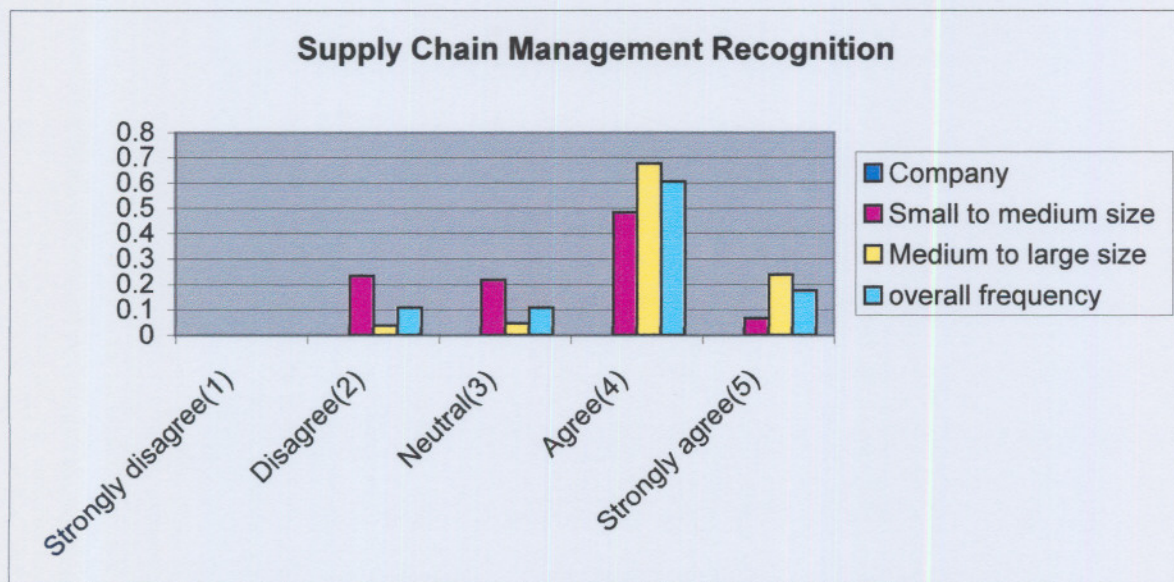
Results of questions 1 to 5 in Part A

Company	Strongly disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly agree(5)	Total
	Frequency	Frequency	Frequency	Frequency	Frequency	
Small to medium size		23.33%	21.67%	48.33%	6.67%	100%
Medium to large size		3.81%	4.76%	67.62%	23.81%	100%
overall frequency		10.90%	10.90%	60.6%	17.6%	100%

**Table 4: Statistics of Supply Chain Management Recognition (by two company sizes)**

From statistics results in Table 3, most of the companies taking overall frequency of 78.2% (60.6%+17.6%) have recognized the supply chain management. However, there is still some misunderstanding and confusion involved some companies.

From statistics results in Table 4, it is easily found out that medium to large size companies have recognized the supply chain management much more than the small to medium size company. A clearer vision can be referred to Figure 7 as following.



**Figure 7: Comparable chart for supply chain management recognition by size of the company.**

Figure 7 provides a clear view on the comparison on the supply chain management recognition by different size companies.

**4.4.3. Supply chain imperative (the importance of supply chain management) (Part B).**

Results of questions 1 to 5 in Part B

	Strongly disagree(1)		Disagree(2)		Neutral(3)		Agree(4)		Strongly agree(5)	
	count	Freq.	cnt	Freq.	Cnt	Freq.	Cnt.	Freq.	Cnt.	Freq.
	Question 1			3	9.1%	5	15.2%	10	30.3%	15
Question 2			3	9.1%	4	12.1%	9	27.3%	17	51.5%
Question 3			3	27.3%	7	21.2%	18	54.5%	5	15.2%
Question 4					8	24.2%	18	54.5%	7	21.2%
Question 5							30	90.9%	3	9.1%
Overall frequency				5.5%		14.5%		51.5%		28.5%

**Table 5: Statistics Results On Supply Chain Imperative**

Table 5 lists the result on the degree of the companies to extend of supply chain imperative. The result shows that most of companies have realized the importance of the companies. However, there are still some different ideas existed in a small ratio.

With regard to the survey of Part B of the questionnaire, the following statements can be interpreted. The survey results directly demonstrate and link with the literature study in Chapter 2.

- 30.3% (agree) and 45.5% (strongly agree) of respondents agree that there is a need to implement supply chain management;
- 27.3% (agree) and 51.5% (strongly agree) of respondents agree that supply chain management will improve company's competitive advantage;
- 54.5% (agree) and 15.2% (strongly agree) of respondents realize that new rules of competition become to supply chain management;
- No negative results occurred with the statement states the supply chain in the retail clothing business extends to various levels of company-supplier relationship;
- All respondents agree that effective supply chain will lead to long-term performance improvement.

Results of questions 1 to 5 in Part B

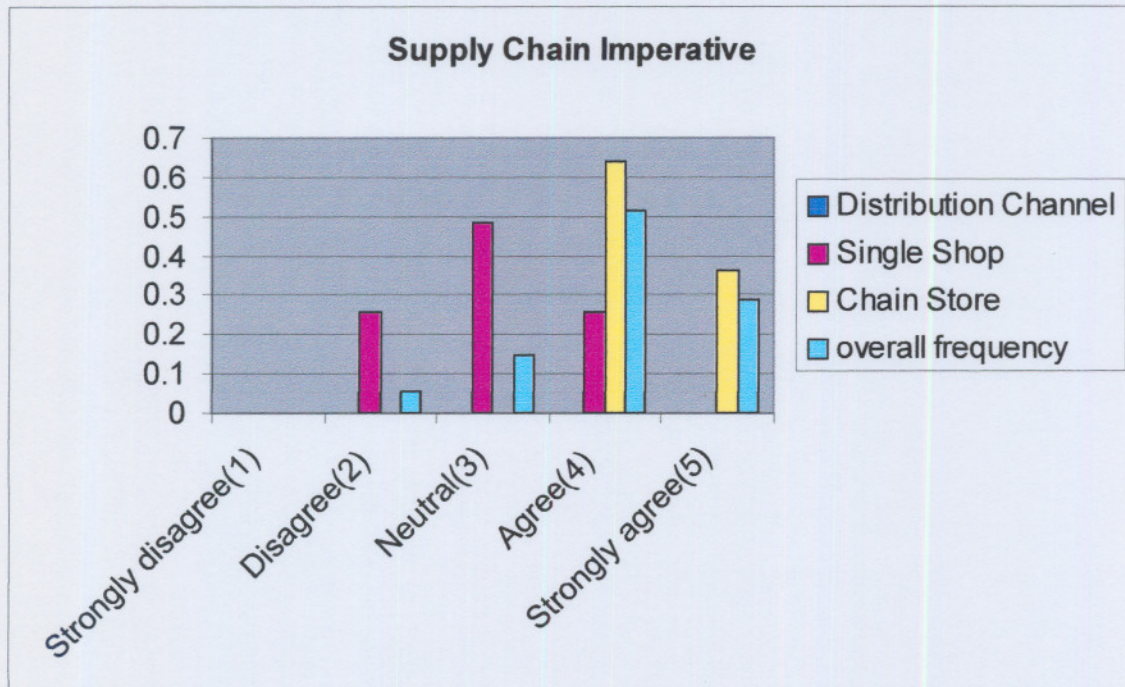
Distribution Channel	Strongly disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly agree(5)	Total
	Frequency	Frequency	Frequency	Frequency	Frequency	
Single Shop		25.71%	48.58%	25.71%		100%
Chain Store				63.85%	36.15%	100%
Overall frequency		5.50%	14.50%	51.50%	28.50%	100%

**Table 6: Statistic Results Of Supply Chain Imperative (by two kinds of distribution channel)**

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Table 6 lists the different reactions of two kinds of distribution. The result shows that the company with chain stores feels that effective supply chain management could have a great effect than the single shop. According to the overall statistic results listed in Table 6, the survey results can be interpreted and construed as following.

- Only 25.71% of respondents in the single shop group realized the importance and effects of the supply chain management. Comparatively, all respondents in the chain stores group agree with the importance and the effects of supply chain management in the retail clothing business;
- The reasons for the different realization by the different groups namely single shop and chain stores can be analyzed and explained from following aspects:
  - *Characteristics of two groups.* The different characteristics of two groups can be found from the definitions of single shop and chain store (Refer to Section 1.6).
  - *Different operation process.* Comparing with chain store, single shop has stable and limited market; low turnover; slow on the stock flow. Supply chain management doesn't play an important role for the operation. It is also the reason why single shop is not expanded and developed.
  - *Different level of communication.* Comparing with chain stores, there is not much communication required in the single shop.



**Figure 8: Comparable chart for supply chain imperative by two kinds of distribution channel.**

Figure 8 provides a comparable chart for supply chain imperative by two kinds of distribution channel.

**4.4.4. Supply chain management and performance.**

Results of questions 1 to 5 in Part C

	strongly disagree(1)		disagree(2)		neutral(3)		agree(4)		strongly agree(5)	
	count	Freque.	cnt	Freq.	Cnt	Freq.	Cnt.	Freq.	Cnt.	Freq.
	Question 1			4	12.1%	8	24.2%	17	51.6%	4
Question 2			6	18.2%	8	24.2%	15	45.5%	4	12.1%
Question 3			3	9.1%	3	9.1%	17	51.5%	10	30.3%
Question 4			3	9.1%	3	9.1%	24	72.7%	3	9.1%
Question 5							33	100.0%		
overall frequency				9.7%		13.3%		64.2%		12.8%

**Table 7: Statistics Results On Supply Chain Management and Performance**

Calculation on Question 1 to 5 in Part C

Variable	Mean	Min	Max	Standard Deviation
Question 1	3.64	2	5	0.84
Question 2	3.52	2	5	0.93
Question 3	4.03	2	5	0.87
Question 4	3.82	2	5	0.72
Question 5	4	4	4	0

**Table 8: Mean and standard deviation on Supply Chain Management and Performance**

Table 7 listed the results on supply chain management and performance. From the results of the overall frequency, 77% (64.2%+12.8%) of companies realized that there is relationship between supply chain management and company performance. The survey questionnaire links with the literature study in chapter 2 and chapter 3 (Refer to Section 2.3 and 3.2). And the survey results demonstrate the importance and effects of the

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effective supply chain management.

- 51.6% (agree) and 12.1% (strongly agree) of respondents agree that effective supply chain management is related the operation performance;
- 45.5% (agree) and 12.1% (strongly agree) of respondents agree that supply chain management can speed on the fashion of the product to follow the market change;
- 51.5% (agree) and 30.3% (strongly agree) of respondents agree that supplier management can improve the delivery performance and cost-effective;
- A total 81.8% of respondents agree that effective supply chain management can reduce the inventory and speed the inventory turnover ratio;
- All respondents agree that bringing right productions in the right season can attract more customers and improve customer satisfaction.

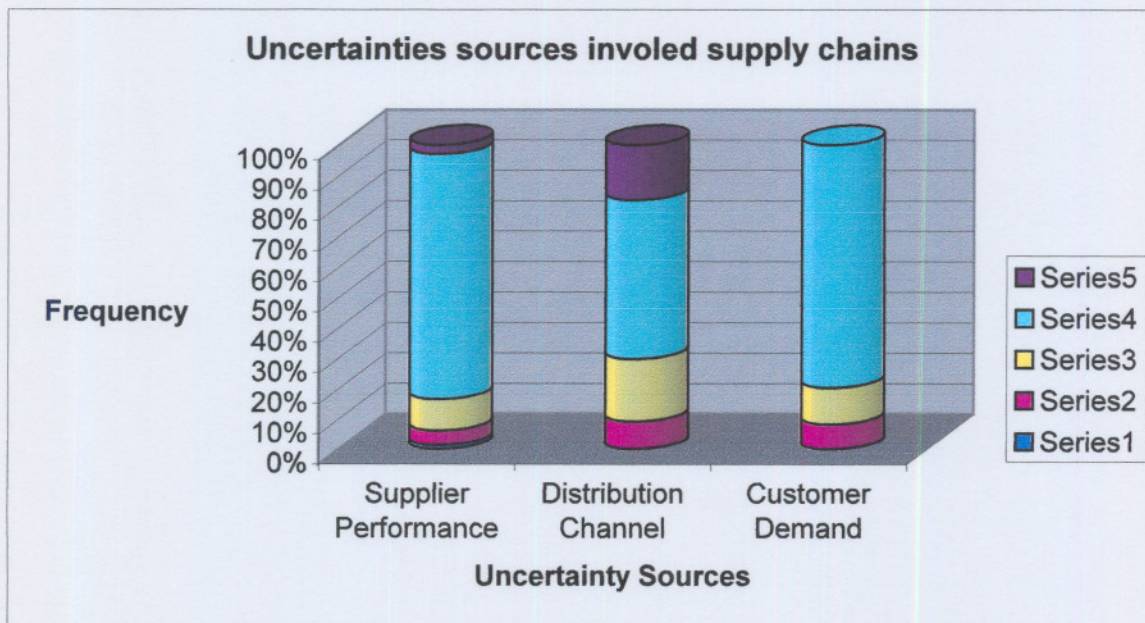
Table 8 calculated the mean and standard deviation on all questions in Part C. All means are close to agree with the statements. The small standard deviation shows that most companies realize the close relationship between supply chain management and performance.

#### **4.4.5. Uncertainty sources involved supply chains (Part D).**

Results of Questions in Part D

Uncertainty Sources	Strongly disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly agree(5)	Total
	Frequency	Frequency	Frequency	Frequency	Frequency	
Supplier Performance	1.21%	4.85%	10.30%	80.61%	3.03%	100%
Distribution Channel		9.09%	20.45%	52.27%	18.18%	100%
Customer Demand		8.08%	12.12%	79.80%		100%
Overall Frequency	0.51%	7.07%	14.14%	70.96%	7.32%	100%

**Table 9: Overall frequency on Uncertainty sources involved Supply Chains.**



**Figure 9: Level of degree of three uncertainty sources on supply chain management.**

Table 9 provided the statistic results (frequency of agreement level) of three uncertainty sources namely supplier performance, distribution channel and customer demand

involved supply chains. According to the overall frequency, most of companies agree with the uncertainty sources influencing on the inventory control.

Figure 9 gives a clear vision on each of the uncertainty sources involved supply chains.

Results of questions in Part D

Uncertainty Sources	Strongly disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly agree(5)	Total
	Frequency	Frequency	Frequency	Frequency	Frequency	
<b>Supplier Performance</b>						
Fashion product focused		1.48%	8.15%	86.67%	3.70%	100%
Basic product focused	10.00%	30.00%	20.00%	40.00%		100%
<b>Distribution Channel</b>						
Fashion product focused		6.25%	25.00%	68.75%		100%
Basic product focused		8.33%	19.44%	51.85%	20.38%	100%
<b>Customer Demand</b>						
Fashion product focused		33.33%	8.33%	58.34%		100%
Basic product focused		2.47%	11.11%	86.42%		100%

**Table 10: Statistic results on uncertainty sources involved supply chains (Based on different products focused company).**

Table 10 provides a detailed statistic results with regard to the different degree of the uncertainties from the special perspective of production style of the company.

The survey is directly linked with the literature study in Section 3.2.1. The survey results demonstrate that uncertainty propagates through a supply chain network in the retail clothing business.

#### 4.4.6. Supply chain challenges faced to retail clothing business (Part E).

Results of questions in Part E

	strongly disagree(1)		disagree(2)		neutral(3)		agree(4)		strongly agree(5)	
	count	Freque.	cnt	Freq.	Cnt	Freq.	Cnt.	Freq.	Cnt.	Freq.
	Question 1							23	69.7%	10
Question 2							15	45.5%	18	54.5%
Question 3							17	51.5%	16	48.5%
Question 4					3	9.1%	24	72.7%	6	18.2%
Overall frequency						2.3%		59.8%		37.9%

**Table 11: Statistic result on supply chain challenges**

The results in Table 11 revealed that almost all companies have realized the supply chain challenges faced to retail business. With regard to the survey results in Table 11, the following statements can be interpreted.

- All respondents felt the supply chain challenges faced the retail clothing business;
- All respondents agree that quality up and cost down forced the retailers to find new sources of manufacturing;
- All respondents agree that speed up time to market is getting more important for the fashion industry;
- There is no negative result on the statement of that to set up the supply chain network becomes more important for the competition.

The survey results in Part E fully demonstrate the literature study in Section 2.4.2 state the supply chain challenges facing the clothing retail business. Again it demonstrates the importance of the supply chain management in the retail clothing business.

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#### **4.5. SUMMARY.**

The empirical study provided a clearer vision on the supply chain management from the practical aspect. There is a close linkage between empirical study and literature study. The statistical results fully demonstrated the correctness of the statements interpreted in the literature study. The survey greatly confirmed importance and significant effects of supply chain management in the retail clothing business.

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## **CHAPTER 5**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1. INTRODUCTION.**

Statistical information combined with practices makes thorough supply chain analysis possible. The result of the empirical study is an important supplement and demonstration for the literature study. From the statistical results gathered in the empirical study, it will be the aim in this chapter to come to meaningful conclusions. Considering these conclusions, certain recommendations will be made in respect of how to achieve effective supply chain management.

#### **5.2. CONCLUSIONS.**

The following conclusions are derived from the survey of the questionnaire on the supply chain management in the empirical study.

- Most of companies have recognized and noticed the supply chain management;
  - Medium to large size companies have more attention on the supply chain management;
  - There is some misunderstanding and confusion involved the supply

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chain management in the retail clothing business, especially in the small to medium size companies.

- Survey results show that there is a strong awareness of the importance of an effective management of the supply chain. However, there will be some obstacles like communication and technologies to implement effective supply chain strategies in small to medium sized companies.
- Supply chain management need to be fully understood by the company. The goal of supply chain management is to link the marketplace, the distribution network, the manufacturing process and the procurement activity in such a way that customers are serviced at higher levels and yet at a lower total cost (Christopher, 2004: 288).
- Supply chain management does not limited on value chain management and supplier management. Supply chain dynamics involve much more than finding the materials you need at a good price. Supply chain management in the retail clothing retail business is the network management on the supply chain that extends upstream through supplier (importer, manufacture and wholesaler) to bring the stocks in and downstream through seller (chain stores, distributor and other sales processes) to the final customer.
- Most of companies agree that supply chain management is important.

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Effective supply chain management is no longer an option; it is a requirement for survival.

- All companies formed as chain stores realized that supply chain is imperative.
  - Most of single shops didn't realize the importance of the supply chain management.
  - The different reaction is subject to the characteristics, size, stock turnover and communication levels between chain stores and single shop.
- 
- Most of companies realized that effective supply chain management would improve company's competitive advantage and lead to long-term performance improvement. To survive in today's competitive business climate, organizations must take a broad view of their product and / or service flow. They must consider that the opportunities for system optimization offer much greater potential to bottom-line business results than can be obtained from minor efficiency improvements that stem from the more traditional approach to local business management (Fredendall and Hill, 2001: 224).
  - Effective supply chain management is the requirement of the new rules of the competition. The need to create value delivery systems that are more responsive to fast – changing markets and that are much more consistent and reliable in the delivery of that value requires that the supply as a

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whole be focused on the achievement of these goals.

- Most of selected companies agreed that there are three uncertainties have an effect on supply chains of retail clothing business namely supplier management, distribution channel and customer demand.
- Basic product focused companies are not much more aware the uncertainty sources influencing the inventory than fashion product focused companies. The reason is subject to the production style and requirement for the speed to change. Basic product focused companies seem to be line to benefit on supply chain management. They have a low level of supply chain management activities.
- There is a close relationship between element of uncertainties and inventory control. The uncertainty is observed on a daily basis as the customer's favorite, inventory amount, delivery, feedback on the production and the re-order time.
- The new paradigms concerning supply chain management involve total integration such that each element of an entire supply chain looks through its supplier's supplier and its customer's customer.
- Most of respondents agree that communication and information technology can be utilized to collect the information from customer and

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market for the inventory control and forecasting. The essence of supply chain management is communication, allowing the ultimate consumer to become a partner in the process. As a result, not only is the product or service more likely to be delivered to the customer as it is currently desired, but also the product or service can actually change in design as the needs of the customer changes.

- Almost all companies realized that the supply chain challenges faced to retail-clothing businesses. Quality up and Cost down forced the retailers to find new sources of manufacturing. Speed up time to market is getting more important for the fashion industry. To setup the supply chain network becomes more important for the competition.

The empirical study demonstrates and supports most of literature study on the supply chain management. The successful samples like the Edcon Group, Foschini, Sunrising etc. provide more practical experiences on the framework of effective supply chain management, especially on implementing technology on the supply chain management. Technology becomes a key enabler to accomplish the supply chain management. It allows all upstream and downstream trading partners to share everything from strategic plans to operational data through electronic linkage.

### **5.3. RECOMMENDATIONS.**

The importance of supply chain management in the retail clothing business has been

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identified without a doubt. It is also evident from this study that effective supply chain management would improve company's competitive advantage and lead to long-term performance improvement, and accuracy and reliability are enhanced by the empirical study. In addition to this, the framework of effective supply chain management becomes the essential of the study. It is necessary to provide some recommendations on how to achieve the effective supply chain management in the retail clothing business.

- ***Set up the strategy for supply chain management and get alignment from the top manager.*** There are many strategies one can adopt to manage the supply chain. Executive management focus is critical. Automation and analysis tools are often ineffective because they are not aligned to the business users, who must feel comfortable with the management and open to learning and thinking in order for a vision to become a reality.
- ***Create the logistics vision.*** The purpose of the logistics vision statement is to give a clear indication of the basis whereby the business intends to build a position of advantage through closer customer relationships. The criterion for a good logistics vision statement is that it should provide the road map for how to achieve the goals of the company.
- ***Do supply chain analysis based on the core competencies and capabilities of the company.***
- ***Establish supply chain integration not only within the company but also upstream with suppliers and downstream with distributors and customers.***

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Supply chain integration implies process integration, both upstream and downstream. By process integration we mean collaborative working between buyers and suppliers, joint product development, common systems and shared information.

- ***Manage the supply chain as a network.*** To manage in such a radically revised competitive structure clearly requires different skills and priorities to those employed in the traditional model. To achieve market leadership in the world of network competition necessitates a focus on network management as well as upon internal process (Christopher, 2004: 234).
- ***Establish communication system.*** The essence of supply chain management is communication, allowing the ultimate consumer to become a partner in the process. The close and real – time communication linkage created through the practices would help all the elements of the supply chain to meet the ever changing demands of the ultimate consumer.
- ***Manage effective supply chain through technology.*** Technology will allow all upstream and downstream trading partners to share everything from strategic plans to operational data through electronic linkages.
- ***Diminish or avoid uncertainties of the supply chain management.*** As we discussed in this study, the supply chain uncertainties in the clothing retail business focus on supplier performance, distribution channel and customer

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demand. Some actions can be used to improve supply chain performance.

Supplier performance:

- ❖ Reward good performance;
- ❖ Measure transportation performance separately;
- ❖ Subcontract inbound freight handling;
- ❖ Source locally to shorten lead times;
- ❖ Review inventory more frequently.

Distribution channel:

- ❖ Establish mutual distribution channel;
- ❖ Set up distribution logistic system;
- ❖ Use market investigation and analysis;
- ❖ Establish inter-communication system to enable information flow;

Customer demand:

- ❖ Forecast and adjust safety stocks;
- ❖ Change transportation mode;
- ❖ Implement information technology;
- ❖ Introduce improved forecasting techniques;
- ❖ Subcontract distribution operations;
- ❖ Build new customers and collect feedback.

#### **5.4. FUTURE RESEARCH OPPORTUNITIES.**

The following opportunities for future research are identified.

- In future research, the study can focus on the strategies on supply chain

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management. For example, management strategies, supplier strategies, human resources activities and financial situation.

- To benefit the retail clothing business, further research on feasible framework of supply chain management including logistics and integration need to be studied in detail and summarized from the successful samples.
- For the requirement of the new rules of competition, information technology plays more and more important role for the supply chain management. An empirical study could be performed for researching and selecting the effective IT system for all sizes of the retail business including small to medium sized and medium to large sized.
- A similar empirical study could be performed for global retail clothing business. The advanced supply chain management experiences could be found to improve the management in South Africa.

## **5.5. SUMMARY.**

The empirical study examined and motivated the statements in the literature study. Survey results proved the importance of the supply chain management in the retail clothing business. Effective supply chain management is no longer an option; it is a requirement for survival. The empirical study demonstrated that effective supply chain management would improve the competitive advantage and lead to long-term performance improvement.

There are three uncertainties have an effect on supply chains of retail clothing business

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namely supplier management, distribution channel and customer demand. Challenges and new rules of competition faced to retail clothing business confirmed that supply chain imperative.

Companies within the supply chain must reach new levels of communication and cooperation. Successful companies provided a model and framework for effective supply chain management. Technology becomes a key enabler to accomplish the supply chain management. It allows all upstream and downstream trading partners to share everything from strategic plans to operational data through electronic linkage.

Some recommendations are given for how to achieve the effective supply chain management in the retail clothing business. To achieve the effective supply chain management required: top management alignment; supply chain strategies; supply chain logistics and integration; network management with IT support. To diminish and avoid supply chain uncertainties is important for the effective supply chain management.

Future research opportunities can focus on supply chain strategies, effective information technology for supply chain management, logistics and integration and global supply chain management.

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**APPENDIX A**

**DESIGN OF QUESTIONNAIRES FOR EMPIRICAL RESEARCH**

**APPENDIX A:****Supply Chain Management****In The Clothing Retail Business Questionnaire**

A	Supply Chain Management Recognition	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Was supply chain management mentioned and recognized by your company?	5	4	3	2	1
2	To what degree do you think that supply chain management is different with value chain management?	5	4	3	2	1
3	To what degree do you think that supply chain management is not same as supplier management?	5	4	3	2	1
4	There is a close relationship between supply chain management and clothing retail business.	5	4	3	2	1
5	The supply chain is the network of organizations 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 ultimate consumer.	5	4	3	2	1
B	Supply chain imperative (the importance of supply chain management)	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	There is a need to implement supply chain management	5	4	3	2	1
2	Supply chain management will improve company's competitive advantage.	5	4	3	2	1
3	New rules of competition become to supply chain management.	5	4	3	2	1
4	The supply chain in the retail clothing business extends to various levels of company-supplier relationship.	5	4	3	2	1
5	Effective supply chain will lead to long-term performance improvement	5	4	3	2	1

C	Supply Chain Management and Performance	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	To what degree is effective supply chain management related the operation performance?	5	4	3	2	1
2	Supply chain management can speed on the fashion of the product to follow the market change.	5	4	3	2	1
3	Supplier management can improve the delivery performance and cost-effect.	5	4	3	2	1
4	Effective supply chain management can reduce the inventory and speed the inventory turnover ratio.	5	4	3	2	1
5	Bring right productions in the right season can attract more customers and improve customer satisfaction.	5	4	3	2	1
D	Uncertainty Sources Involved Supply Chains.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
	<b>Supplier performance</b>					
1	The lead times for manufacturing and importing forced the company to keep more inventory.	5	4	3	2	1
2	Lead times influence the fashion level of the production and time to market.	5	4	3	2	1
3	Lead times effect on the correct of forecasting in supply chain management.	5	4	3	2	1
4	The supplier's productivity influence retail company's supply chain management.	5	4	3	2	1
5	There are some uncertainty involved for the late supply in the ordering system such as late delivery, late shipment, machine broke down and custom stop-check etc.	5	4	3	2	1
	<b>Distribution channel</b>					
1	Is your company location good for your target market?	5	4	3	2	1
2	To what degree do you think that the sales performance is related with your distribution channel?	5	4	3	2	1

3	The inventory control can be improved through customer service and sales strategy, such as promotion, membership, credit and clearance sale.	5	4	3	2	1
4	Multi-channel distribution benefits for the inventory control through inter-adjustment on the stock.	5	4	3	2	1
<b>Customer Demand</b>						
1	The correctness of the market information is important for the inventory control.	5	4	3	2	1
2	The customer feedback on the production can lead the direction of the fashion of production.	5	4	3	2	1
3	How effective is communication and information technology utilized to enable the information collected from customers and market for the inventory control and forecasting?	5	4	3	2	1
E	<b>Supply Chain Challenges Faced to Retail Clothing Business</b>	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Did you feel the supply chain challenges faced your company?	5	4	3	2	1
2	Quality up, cost down forced the retailers to find new sources of manufacturing.	5	4	3	2	1
3	Speed up time to market is getting more important for the fashion industry.	5	4	3	2	1
4	To set up the supply chain network becomes more important for the competition.	5	4	3	2	1

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**Basic statistic information of your company:**

<b>Size of your company:</b>	<i>Turnover</i>	More than 200million/year	
		Less than 200million/year	
	<i>No. of employee</i>	More than 100	
		Less than 100	
<b>Product style</b>		Basic product	
		Fashion product	
<b>Distribution channel</b>		Single shop	
		Chain stores	

Covering letter for the research questionnaire:

**Supply Chain Management  
In The Clothing Retail Business Questionnaire**

**This questionnaire is used to collect data for the empirical research I am performing as part of the mini-dissertation of my MBA studies at the Potchefstroom Business School (Potchefstroom University) in South Africa.**

The aim of this questionnaire is to determine the degree of recognition of the supply chain management by the retail clothing companies. These values will be determined for a number of retail clothing company in South Africa and it will be the gathering results concluded by the practical experiences of each of the respective companies to determine whether supply chain management is important for the competitive advantage and company performance, as well as uncertainty sources for the inventory control require the effective supply chain management to be imperative. Then, an effective supply chain management formation could be found and identified.

**Basic statistic information is used for comparable analysis on the degree of supply**

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**chain management by the size, product style and management method.**

**Please note that your company's information will be kept confidential, and in no way will it be possible to infer your company's management details from the results presented in the study. Please complete the questionnaire by ticking on the most appropriate choice in each question and finally return your answer of questionnaire through pre-paid post or e-mail to [jianling@xsinet.co.za](mailto:jianling@xsinet.co.za).**

**I thank you for your time and effort to complete this questionnaire!**