CHAPTER - II

REVIEW OF LITERATURE
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In the first part of this chapter, the SCM practices have been reviewed and theories promulgated as applicable in the organized retailing context. Next, the review of the literature concentrates on themes – theories underling buyer-supplier relationships and dimensions of supply chain performance including cooperation and decision-making uncertainty.

In the very beginning it must be made clear that the major goal of supply chain management (SCM) is to minimize non-value-adding activities and associated investment costs and operating costs, increase customer responsiveness and flexibility, and enhance performance and competitiveness of the supply chain. Additionally the companies in the highly competitive retail industry, implementing supply chain management, aim to react to the increasing uncertainty and complexity of the market environment, and advance their competitive position in the entire value chain. Though many firms limit their focus to the performance of their own organization and neglect to reduce inefficiencies and eliminate non-value activities in the supply chain to improve supply chain performance (Holmberg 2000), the future trend of market competition will be elevated from firm-to-firm competition to supply chain-to-supply chain. The management focus thus should go beyond individual firm’s performance and place emphasis on the performance of the supply chain (Lambert and Pohlen 2001; Chen and Paulraj 2004). Management should not just concentrate on optimizing its own firm’s operations; rather cooperate with other supply chain members toward deriving the greatest mutual benefits and savings (Lambert and Pohlen 2001).

2.1 SUPPLY CHAIN MANAGEMENT – THE INTEGRATION OF SYSTEMS, PROCESSES, AND PRACTICES

The term "supply chain management" first appeared in 1982. SCM is widely talked about in various journals and magazines related to manufacturing, distribution, marketing, customer management, or transportation (Ross, 1998). Around 1990, academics first described SCM from a theoretical point of view to clarify the difference from more traditional approaches such as logistics, to managing material flow and the associated information flow (Cooper et al., 1997). Cooper et al. (1997) provided a valuable review of 13 early SCM definitions: a solid argument that SCM and logistics are not identical.
The logistics evolution consists of three main stages, dating back to the 1960s. During the 1960s and 1970s, many companies focused their attention on the physical distribution or outbound logistics system (Coyle, Bardi, and Langley, 1996). "The channel discipline was primarily manufacturer push" (LaLonde and Powers, 1993). This meant that goods were pushed through the supply chain toward customers. This type of system did not consider what customer demand was, rather tried to predict what it would be and supply accordingly. As a result, large levels of inventory accumulated in the supply chain (Coyle, Bardi, and Langley, 1996). Companies attempted to manage the interrelated outbound activities, including (but not limited to) transportation, warehousing, and packaging, to ensure efficient product delivery to the final customer.

The second stage was evident during the late 1970s and 1980s. Companies realized that they could lower the cost more by combining the inbound side (materials management) with the outbound side (physical distribution) (Coyle, Bardi, and Langley, 1996). Firms broadened their logistical view to look at "efficient material flow through the entire business firm" (LaLonde and Powers, 1993). This combination evolved into what is now called the logistics system. Companies began to "view the whole process, from raw materials to finished goods, as a continuum that, managed from a systems perspective, could lead to a more efficient operations" (Coyle, Bardi, and Langley, 1996). This continuum is known as 'supply chain'. A supply chain is a network of organizations performing various processes and activities to produce value in the form of products and services for the end customer (Christopher, 1992).

Thus there is a natural need for cross functional thinking and in the beginning of the 1980s, SCM was introduced by consultants as a term for how to manage inventory across several functions in the supply chain more efficiently and effectively (Cooper and Ellram, 1993; Cooper and Lambert, 2000).

Over the years SCM has become a very popular research area in many different disciplines. In their literature review Croom et al. (2000) presented eleven different bodies of literature, all dealing with SCM:

- Purchasing and supply literature
- Logistics and transportation literature
- Marketing literature
- Organizational behaviour, industrial organization, transaction cost economics and contract view literature
- Contingency theory
- Institutional sociology
- System engineering literature
Industrial organization and transaction cost analysis (Ellram, 1990; Williamson, 1975), resource-based and resource-dependency theory (Rungtusanatham et al., 2003), competitive strategy (Porter, 1985), and social-political perspective (Stern and Reve, 1980) are some of the aspects of SCM that have been discussed in past literature.

However, in spite of the increased attention paid to SCM, the literature has not made a significant contribution to aid the practice of SCM (Cigolini et al., 2004) and to respond to environmental uncertainty on supply and demand sides of the supply chain. Due to its interdisciplinary origin and evolutionary nature, there is no generally accepted definition of SCM in literature (Feldmann and Muller, 2003).

The third stage, observed during the 1980s and 1990s, is characterized by five external factors which caused companies to further expand their outlook about logistics. These five factors are:

- consumers are more knowledgeable about products and more demanding about price and quality,
- changing channel structures and relationships resulted in trends involving the size, scope, and distribution for goods and services,
- globalization of the economy and markets caused companies to respond to increasing competitive pressures by copying some foreign business practices, including just-in-time,
- technological changes resulted in massive data processing and information systems improvements using electronic data interchange (EDI) and bar coding, and
- government policy and deregulation resulted in lower costs and higher quality transportation services (Coyle, Bardi, and Langley, 1996).

These five factors caused a new focus involving all firms in the production and distribution system to ensure that "the final customer received the right product, at the right cost, at the right time, in the right condition, and in the right quantity" (Coyle, Bardi, and Langley, 1996). This concept developed into what is referred to the supply chain or logistics pipeline and involved both information management and the physical movement of inbound raw materials and outbound finished goods. Ellram and Cooper (1990) thus defined supply chain management (SCM) as an "integrative philosophy to manage the total flow of a distribution channel from..."
supplier to the ultimate user." This includes partnerships and alliances among vendors/suppliers, manufacturers, and transportation and public warehousing companies, in addition to customers.

As many different research disciplines are involved in SCM research, its functional scope has been widened more and more (Cooper and Lambert, 2000). Studying articles published since the 1980s till now shows this development clearly. Houlihan (1985), one of the first authors writing about SCM, found that there was a need for a new approach within the area of materials management in order to avoid a sub-optimal utilization of assets. Jones and Riley (1985) claimed that "supply chain management deals with the total flow of materials from suppliers through end-users" (Jones and Riley, 1985, p. 19). Stevens (1989) extended SCM to also contain the information flow connected to the physical materials flow. Lee and Billington (1992) mentioned for the first time R&D in an inventory context and argued that the involvement of R&D could reduce inventory and distribution costs.

By the 1990s, firms recognized the necessity of collaboration with suppliers and customers in order to create superior customer value. This movement titled supply chain management or value chain management shifted a company's focus from within an enterprise to managing across firm boundaries.

The readers must understand the two perspectives of SCM here, first purchasing (supply management), and secondly the logistics (transportation, distribution, warehousing, and inventory management). According to the purchasing perspective, SCM is synonymous with supplier integration and has evolved from traditional purchasing and materials functions (Banfield, 1999; Lamming, 1993). From the logistics management perspective, SCM is synonymous with distribution, logistics, inventory management, and customer relationships (Alvarado and Kotzab, 2001; Bechtel and Jayaram, 1997; Romano and Vinelli, 2001; Rudberg and Olhager, 2003; Van Hoek, 1998). In due course, these two perspectives evolved into one single philosophy of SCM with integrated systems, processes, and practices between trading partners.

In the above context, Lummus and Vokurka (1999) added that SCM links all the departments within an organization as well as all its trading partners (viz: suppliers, customers, 3PL providers, and information systems providers). There is mutual collaboration and companies work together to make the whole supply chain competitive. Information technology is widely used to share information and generate demand forecasts. The underlying idea in SCM is that the entire process must be viewed as a single system. The core competencies of individual organizations are determined and are cashed on, to create enhanced 'competitive advantage' for the supply chain.
Bowersox and Closs (1996) argued that to be fully effective in today's competitive environment, firms must expand their integrated behavior to incorporate customers and suppliers. This extension of integrated behaviors, through external integration, is referred to by Bowersox and Closs (1996) as supply chain management.

In this context, the philosophy of SCM turns into the implementation of supply chain management: a set of activities that carries out the philosophy. This set of activities is a coordinated effort called SCM between the supply chain partners, such as suppliers, carriers, and manufacturers, to dynamically respond to the needs of the end customer (Greene, 1991). Thus SCM integrates both information flow and the flow of goods seamlessly between trading partners as an effective competitive weapon (Childhouse and Towill, 2003; Feldmann and Muller, 2003).

Council of Supply Chain Management Professionals (CSCMP) emphasizes that SCM encompasses the management of supply and demand, sourcing of raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, and distribution and delivery to the customer.

Cooper et al. (1997) referring to the integrated nature defined SCM as the management and integration of the entire set of business processes that provides products, services and information that add value for customers.

Christopher (1998), New and Payne (1995), and Smirch-Levi et al. (2000) defined supply chain management as "the integration of key business processes among a network of interdependent suppliers, manufacturers, distribution centers, and retailers in order to improve the flow of goods, services, and information from original suppliers to final customers, with the objectives of reducing system-wide costs while maintaining required service levels" (as cited in Stapleton et al., 2006, p. 108).

The Global Supply Chain Forum (GSCF) defined supply chain management as "the integration of key business processes from end user through original suppliers, that provides products, services, and information that adds value for customers and other stakeholders" (as cited in Lambert et al., 1998, p. 1).

The APICS dictionary (1995) describes SCM as – "the processes from initial raw materials to the ultimate consumption of the finished product, linking across supplier-user companies" thus integration.

SCM concerns the integrated and process-oriented approach to the design, management and control of the supply chain, with the aim of producing value for the end customer, by both improving customer service and lowering cost (Bowersox and Closs, 1996; Giannoccaro and Pontrandolfo, 2002).
Lummus and Vokurka (1999) summarized SCM as "all the activities involved in delivering a product from raw material through to the customer, including sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, delivery to the customer, and the information systems necessary to monitor all of these activities" (p. 11).

Mentzer et al. (2001) considers SCM as a systemic, strategic coordination of business functions within an organization and between organizations within the supply chain, for improving the long-term performance of individual companies and the supply chain as a whole. The emphasis of each of these definitions is on the objective of SCM to create a distinctive advantage by maximizing the total value of products and services (Stank et al., 2005). According to Li et al. (2006) the dual purpose of SCM is to improve the performance of an individual organization as well as that of the entire supply chain.

2.1.1 SCM Implementation Practices

Boddy et al. (1998) in his research reported that more than half of the respondents to their survey considered that their organizations had not been successful in implementing supply chain partnering; Spekman et al. (1998), noted that 60% of supply chain alliances tended to fail. Deloitte Consulting survey reported that only 2% of North American manufacturers ranked their supply chains as world class although 91% of them ranked SCM as important to their firm’s success (Thomas, 1999). Thus, while it is clear that SCM is important to organizations, effective management of the supply chain does not appear to have been realized. The same appears to be true of Indian scenario.

Hence the objective of this research chosen was to study the implementation of supply chain practices adopted by the organized retailers especially by supermarket and departmental stores. How the adoption of supply chain practices benefited the retailers in terms of competitive edge has been the major focus area.

Li et al. (2005, 2006) had proposed ‘SCM practices’ as a multi-dimensional construct that included both upstream and downstream activities covering the whole supply chain. The researcher here in this study extracted a set of SCM activities from literature review and case studies and analyzed the implementation of these practices amongst the selected retailers. The instrument developed and validated by Li et al. (2005) was adopted by the researcher for this study.

Donlon (1996) considered outsourcing, supplier partnership, information sharing, cycle time compression, and continuous process flow, as SCM practices. Tan
et al. (1998) used quality, purchasing, and customer relations to represent SCM practices, in their empirical study. Alvarado and Kotzab (2001) focused on inter-organizational system use, core competencies, and elimination of excess inventory through postponement, as SCM practices. Using factor analysis, Tan et al. (2002) identified: supply chain integration, information sharing, customer service management, geographic proximity, and JIT capability, as the key aspects of SCM practice. Lee (2004) in his case study based research identified five practices at the supply chain level that are a key to creating supply chain responsiveness. They are: outsourcing, strategic supplier partnerships, customer relationships, information sharing, and product modularity. Chen and Paulraj (2004) used long-term relationship, cross-functional teams, supplier base reduction, and supplier involvement as SCM activities in their studies. Min and Mentzer (2004) identified long-term relationship, information sharing, vision and goals, risk and award sharing, cooperation, process integration, and supply chain leadership underlying the activities of SCM. Li et al. (2005, 2006) identified strategic supplier partnership, customer relationship, and information sharing as key SCM practices.

Summarily, despite an ongoing discussion in research as well as in management journals for more than two decades, SCM remains to be an unclear expression. The large amount of research in the SCM area, and the fact that SCM spans over several disciplines (Tan, 2001), has led to a wide range of definitions, expressions and concepts (Larson and Halldorsson, 2004; Mentzer et al., 2001). The discussions and conclusions about SCM are seldom based upon rigorous theory (Bechtel and Jayaram, 1997) or empirical material (Lee and Whang, 2000; Stank et al., 2001) and SCM literature therefore often becomes superficial and comprehensive. In addition, empirical studies indicate that many of the expected positive effects of SCM have not been realized (Fawcett and Magnan, 2002; Moberg et al., 2003; Skjoett-Larsen, 1999, Spekman et al., 1998; Stank et al., 1999; Skjoett-Larsen et al., 2003; Småros, 2003). Hence there seems to be a gap between the ideal SCM theory and the performance in existing supply chains, i.e. SCM practices meaning companies’ planning and strategy for coordination of their supply chain, including collaboration between functions internally as well as across company borders. This study aims at studying the effect of various supply chain management (SCM) practices as adopted by the organized retailers in India in terms of their performances.

2.2 THE ORGANIZATIONAL SCOPE OF SUPPLY CHAIN MANAGEMENT

The authors seem to agree that the scope of SCM covers all companies involved “from the supplier to end customer” (Houlihan, 1985, p. 26; Jones and Riley, 1985, p. 17) or that SCM involves “the entire channel and not just a few channel
pairs” (Cooper and Ellram, 1993, p. 13). Cooper et al. (1997) argued the supply chain as “three or more organizationally distinct handlers of products” (Cooper et al., 1997, p. 67). The interpretation of the organizational scope is however closely related to the understanding of what a supply chain is? Some authors distinguish between “traditional commodity chains” and supply chains, whereas other authors do not. Cooper and Ellram (1993) and Cooper et al. (1997), who represent the first view, argue that not all companies are automatically involved in a supply chain. Cooper and Ellram (1993) identified a number of aspects that differentiated a traditional commodity chain from a supply chain (see Exhibit 2.1 below).

Exhibit 2.1 Aspects that distinguish a traditional commodity chain from a supply chain

<table>
<thead>
<tr>
<th>Element</th>
<th>Traditional</th>
<th>Supply chain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory Management Approach</td>
<td>Independent efforts</td>
<td>Joint reduction in channel inventories</td>
</tr>
<tr>
<td>Total Cost Approach</td>
<td>Minimize firm costs</td>
<td>Channel-wide cost efficiencies</td>
</tr>
<tr>
<td>Time Horizon</td>
<td>Short term</td>
<td>Long term</td>
</tr>
<tr>
<td>Amount of information sharing and monitoring</td>
<td>Limited to needs of current transaction</td>
<td>As required for planning and monitoring processes</td>
</tr>
<tr>
<td>Amount of Coordination of Multiple Levels in the Channel</td>
<td>Single contact for the transaction between channel pairs</td>
<td>Multiple contacts between levels in firms and levels of channel</td>
</tr>
<tr>
<td>Joint Planning</td>
<td>Transaction-based</td>
<td>On-going</td>
</tr>
<tr>
<td>Compatibility of Corporate Philosophies</td>
<td>Not relevant</td>
<td>Compatible at least for key relationships</td>
</tr>
<tr>
<td>Breadth of Supplier Base</td>
<td>Large to increase competition and spread risk</td>
<td>Small to increase coordination</td>
</tr>
<tr>
<td>Channel Leadership</td>
<td>Not needed</td>
<td>Needed for coordination focus</td>
</tr>
<tr>
<td>Amount of Sharing of Risks and Rewards</td>
<td>Each of its own</td>
<td>Risks and rewards shared over the long term</td>
</tr>
<tr>
<td>Speed of Operations, information and inventory flows</td>
<td>“Warehouse” orientation (storage, safety stock) interrupted by barriers to flows; localized to channel pairs</td>
<td>“DC” orientation (inventory velocity) Interconnecting flows; JIT, Quick Response across the channel</td>
</tr>
</tbody>
</table>

(Source: Cooper and Ellram, 1993, p. 16)

The second view is that all companies are always involved in a supply chain. For instance, Mentzer et al. (2001) do not demand more than the existence of a set of companies structured so that one organization (or individual) supplies another and that this organization in turn supplies another organization, to call it a supply chain. Thus, no distinction between commodity chain and supply chain is made. The reason for this approach is the opportunity to more easily be able to distinguish between a “supply chain” and “supply chain management”. They argue that: “...we draw a definite distinction between supply chains as a phenomenon that exists in business and the management of those supply chains. The former is simply something that
exists (often also referred to as distribution channels), while the latter requires overt
management efforts by the organizations within the supply chain" (Mentzer et al., 2001, p. 4).

Lambert and Cooper (2000) also discusses the fact that all firms participate in supply chains all the time, reaching from raw material to the ultimate consumer. However, which parts or links of the supply chain that should be managed – and how – is, according to the authors, another matter of concern that can be labeled SCM.

Combining the number of companies involved and the understanding of a supply chain, results in four possible views on the organizational scope of SCM, which are all represented in the literature (see Exhibit 2.2):

**Exhibit 2.2 Different opinions on the organizational scope of SCM**

<table>
<thead>
<tr>
<th>Number of organizations involved</th>
<th>Cooper &amp; Elram (1993)</th>
<th>Hoolihan (1985)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All organizations</td>
<td>Cooper et al. (1997)</td>
<td>Mentzer et al. (2001)</td>
</tr>
<tr>
<td>At least three organizations</td>
<td>ASC does not always exist</td>
<td>ASC always exist</td>
</tr>
</tbody>
</table>

Another example of how to simplify and clarify the organizational scope of SCM is to distinguish between primary and supporting members of the supply chain (Lambert and Cooper, 2000). Primary members are defined as "those autonomous companies or strategic business units who carry out value-adding activities (operational and/or managerial) in the business processes designed to produce a specific output for a particular customer or market" (Lambert and Cooper, 2000, p. 70). Supporting members in turn are defined as "companies that simply provide resources, knowledge, utilities, or assets for the primary members of the supply chain" (Lambert and Cooper, 2000, p. 70). This classification can be compared with Mentzer et al.'s (2001) three degrees of "supply chain complexity" (Mentzer et al., 2001, p. 4); direct supply chain, extended supply chain and ultimate supply chain. In a direct supply chain a focal company, a supplier and a customer are involved. This view, with three independent units, is seen as a minimum to SCM. In the extended supply chain, the supplier's supplier and the customer's customer are also added. Finally, in the third type called ultimate supply chain, all "organizations involved in all the upstream and downstream flows of products, services, finances, and information from the ultimate supplier to the ultimate customer" (Mentzer et al., 2001). This
means that e.g. carriers and third party logistics companies are also covered in the organizational scope of SCM (see also Tan 2001).

The increased efforts in recent years to realize SCM and make it less difficult to achieve, has also meant a discussion in literature on that all relations should not be embraced by the SCM philosophy and characterized with a collaborative atmosphere (Cooper et al., 1997). Barratt (2004) is for example questioning collaborative relationships with all other members in a supply chain:

"What is not clear in the literature is whether we can collaborate with everybody. The answer is probably "no", but it is not as disappointing as it may sound. Organizations need to realize that the resource intense nature of collaboration means that they need to focus their attention on a small number of close relationships rather than trying to collaborate with everyone. But why would organizations want to collaborate with everyone; some relationships may well be "optimal" in the sense that they are most suited to an arm's-length, purely cost based type of relationship, i.e. collaboration would not create any further added value or benefit" (Barratt, 2004, p. 33)

To conclude, the inter-organizational scope of SCM in organized retail context nowadays seems to be considered as at least three organizationally independent actors; in its simplest form this could be a **supplier, a third party logistics provider, and the supplier's customer**. When considering only primary members of the supply chain (which is the case in this study) a supply chain could consist of a focal company and its customer and supplier.

Vonderembse and Tracey (1999) conducted a research study on the impact of supplier selection and involvement on manufacturing performance. They concluded that the level of supplier involvement in continuous improvement activities is low in supply chains. Although many managers acknowledge the need for enhanced relationships in the channel, it is not being implemented consistently. They also concluded that increased company/supplier involvement may have significant impact on supply chain performance.

Despite all, the SCM still cannot be considered fully implemented in many supply chains in retailing. Spekman et al. (1998) concluded from their survey-based research into the subject that "...... although we espouse the benefits of supply chain management and sing the virtues of closer ties throughout levels of the supply chain, the business has not yet fully operationalized the concept of supply chain management". Not many companies have successfully arrived at a total SCM environment. When reading research literature as well as management magazines, titles like "How efficient is Efficient Consumer Response" (Knill, 1997), and "VMI – Very Mixed Impact?" (Cooke, 1998) confirm the difficulties. Apart from the fact that
strategic partnership with suppliers in retailing is still something unusual, there also seems a gap between the ideas behind the concepts and empirical research about the promised effects of partnership and collaboration. It seems like those companies that have realized SCM and started to collaborate have not always been rewarded with all the positive effects that are outlined by the concept advocates. As an example, empirical research into collaborative planning, forecasting, and replenishment (CPFR) shows that many of the promised effects could not be seen (Skjoett-Larsen et al., 2003; Småros, 2003; Stank et al., 1999). Stank et al. (1999) concluded that “This research fails to verify the existence of broad-based performance enhancements related to implementation of CPFR, but it does indicate that firms engaging in high levels of CPFR can expect to realize reduced overall cost. That is good, but it does not speak of the many other benefits often attributed to CPFR. Significant improvements in customer service, reduced stock-outs, less instance of damaged, returned and refused goods, and lower inventory levels with faster returns are all expected benefits of collaborative demand planning that were not supported at a statistically significant level by this research.”

2.3 STRUCTURE OF A COLLABORATIVE SUPPLY CHAIN IN RETAILING

Exhibit 2.3 shows a simple structure of a supply chain in organized retailing setup. Supply chain links all players with a joint decision-making process for demand planning and order fulfillment, collective performance metrics to evaluate individual performance and collective performance, and information sharing in a mutually beneficial way. The basic proposition of the chain members is to be able to effectively fulfill customer demand at less cost through mutual cooperation and collaboration. For example, in a make-to-stock supply chain, seamless information sharing allows the retailer and the supplier to create a demand driven supply chain that results in efficient use of production capacity, lowering of inventory

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12 Pierre Dillenbourg, Michael Baker, Agnes Blaye & Claire O’Malley (1995) ("The Evolution of Research on Collaborative Learning" In P. Reimann & H. Spade (Eds), Learning in humans and machines. Towards an Interdisciplinary learning science, 189- 211. London: Pergamon). make a distinction between cooperation and collaboration. They define cooperative work as "...accomplished by the division of labor among participants, as an activity where each person is responsible for a portion of the problem solving..." They define collaboration as "...mutual engagement of participants in a coordinated effort to solve the problem together". They further note that work often is split also in collaboration. But the difference is that in cooperation the task is split (hierarchically) into independent subtasks, and in collaboration the cognitive processes may be (hierarchically) divided into intertwined layers.

Co-operation is working with another person, or other persons, in general terms, or behaving in a helpful manner. Collaboration, more usually used in a theatrical or artistic sense, means to work together with another or other on a specific project. Collaboration also has the derogatory meaning of "working with the enemy in time of war" (Source: Summarized from Chambers 21st Century Dictionary).

Cooperation can be both vertical and horizontal in meaning. Collaboration is only horizontal. For example, an employee shows good cooperation when he or she readily yields to his or her superior's wishes. One would never use the word collaboration in this context. On the other hand, both cooperation and collaboration have the meaning of working together and getting along to achieve a specific goal or task. One collaborates on a project in the sense of working together. One cooperates with one another in order to complete the project. In this sense collaborate has the meaning of participation, and cooperate the meaning of getting along.
levels, reduction of out of stocks, and better customer service. The retailer has
decision rights (e.g. order placement and sales target), private information (e.g. end
customer demand), and internal costs and revenue. The supplier also has its own
decision right (e.g. delivery and production setting), private information (e.g. product
characteristics), and internal costs and revenue.

Exhibit 2.3 Structure of a Strategic Supply Chain in Retailing

The five features that make up the core of the collaborative supply chain
framework (CSCF) in retailing are shown in Exhibit 2.4.

Exhibit 2.4 Core Features of Collaborative Supply Chain Framework

Advocates of this perspective argue that chain members should be able to
coordinate and match the five features. Changing one feature often requires
changing the other features. Incentive alignment, for instance, must be matched to
performance metrics that are being measured. Moreover, defining collaboration with
respect to the five features is necessary and sufficient because it captures the
complex practice of collaboration. It covers the types of joint decisions to make,
information needed for decision-making and control, performance metrics, an incentive system that shares costs and benefits, and integrated supply chain processes. The five features of the CSCF shown in Exhibit 2.4 have been explained in the text in this chapter.

2.3.1 Collaborative Performance System (CPS)

A CPS can be defined as the process of devising and implementing performance metrics that guide the chain members to improve overall performance. The process also includes resolving two related issues: who should be involved in determining the mutual objective and what performance metrics should be specified with respect to the mutual objective. The mutual objective reflects the competitive factors that can be attained if the chain members build collaboration. Competitive factors can be in the form of product and service advantages, such as customer service, quality, price, supply chain costs, and responsiveness, recognized by the market as superior compared to competitors. These factors are assumed to enhance each chain member's profit, return-on-investment, and cash flow in retailing.

The chain members require different types of performance metrics that span the supply chain (Kaplan and Cooper, 1997). To address this need, Simatupang and Sridharan (2004) proposed three dynamic learning cycles that enable the chain members to examine their collaborative performance at different managerial levels, which provide an opportunity to improve overall performance. First, the exception cycle is defined as the collaborative process designed to ensure rapid response in fulfilling customer demands. This process is designed to protect actual sales from any market changes and disruptions. The main activities of the exception cycle include monitoring triggering events (i.e. deadline, inventory status, and demand condition), detection (i.e. the identification of a potential difficulty that impedes the supply chain execution), diagnosis (i.e. the evaluation of a most likely cause of supply chain malfunctions), and corrective actions (i.e. returning the process performance to a satisfactory level). The typical process metrics for the exception cycle entail metrics associated with inventory velocity, perfect order, and delivery time.

Second, the improvement cycle refers to the joint initiatives to carry out ongoing improvement. The main activities of the improvement cycle include identifying improvement targets, formulating improvement plans, and analyzing and carrying out appropriate improvement options. The concurrent metrics for the improvement cycle include the half-life-curve of forecasting accuracy, flexibility, responsiveness, and cash-to-cash cycle.
Third, the review cycle is the process used to compare the expectation and the actual collaborative outcomes. The review cycle employs outcome metrics such as growth, sales, profits, and inventory turns (Dell and Fredman, 1999).

In terms of interaction with other features, CPS requires information sharing, decision synchronization, and incentive alignment to monitor and improve actual performance. Information sharing reports data about performance status. Decision synchronization enables the chain members to optimize performance metrics through effective joint decision making. Incentive alignment employs performance metrics to devise benefit- and cost-sharing agreements. Integrated supply chain processes provide feedback about the actual benefits of collaboration based on the status of physical events.

The collaborative performance system (CPS) could be understood by underlining the past researches in Supply Chain Management drawn from different theories which have concentrated mainly on the study of buyer-supplier relationships in diversified contexts. In fact there are three major research areas in CPS (Exhibit 2.5):

1. the relationship characteristics, importance, benefits, and effects on other relational factors,
2. the impact of buyer-supplier relationships on buyer or supplier performance, firm performance, and supply chain performance, and
3. the influence of environmental uncertainty on relationship factors or firm performance.

### Exhibit 2.5: Main Focus Areas in Supply Chain Management in Retail

<table>
<thead>
<tr>
<th>Focus (1)</th>
<th>Buyer-Seller Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus (2)</td>
<td>Firm/Supply chain performance</td>
</tr>
<tr>
<td>Focus (3)</td>
<td>Decision-making uncertainty</td>
</tr>
<tr>
<td></td>
<td>Lack of empirical studies</td>
</tr>
</tbody>
</table>

### Buyer Supplier Relationship

The crux of the supply chain management issue in retailing is strategic supplier-customer partnership. Existing research in SCM interchangeably use the

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13 LaLonde and Cooper (1989) define partnership as "a relationship between two entities in the logistics channel that entails a sharing of benefits and burdens over some agreed upon time horizon." According to Ellram and Hendrick (1995), a partnership is "an ongoing relationship involving a commitment over an extended period of time, and a sharing of information and the risks and rewards of the relationship." The common characteristics from these definitions include long-term agreements and sharing benefits, costs, and information. Successful partnerships have the following dimensions: 1) long-term commitment, 2) information sharing, 3) cost reduction and increased quality, and 4) sharing
term 'buyer-supplier relationships’ or ‘collaboration between organization’ and ‘buyer-supplier partnership’. This strategic alliance\textsuperscript{14} in retailing basically refers to retailer-supplier relationship defined as "the long term relationship between the retailer and its suppliers". It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits (Li et al., 2006, p. 109). To create a competitive advantage, SCM is increasingly emphasizing inter-organizational co-ordination of activities (Sheth and Sharma, 1997; Ballou et al., 2000).

Drawing from social exchange theory, Anderson and Narus (1990, p. 45) defined collaboration as “similar or complementary coordinated actions taken by firms in an interdependent relationship to achieve mutual or singular outcomes with expected reciprocation over time.” Reciprocation implies that one actor responds to another actor’s actions by a similar kind of action (Haugland and Gronhaug 1996). For example, if a supplier can adjust its delivery schedule to meet the needs of an urgent order for a particular retailer, this retailer, in turn, makes continuous orders with its supplier for flexible delivery support. In addition, collaboration between the exchange parties reflects the expectations of achieving mutual and individual goals jointly (Cannon and Perreault 1999), and willingness to have continued business exchange (Mavondo and Rodrigo 2001).

Haugland and Gronhaug (1996) considered that reciprocity is the foundation for collaboration, and reciprocity casts the shadow of the future indicating the possibility that the exchange parties will work together again in the future. Through repeated transactions and continuous interaction, both parties’ cooperative behaviors evolve incrementally over time. Collaboration becomes a norm that is developed through mutual consensus with rules of behaviors and used to govern the acceptable behaviors in the relationship (Homans 1958; Blau 1964). The purpose of strategic partnerships is to enable enhanced coordination in operations, R and D, product launching, and the like, between partners (Fulconis and Paché, 2005).

**Benefits**

risk and rewards (Ellram and Hendrick, 1995; Gentry, 1996). Benefits include improved quality, reduced cycle time, lower total cost/price, order completeness, and improved communications (Ellram and Krause, 1994). The management of risk and uncertainty through cooperation is a key motivation bringing partners together (Gardner and Cooper, 1988).\textsuperscript{14} An alliance is defined as "a contractual relationship between two independent entities in the logistics channel to achieve specific objectives and benefits" (LaLonde and Cooper, 1989). Partnerships are the most informal and most common type of strategic alliance (Rogers and Daugherty, 1995).
While assessing the benefits of such relationship, collaboration is considered as a crucial factor to establishing a satisfactory relationship in retail supply chain management (Skinner et al. 1992; Morgan and Hunt 1994). It is believed that mutual collaboration among exchange partners is essential to achieve better sales with fewer inventories in the total supply chain system (Christopher and Towill 2002). Achieving flexibility in an uncertain business environment enables exchange partners to participate in high levels of collaboration, joint planning, and mutual adaptation to customer requirements (Anderson and Narus 1990; Lambe et al. 2001; Eriksson and Sharma 2003). Siguaw et al. (1998) also suggest that cooperative partnership will lead to improved financial performance as the channel partners work toward a common goal.

Some of the advantages of including suppliers early in the product-design process as mentioned by Tan et al. (2002) are that suppliers can offer cost effective design alternatives, assist in selecting better components and technologies, and aid in design assessment.

Furthermore, a considerable amount has been written documenting the integration of suppliers in the new product development process (Burt and Soukup, 1985; Clark and Fujimoto, 1991; Helper, 1991; Hakansson and Eriksson, 1993; Lamming, 1993; Hines, 1994; Ragatz et al., 1997; Dowlatshahi, 1998; 2000; Swink, 1999; Shin et al., 2000). De Toni and Nassimbeni (1999) found that a long-term perspective between the buyer and supplier increases the intensity of buyer-supplier coordination.

Uncertainty reduction is one of the motivators for a firm to engage in cooperative relationships with its focal exchange partners. Though the recent study of Eriksson and Sharma (2003) reported that the seller is more willing to enter buyer-seller cooperative relationships under conditions of lower uncertainty in decision-making, the results cannot explain whether establishing closer cooperative relationships with focal partners can reduce the perceived uncertainty in a buyer or supplier's decision-making.

Another benefit of the information age and globalization is forcing companies to place a premium upon collaboration as a new source of competitive advantage (Dyer and Singh, 1998). Closely working together enables the participating members to create and capture mutual benefits for all members from matching demand with supply (Fisher, 1997). Mutual advantages often translate to a very positive return on investment and more efficient inventory management (Walker et al., 2000). Wal-Mart, for instance, collaborated with Warner-Lambert to attain mutual benefits of collaborative planning, forecasting, and replenishment (CPFR) (Parks, 2001). Mutual benefits included an improvement in stock levels on Listerine from 87 to 98 percent,
lead times were shortened from 21 to 11 days, on-hand inventory was cut by two weeks, orders were more consistent and sales increased by 8.5 million dollars. In a similar vein, General Electric (GE) collaborated with its retailers to respond to customer demand instead of inventory (Treacy and Wiersema, 1993). By focusing on a build-to-order system, both parties eliminated the cost of holding inventory and assembling full truckload orders. GE was able to save about 12 percent of distribution and marketing costs and obtained half of the retailers' sales. The retailers were able to reduce out-of-stocks and gained increased profit margins on GE products.

The Japanese supplier partnership system is widely discussed in the literature (Webster, et al., 2000; Gilbert, et al., 1994; Nishiguchi, 1994; Morris and Imrie, 1993; Schoenberger, 1982). Japanese companies in electronics, automobiles, and machinery industries began involving their suppliers in joint design with their customers (Nishiguchi and Brookfield, 1997).

Risk sharing is an important benefit of partnerships and maintaining a competitive advantage. Ellram (1991) suggested that retailing firms are relying on partnerships within; therefore, they share the risk of not being able to fulfill an order requirement which delays production. Other examples of risk sharing include "joint investment in assets and third party companies guaranteeing certain volumes of business over a certain period of time" (Coyle, Bardi, and Langley, 1996).

Risk reduction is attempted through 1) detection of deviance from expectations, 2) faster, more accurate operational instruction exchange, and 3) easy, speedy managerial information flow among firms (Gardner and Cooper, 1988). Thus risk sharing is mitigated through affective information sharing.

Long-term relationship does not refer to any specific period of time, but rather, to the intention that the arrangement is not going to be temporary (Chen and Paulraj, 2004). Through close relationships supply chain partners are willing to (1) share risks and reward and (2) maintain the relationship on a long term basis (Landeros and Monczka, 1989; Cooper and Ellram, 1993; Stuart, 1993). Gunasekaran et al. (2001) assert that a strategic partnership emphasizes long-term relationship between trading partners and "promotes mutual planning and problem solving efforts" (as cited in Li et al., 2006, p. 109). Strategic partnerships between organizations promote shared benefits and ongoing collaboration in key strategic areas like technology, products, and markets (Yoshino and Rangan, 1995).

The literature states that SCM contribute to many positive effects for the participating actors; both cost as well as service improvements are expected. These expected effects could be considered as the strongest reason for why companies should collaborate. Thus the obvious question that must be attempted is - What companies in organized retailing actually do when they collaborate -
develop relationship with suppliers. What are driving forces for collaboration, benefits, barriers to collaboration and effects of the relationships?

Driving forces and barriers to collaboration

Theoretically authors discuss the effects of SCM and collaboration as lowered total costs, improved service and shorter lead times. In addition more intangible effects, such as the wish to strengthen the company’s market position and increase its competitiveness, can be seen as driving forces. In this thesis efforts have been made to investigate whether it was service and/or cost related factors that are the driving force for the collaboration amongst the organized retailers.

In the past, holding large amounts of inventory was a typical business practice. This was due to the uncertainty involved in dealing with many suppliers. The SCM tends to reduce or eliminate inventory wherever possible, but it is important to understand the balance between inventory and customer service. Competitive advantage is another tendency that is usually referred to as the driving force for organizations to adopt SCM practices.

Ballou (1992) stated that increased customer service is a driving force to hold inventory. "Inventories provide a level of product or service availability, which, when located in the proximity of the customer, can meet a high customer service requirement" (Ballou, 1992). Inventory close to the customer can also reduce cost of lost sales and result in repeat customers.

At the same time one must remember that holding any amount of inventory results in some form of expense, particularly carrying costs. On the other hand, the reasons for holding inventory can indirectly reduce operating costs realized in other company activities (Ballou, 1992). These cost reductions can be price-quantity discounts, lower transportation rates, or holding safety stock to insure against stockouts (Coyle, Bardi, and Langley, 1996). Safety stock is held to buffer uncertainty or variability involving external factors, including supplier relations, economic conditions, and raw material supply. Many firms hold safety stock due to the time variance during product delivery and unknown demand requirements.

SCM strives to minimize the uncertainty involved in business transactions among firms in the supply chain which leads to building safety stock inventory (Coyle, Bardi, and Langley, 1996) and thus driving force. Reducing uncertainty can lower inventory levels held within the chain by reducing the number of suppliers a firm deals with and enhancing the relationships with the remaining firms. This can be done by sharing information about anticipated demand, orders, and production schedules (Coyle, Bardi, and Langley, 1996).
"Each player in the supply chain optimizes its own position by holding all of the inventory it needs or requiring other supply chain members to hold additional inventory" (Ellram and Cooper, 1990). There will always be some level of inventory within the supply chain, but "the real difficulty is knowing how much to hold and where to hold it" (Davis, 1993). Coordination is the reason that SCM exists and has become increasingly popular within firms.

Another driving force behind the emergence of SCM is pressure from the customer for improved service (Quality of service) (Giunipero and Brand, 1996) and satisfaction. Coyle, Bardi, and Langley (1996) defined customer service as a "process for providing competitive advantage and adding benefits to the supply chain to maximize the total value to the ultimate customer." Customer satisfaction is referred to as the "cumulative level of satisfaction based on the total purchase and consumption experience with a good or service over time" (Sharma, Grewal, and Levy, 1995). SCM is thus instrumental in delivering high customer satisfaction with reduced lead times and costs. An increase in customer service levels will increase costs, but also will increase customer satisfaction that in turn increases revenues. In other words, a satisfied customer will return and be willing to pay a premium for high customer service levels, resulting in higher profits.

When implementing a customer service program, each level of service is associated with some transportation and inventory costs. For example, inventory levels (and carrying costs) can be lowered if air transportation is used, but transportation costs will be higher (Coyle, Bardi, and Langley, 1996). These costs can be justified if higher customer service levels result in a higher profit. A company needs to find a customer service level that balances total benefits and total costs.

Langley and Holcomb (1992) identified several trends in customer service including: 1) the ability to effectively manage information, 2) longer-term relationships, and 3) sustainable competitive advantage. Understanding and implementing these trends are important because customer service becomes the link between logistics and marketing activities (Langley and Holcomb, 1992). A company with a logistics and marketing advantage will be an industry leader.

A shift from transactual to contractual relationships has resulted in longer-term relationships (or partnerships) with buyers and suppliers. Partnerships evolve "from a relationship between suppliers and satisfied customers who have become repeat purchasers and loyal to a particular firm" (Sharma, Grewal, and Levy, 1995). Close buyer-supplier relationships have come to the forefront of today's business world as a result of companies' working to improve their levels of customer satisfaction. Customers experience service improvements through reduced inventory
levels, shorter cycle times, and more timely and accurate information (Lambert, Emmelhainz, and Gardner, 1996).

Enhanced customer service levels give companies a competitive advantage over competitors by ensuring customers that service is a priority. A successful customer service program can become a "strategic tool for a company to differentiate itself from its competitors" (Coyle, Bardi, and Langley, 1996). The total focus of SCM is to satisfy the customer which enhances the competitiveness and profitability of a firm (Giunipero and Brand, 1996). "Effective management of the goods flow, from the supply of raw materials to the distribution and delivery of the finished product to the customer, is the basis of effective customer service" (van Amstel and Starreveld, 1993).

**Competitive advantage** is not only a trend in customer service, but also a reason to establish an entire SCM philosophy. Effective SCM produces competitive advantage for a firm in that it is said to reduce costs (Martin and Grbac, 2003; Sheth and Sharma, 1997; Tan et al., 1998; Araujo et al., 1999). SCM practices have been found to be positively related to competitive advantage (price, quality, delivery dependability, product innovation, and time to market) in prior literature (Li et al., 2006) and thus a driving force.

Larson and Kulchitsky (1998), in an empirical study found that developing strategic supplier partnerships also lead to cost effectiveness of the retailer firm. Christopher (1992) states that, the greater the collaboration, at all levels, between supplier and customer, the greater the likelihood that competitive advantage can be gained by organizations.

Extensive coordination with suppliers and involving them in new product development process has been found to enhance the ability of organizations to develop successful new products, and thus gain competitive advantage in the marketplace (Ragatz et al., 2002; Twigg, 1998). Advantages of supplier participation in new product development include reduced project costs (Kessler, 2000; Clark, 1989), and improved perceived product quality (McGinnis and Vallopra, 1999; Ragatz et al., 1997).

Ragatz et al. (2002) found that supplier integration can reduce material costs and quality, product development time and cost, and manufacturing cost while improving functionality. A long-term relationship with the supplier will have a lasting effect on the competitiveness of the entire supply chain (Choi and Hartley, 1996; Kotabe et al., 2003).

As the market environment becomes more competitive, firms must develop a strategic long-term (versus a traditional adversarial approach) competitive advantage to remain in business. Strategic capabilities needed for a firm's success and
competitive advantage include being responsive to target markets, having low total distribution cost, and speedy, reliable delivery (Morash, Droge, and Vickery, 1996). Companies use strategic alliances to achieve these capabilities.

Despite the difficulty of forming strong effective partnerships, the “companies that know how to manage alliance relationships will have a competitive advantage over those companies that are not comfortable with alliances” (Soucie, 1997).

Also, the more dependent party who has less power is compelled to cooperate with the powerful party due to the resource scarcity (Schermernhorn 1975; Young and Wilkinson 1989; Boersma et al. 2003). Facing no alternative source of supply or limited resources being available, the weaker party has to cooperate with its powerful exchange partner in order to survive and avoid punishment for non-compliance. Though this type of collaboration is considered as being coerced, collaboration is a way to respond to environmental pressure (Schermernhorn 1975).

Also all uncertainties arise from the demand and supply chains. To reduce uncertainty, retailing firms establish cooperative relationships to make their market environment more predictable (Turner et al. 2000; Eriksson and Sharma 2003). Close collaboration between firms gives an assurance of future supplies and deliveries and thus minimises the supply uncertainty.

The exchange parties seek to gain value from establishing cooperative relationships (Schermernhorn 1975). For example, a retailer cooperates with the supplier of a well-known brand because he expects to lift up store image and satisfy consumer brand preference. On the other hand, the supplier seeks a competent retailer to promote its products and expand its market share in a new sales area. Both anticipate the future benefits (in terms of tangible and intangible benefits) of developing and continuing such an exchange relationship. Therefore, their expectation may lead both firms in the direction of cooperative activities.

**Barriers**

A reason for the absence of logistics collaboration and positive effects could be that barriers for collaboration have not been tackled successfully. An interesting question therefore is - **what types of barriers mentioned in SCM literature are really experienced by the retailing companies?**

Two main categories of barriers can be identified in SCM literature: those related to **technology** and those related to **human beings**.

In literature, the large investments connected to e.g. EDI solutions, were assumed to make it difficult for small companies to collaborate successfully. However, more recently developed Internet based technology offers alternatives to EDI with lower costs, which also gives also small companies access to the technology and opportunities to more extensive and advanced collaboration. Despite this, barriers
related to technology may still exist in many supply chains since the question about successful implementation of the technology is still a matter of concern. The possibility to buy technology at a reasonable price is good, but it does not automatically guarantee that it is successfully implemented and used. In their study about the adoption of ECR among companies in the grocery industry, Hoffman and Mehra (2000) discussed this problem and stated that technology barriers still have to be tackled: "If there is one element that can cause the breakdown of any "best designed" supply channel, it is the technology factor. In this stage, a clear understanding of the technology needs of all partners must be assessed followed by information flow planning" (Hoffman and Mehra, 2000, p. 372).

As a consequence of technological development, new problems emerged that were not an issue before. Horvath (2001) argues that the security aspect of the new technology is important in collaborative relationships. Nowadays, when technology has made it possible to integrate and connect actors' computer systems rapidly and efficiently, the partners must be able to make fast and accurate decisions concerning the other company's access to sensitive information.

With regard to human related problems, a main barrier to SCM (Mentzer et al., 2001) is the granted voluntary nature of collaboration (Mentzer et al. 2001). However, collaboration in reality is not always built upon solid supply chain operations among the supply chain members. In fact, the balance of power between actors in a supply chain can mean that actors are forced to collaborate (Mattsson 2002). Such a forced collaboration initiated by coercion from one side does not guarantee mutual gains and better optimizations for the whole supply chain which are in line with the purpose of SCM (Hoffman and Mehra, 2000).

**Antecedents of Collaboration**

**Trust**

In the context of distribution channels, trust has been frequently used as a key factor in developing effective supply-chain relations. Tomkins (2001) explored the role of **trust and information-sharing** in inter-organizational partnerships. The role of "commitment" and "trust" in relationship marketing and inter-organizational collaboration has been also been widely talked about since the late 80s (Morgan and Hunt, 1994; Dwyer et al., 1987; Young and Wilkinson, 1989).

The emphasis on trust has prevailed among business industries not only in western countries, but also in Indian business communities, however, there is a distinctive difference in trust in business relationships between Indian culture and Western culture. **Trust in business relationship is built on a personal level in Indian culture, whereas trust is built at the organizational level in Western**
culture (Fang and Kriz 2000). Kao’s (1996) study of “personal trust” in the large businesses indicated that “personal trust” plays a prominent role in the establishment of partnerships. The formal contractual rules are just a backup of commitment. Kiong and Kee (1998) concluded that the non-use of written contracts characterizes the mutual trust between channel members.

The literature has shown that trust is a multi-dimensional construct involving an exchange partner’s reliability, integrity, competence, honesty, fairness, responsibility, and confidence (Seppänen, Blomqvist and Sundqvist 2005). Schurr and Ozanne (1985, p. 940) defines trust as “a belief that a party’s word or promise is reliable and a party will fulfill his/her obligations in an exchange relationship.” In a working relationship, an exchange partner believes that another partner will perform actions that will result in positive outcomes for the firm, as well as not take unexpected actions that would result in negative outcomes for the firm (Anderson and Narus 1990, p. 45). Moorman, Deshpande, and Zaltman. (1993, p82) regard trust as “a willingness to rely on an exchange partner in whom one has confidence”.

On the contrary, Wong (1998) uses five constant virtues to describe trust as ‘benevolence, righteousness, propriety, wisdom and fidelity.’ (Fidelity implies the payback of obligation of gratitude and honesty). In Indian literature trust has been referred to as credibility. Specifically, credibility reflects “the integrity, trustworthiness, or the reputation and character of a person” (Kiong and Kee 1998, p. 85) and a person’s “overall social credit evaluation with his/her social status” (Leung et al. 2005, p. 532). DeGlopper (1978) found credibility is essential in doing business since the trustworthiness and reliability of a person will be first evaluated in business dealings.

It is important to note that reputation has been viewed as a precursor of trust (Ganesan 1994; Chiles and McMackin 1996; Doney, Cannon and Mullen 1998; Boersma et al. 2003). The level of trust is built through previous exchanges and company or individual reputation. A person’s trust is assessed by his business performance and his reputation of fair dealings with other people. Business people using a verbal agreement mainly rely on their trading partners’ of retail as credibility. Credibility such as ‘on-time payment’, ‘honesty in transactions’, ‘reliability in product and service’, etc. is the evidence to add to one’s reputation of good credibility. If a person’s words or promises cannot be relied on, he dampens his credibility and loses face as well. Consequently, it is difficult to be trusted in ongoing transactions and even in daily life. Furthermore, a reputation for trustworthiness is deemed an asset (Chiles and McMackin 1996) and increases one’s trust to other people. It is worthwhile investing time and effect to build up one’s reputation for long-term business. Credibility and reputation thus constitute important components in trust
which is fundamental to effective supply chain management in retailing. Thus benevolence and credibility remain the two key facets of trust where benevolence defined as the motives and intentions of an exchange partner Ganesan (1994).

**Importance of Trust in Supply Chain Management**

Though the process of building customer trust is time-consuming, costly, and complex, maintaining the confidence and patronage of an exchange partner is important and will benefit the long-term buyer-supplier relationship (Kalwani and Narayandas 1995; Doney and Cannon 1997). Trust facilitates better communication between exchange partners (Dwyer et al. 1987). Trust is a predictor of cooperative behaviour between organizations (Morgan and Hunt 1994; Siguaw et al. 1998; Johnston et al. 2004). Trust perceived by a supplier or buyer can motivate the other party to cooperate in business activities. Thus, scholars consider trust is central to all relational exchanges and is conducive to relationship marketing success (Morgan and Hunt 1994; Geyskens et al. 1998).

Supply chain management is developed on the basis of trust and commitment (Lee and Billington 1992). Riddalls et al. (2002) emphasised that trust is viewed as an important basis for operating effectively in a highly competitive and fast moving market. Especially retail markets which are highly volatile, trust amongst the channel partners forms the basis of effective supply. Lack of trust can be translated as being unwillingness to share information (Fawcett and Marnan 2001). Without trust between supply chain members, inaccurate sales data and demand forecast provided from retailers to suppliers will result in enormous costs and will pass on to the whole supply chain. This phenomenon is known as the **bullwhip effect** (Lee, Padmanabhan and Whang 1997).

Though most researchers consider that trust is cultivated and used in economic exchange, the socio-cultural aspect of trust should be taken into account in studying buyer-supplier relationship (Lui 1998). The role of trust in the supply chain management is reviewed from the social perspective and the economic perspective in the following paragraphs.

**Socio-cultural perspective**

Trust is a lubricant of the social system. In the small retail outlets ownership is restricted to a family or close members or close relatives. The kinship ties them together, and personal trust is what they rely on. As Arrow (1974, p. 23) states, trust is “an important lubricant of a social system. It is extremely efficient; it saves a lot of trouble to have a fair degree or reliance on other people’s word.”

Trust is a central aspect of social exchange as social exchange is governed by social obligations instead of contracts (Blau 1964). Thorelli (1990) mentions that trust is a vital supplement to contractual arrangements in oriental culture. A similar
opinion is held by Mavondo and Rodrigo (2001) that interpersonal trust plays a crucial role in business networks and is regarded as a complement to legal obligations, or has a more important role than legal contracts (Huang and Landa 1999; Tsang 1999).

**Economic perspective**

Trust is a transaction-cost-reduction mechanism. In small business circles, it is fairly easy to check a person's credit history, background, reliability, etc. Kao (1996) addresses the importance of personal trust and reported that personal trust provides assurance and predictability to exchange partners. His argument is analogous to the prevention of opportunistic behaviour underlined in Transaction Cost Analysis (Williamson 1985). Some scholars also consider interorganizational trust a governance mechanism to reduce opportunistic behaviour (Morgan and Hunt 1994; Doney and Cannon 1997).

A businessman who is trustworthy and dependable will reduce the transaction costs, including ex-ante costs associated with selecting and screening potential business partners and ex-post costs such as monitoring compliance with contracts (Ganesan 1994; Chiles and McMackin 1996; Boersma et al. 2003). Therefore, Boersma, Buckley, and Ghauri (2003) claimed that trust is a transaction-cost-reducing mechanism.

Trust is a reaction to uncertainty. Some scholars claimed that trust decreases an exchange partner's decision-making uncertainty because an exchange partner has confidence in a trustworthy party that is reliable and has high integrity (Morgan and Hunt 1994; Gao et al. 2005).

**Impact of Trust in Relationship**

Trust between exchange partners has great influence in some aspects of relationships, firm performance, and, to a larger extent, supply chain performance. Many studies have reported that trust has great effect on other relationship factors. Anderson and Weitz (1989) demonstrated that trust is the key to maintaining continuity in conventional channel relationships. Anderson and Narus (1990) found trust is critical in reducing conflict and enhancing satisfaction of channel members. Trust has the strongest effect on achieving collaboration in a relationship (Morgan and Hunt 1994). Other researchers concluded that trust has a significant direct effect on commitment (Morgan and Hunt 1994; Mavondo and Rodrigo 2001) and long-term orientation (Ganesan 1994; Geyskens et al. 1998; Mavondo and Rodrigo 2001).

Trust can affect the financial performance of a firm or a supply chain. For example, Siguaw et al. (1998) reported that a distributor increases satisfaction with its financial performance when it believes his supplier is more credible and benevolent.
Some studies examined the effect of trust on non-financial performance. Dahlstrom and Nygaard (1995) provided the insight that the relationship between trust and performance varies from country to country. For example, having franchisee interpersonal trust in a franchiser facilitates the franchiser performance. Moreover, several studies have found a positive effect that trust has on relationship satisfaction (Anderson and Narus 1990; Geyskens et al. 1998), relationship quality (Wong and Chan 1999), and future purchase intentions and supplier selection (Doney and Cannon 1997).

**Exhibit 2.6 Trust and Performance**

<table>
<thead>
<tr>
<th>Study</th>
<th>Industry/Country/type of relationship</th>
<th>Performance included</th>
<th>Empirical results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambler, Style, Xiucum (1999)</td>
<td>102 proprietors or senior Chinese managers of SME, China Manufacturer-distributor</td>
<td>Sales growth</td>
<td>Trust -&gt; Export performance (+)</td>
</tr>
<tr>
<td>Dahlstrom and Nygaard (1995)</td>
<td>Gasoline retailing Poland (40), Germany (29), Norway (216) Dealer-franchiser</td>
<td>The level of success associated with marketing, training, and management by the franchiser</td>
<td>Interpersonal trust -&gt; performance (+) (in Poland and Norway channel, (ns) in Germany channel)</td>
</tr>
<tr>
<td>Doney and Cannon (1997)</td>
<td>443 members of the National Association of Purchasing Management, US Buyer-supplier</td>
<td>Supplier performance (delivery, price/cost, product/service)</td>
<td>Buying firm trust in a supplier's salesperson -&gt; Buying firm's selection of supplier (+) and buying firm's anticipation of future interaction with the supplier (+)</td>
</tr>
<tr>
<td>Handfield and Bechtel (2002)</td>
<td>97 purchasing managers from NAPM, US Buyer-supplier</td>
<td>Responsiveness</td>
<td>Buyer trust -&gt; Supplier responsiveness (+)</td>
</tr>
<tr>
<td>Riddals et al. (2002)</td>
<td>N/A (math modelling)</td>
<td>Inventory costs, production costs</td>
<td>Trust -&gt; Supply chain performance (+)</td>
</tr>
</tbody>
</table>

Among those studies shown in Exhibit 2.6, two studies focus on the effect of trust on supply chain performance. Handfield (2002) suggested trust improves supply chain responsiveness, including on-time delivery and lead-time. A supplier who is not able to make timely delivery will lose its exchange partner's confidence in its
competence to perform an order efficiently. Riddalls et al. (2002) found that trust has great influence on supply chains in terms of inventory costs and production costs.

Most studies reveal the positive effect of trust on economic performance. The importance of trust in non-financial outcomes also plays a critical role in channel relationships. A satisfactory or quality buyer-supplier relationship can lead to better financial outcomes in the long run. Riddalls et al. (2002) also stated trust is one of the determinants of supply chain performance.

The core message of SCM is that companies in a supply chain should create a collaborative atmosphere where mutual trust, the sharing of risks and rewards and extensive information sharing, should prevent sub-optimizations in the supply chain. It is suggested that collaboration will lead to more integrated supply chains where independent companies act together as one single entity and work towards jointly agreed goals.

**Interpersonal Relationship**

Relationship is recognized as an "emergent form" of relationship marketing in Asia (Davies 1995) and has attracted considerable research interest in the past decade. The term social networking and relationship can not be overlooked in any study of supply chain management. Since the term relationship circumvents upon these two it is relevant to have some elaborations here. Yeung and Tung (1996, p. 55) refer to relationship as "the establishment of a connection between two independent individuals to enable a bilateral flow of personal or social transactions." Luo (1997) refers to relationship as a special type of connection or network, which involves reciprocal obligations and favors between two individuals or organizations. Davies (1995) defines relationship as "the social interactions within the network place and its members in the equivalent of an infinitely repeated game with a set of people they know." Relationship recently was viewed as a process that begins with two people and grows with more people at a later stage (Fan 2002).

Although there are different interpretations of the definition of relationship, they all imply that the reciprocal exchange of favors and obligations will play repeatedly within the social network. The favors can be intangible such as assistance, information and advice, or tangible such as products. Relationship is sustained through social interaction and mutual obligation to payback favor owed to another person.

Social networking and relationships play a critical role in retailing world, as well as in daily life. Indian people attach great importance to cultivating, maintaining and developing relationship. Relationship binds millions of small Indian firms to a big web, through which they excel in competing with Western firms (Montagu-Pollock 1991;
Kao 1993). It is important to understand how relationship operates in Indian society including its cultural background and some theoretical aspects.

**Socio-cultural background**

It is necessary for everybody to be part of a dependence web given the importance of relationship networks in Indian social life. With limited resources, Indians engage in social networking in an attempt to build connections with powerful persons who are able to provide assistance, or information when needed, and who will bring value to future businesses (Abramson and Ai 1997). A person's power is enhanced by his or her social status, influence and long-term value in a social network (Zhuang and Zhou 2004; Wang 2005).

Reciprocity is the key element in relationship. Relationship is based on the exchange of favors and is reciprocal. In line with social exchange theory, relationship has no definite time and no equal value to payback the favor that one received. The reciprocity stems from indebtedness, humanized obligation and emotional affinity, rapport which bond the exchange partners with a reciprocal obligation in relationship (Yeung and Tung 1996; Tsang 1999; Lee et al. 2001; Park and Luo 2001). The fulfillment of this reciprocal obligation intensifies one's trust and helps one's personal relationships, otherwise a person loses face and this may hinder his relationship network in the future.

The development of personal relationships is not necessarily based upon economic rewards or benefits, but on emotional support (Boersma et al. 2003). There are two components, emotional affinity, rapport and gift-giving, to maintain relationship active between exchange partners. Through social events (such as family, sports, business association activities) and life experience sharing, the bond between the members of a relationship network is enhanced, and emotional affinity, rapport is nurtured as well (Tsang 1999). Frequent interaction between retailer and supplier promotes the level of closeness, better understanding of mutual interest and familiarity of each other's characteristics, etc. Importantly, personal trust is fostered in the process development.

Gift-giving is also an important investment in relationship. It is a token of respect, appreciation and affection. It also implies the continuation and maintenance of personal relationships or business relationships. Gift-giving by an exchange partner to another may symbolize his appreciation of business support as a current business practice, or emotional support to someone having a difficult time to payback the favor owned to the other partner. It is an act to show a person's trustworthiness. As Huang and Landa (1999) mentioned, gift-giving is an investment in trust relationships.

Huang and Landa (1999) applied psychological game theory to address personal relationships which are critical in maintaining trust and collaboration.
between business partners by reducing risks of opportunist behaviour such as breach of contract.

Hill (1990) further concluded that social networks and interpersonal relationships between exchange parties could decrease opportunism. Tsang (1999) used resource-based theory to demonstrate that relationship can be a source of a company’s sustained advantage for doing business. These theoretical studies have recognized that the cultural factor ‘relationship’ plays a significant role in economic exchanges in terms of reducing opportunist behaviour and transaction costs, and providing competitive advantage.

The importance of relationship also addresses the motivations of why an individual or an organization wants to establish its personal relationship. Pulling relationship is the most commonly used strategy by the Indian in network construction and is a form of social investment. Pulling relationship means the efforts made to establish relationships with people of no previous relationships or not close relationships. Park and Luo (2001) further address that relationship is social capital since the reciprocal exchange of social obligations and favors is key to maintaining relationship. Yeung and Tung (1996) emphasized building strong relationship with the right persons is key to the long-term business success. The current investment will be applied for future needs.

Davies et al. (1995) reported that the important benefits arising from relationship are smoothing business transactions, providing information and obtaining resources. In competitive retail markets, information, such as market trends, product information and business opportunities, is valued as a competitive advantage of a firm. Some researchers also attach the importance of relationship to an organization’s competitive advantage as it can affect a firm’s performance (Tsang 1999; Park and Luo 2001).

Other researchers found that benefits expected by people to engage in relationship are to ensure product quality and service and cope with environmental uncertainties (Davies et al. 1995; Abramson and Ai 1997; Fock and Woo 1998; Wong 1998; Park and Luo 2001).

Several studies drew from different theories to highlight the role of relationship and its importance in doing business using business networks. In this section, some previous empirical studies will illustrate the impact of relationship in supply chain management.

Some empirical research has reported that relationship is a critical success factor in doing business retail sector. The findings of Ambler et al. (1999) and Chadee and Zhang (2000) indicated that relationship has a significant effect on export performance. Exporting firms make use of the relationship network to smooth
their distribution functions. Relationship-based sales force marketing was found effective for the foreign-invested enterprises regarding return on investment, asset turnover and domestic sales growth. Based on resource dependence theory, Park and Luo (2001) contend that relationship is an important resource for individuals and firms, and they found it has a positive impact on a firm’s sales growth. Liu and Wang (2000) supported that better relationship-based channel relationships would lead to better firm performance. Similarly, though Sawyerr et al. (2003) used the term ‘personal networking’ instead of relationship, they also found internal personal networking could have a positive effect on the financial performance of a firm.

Exhibit 2.7 summarizes some representative studies on relationship and performance. It should be noted that most studies related relationship to firm performance limited to financial performance. Financial performance is definitely the key economic outcome that most firms are pursuing. However, non-financial performance related to logistic operational flexibility or service levels is neglected in these studies.

### Exhibit 2.7 Relationship and Performance

<table>
<thead>
<tr>
<th>Study</th>
<th>Industry/Country/ type of relationship</th>
<th>Performance included</th>
<th>Empirical results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambler, Styles and XuCom (1999)</td>
<td>102 proprietors or senior Chinese managers SME, China Manufacturer-distributor</td>
<td>Sales growth</td>
<td>Prior relationship and personal friendship -&gt; Export performance (+)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>But through business negotiation and problem solving -&gt; Export performance (+)</td>
</tr>
<tr>
<td>Leung et al. (2005)</td>
<td>134 Senior purchasing managers of clothing manufacturing firms in China Buy-supplier</td>
<td>Satisfaction</td>
<td>Relationship -&gt; Satisfaction with the supplier (+)</td>
</tr>
<tr>
<td>Liu and Wang (2000)</td>
<td>103 foreign joint venture firms, China Manufacturer-distributor</td>
<td>Financial: ROI, net profit margin, overall financial accomplishment, and inventory level Operation: satisfaction with distributor’s performance</td>
<td>Relationship-based relationships -&gt; Performance (+) (i.e. trust-commitment relationship and harmonious relationship are positively related to financial and operational performance)</td>
</tr>
<tr>
<td>Luo (1997a)</td>
<td>67 foreign-invested enterprises, China</td>
<td>ROI, total asset turnover, domestic sales growth</td>
<td>Relationship-based sales force marketing -&gt; ROI, asset turnover and domestic sales growth (+)</td>
</tr>
<tr>
<td>Park and Luo (2001)</td>
<td>128 companies in Shanghai, and Jiangsu, China</td>
<td>Sales growth, profit growth</td>
<td>Relationship -&gt; Sales growth (+) (Relationship leads to higher performance in market expansion and sales growth than in financial returns.)</td>
</tr>
</tbody>
</table>
Liu and Wang (2000) included operational performance, such as product/service quality and satisfaction with distributor's performance, in addition to conventional financial performance. It is evident that some research opportunities to explore how relationship affects the operational performance in modern supply chain management exist.

**Power and Dependence**

The issues of power and dependence have been a prominent theme in channels research. Gaski (1984) emphasized the roles that power and dependence play in channels of distribution, and that conceptualization of dependence and power in marketing channels is inseparable. In pursuing effective supply chain management, the use of power can achieve coordination in channel activities and buyer-supplier relationships (Brown, Lusch and Muehling 1983; Frazier and Summers 1986), and improve the performance of the entire supply chain (Maloni and Benton 2000), while dependence can be used strategically to foster channel collaboration and reduce conflict (Kasulis and Spekman 1980; Skinner et al. 1992).

Extensive studies on the influence of power and dependence in marketing channels have contributed both theoretical and empirical research. Lee (2001) suggests that channel members in different cultures may have different perceptions about the use of power sources. As most constructs associated with power are mainly built on concepts and findings in Western countries, it is important to identify constructs that better fit an Indian context.

In accordance with Emerson’s (1962, p. 32-33) power-dependence theory:

The power of A over B is equal to, and based upon, the dependence of B upon A. The dependence of actor B upon actor A is (1) directly proportional to B’s motivational investment in goals mediated by A, and (2) inversely proportional to the availability of those goals to B outside of the A-B relation."

In short, an exchange partner’s dependence on the other partner/s increases with the value of the resources and decreases with the availability of alternative partner/s (Molm 1988). The motivational investment is measured by the value or importance of the resources (Emerson 1962). The mediated goals can be translated in the form of economic goals such as profits and sales volume of certain product categories. Exchange parties may assess the value by the profits or sales derived from the desired resource.

In addition, many other researchers identified comparable determinants of dependence. Brown et al. (1983, p. 55) explain that the dependence of the retailer upon a supplier is identified by the ‘essentially’ of the goods and services obtained
from the supplier are to the retailer in achieving its goals, and the 'difficulty' the retailer perceives in switching to alternative sources of supply. Frazier (1983) describes dependence as the need to maintain the channel relationship to achieve desired goals.

The magnitude of dependence between two actors in an exchange relationship determines their relative power. Thus, power is a function of dependence. French and Raven (1959) stated that the power of the supplier over the retailer depends on the sources of power that the retailer perceives the supplier to have available. El-Ansary and Stern (1972, p. 47) defined power as the ability of a channel member to control the decision variables in the marketing strategy of another member in a given channel at a different level of distribution. Power is also referred to as the ability of a supplier to get the retailer to do what he would not have done otherwise (Gaski and Nevin 1985). In a supplier-dominant market, the supplier, the strong channel member, has coercive and noncoercive sources of power that can be exercised to control the retailer (Hunt and Nevin 1974), or vice versa.

Sources of Power

Various dichotomizations of power sources have been used by researchers. As shown in Exhibit 2.9, the most commonly applied dichotomies in channel research are coercive and non-coercive, economic and non-economic, and mediated and non-mediated sources of power. Hunt and Nevin (1974) dichotomized power sources into coercive and non-coercive power, with the latter including reward, expert, referent, and legitimate power sources. Etgar (1978) used economic and non-economic classification, with the inclusion of reward and coercive sources in economic power. This research follows Hunt and Nevin's (1974) dichotomy because it is widely adopted by most studies.

Exhibit 2.8 Dichotomization of Sources of Power

<table>
<thead>
<tr>
<th>Sources of power</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coercive</td>
<td>Non-coercive</td>
</tr>
<tr>
<td>Coercion</td>
<td>Expert, legitimate, Referent, Reward</td>
</tr>
<tr>
<td></td>
<td>*(Lee 2001) termed as aggressive (coercive) and nonaggressive (noncoercive), in terms of the use of economic resources.</td>
</tr>
<tr>
<td>Economic</td>
<td>Non-economic</td>
</tr>
<tr>
<td>Coercion, Reward, Legal legitimate</td>
<td>Expert, Referent, Information, Traditional legitimate</td>
</tr>
<tr>
<td></td>
<td>(Etgar 1978; Brown et al. 1983; Lusch and Brown 1996)</td>
</tr>
<tr>
<td>Mediated</td>
<td>Non-mediated</td>
</tr>
<tr>
<td>Coercion, Reward, Legal legitimate</td>
<td>Expert, Referent, Information, Traditional legitimate</td>
</tr>
<tr>
<td></td>
<td>(Kasulis and Spekman 1980; Brown et al. 1995)</td>
</tr>
</tbody>
</table>
According to French and Raven (1959, p. 263), the sources of power are referred to as coercive, reward, expert, referent, and legitimate power sources. The sources of power in the context of retail business are defined as follows:

Coercive power is defined as the retailer's perception that the supplier has the ability to mediate punishment. That is the supplier has the ability to force compliance from the retailer. Examples of such power include slow delivery, refusal to sell, reductions in profitability, termination of exclusive territorial right, and withdrawal of important support or services (Brown et al. 1983; Gaski 1986).

Reward power is defined as the retailer's perception that the supplier has the ability to mediate rewards for it. To demonstrate reward power, the supplier may grant the retailer trade allowances or incentives, sharing advertising expenditures, sales promotion materials, and better trade terms (El-Ansary and Stern 1972; Hunt and Nevin 1974; Gaski 1986).

Expert power refers to the retailer's perception that the supplier has some special knowledge or expertness. The supplier is perceived to have expert power if the supplier holds good knowledge about its products or services or provides valuable information such as providing salesmen's training, business advice, inventory management assistance, product demonstration, and store layout advice (Brown et al. 1983; Gaski 1986).

Referent power is derived from the retailer's identification with the supplier, or the retailer's desire to be closely associated with the supplier (Brown et al. 1983, p. 56). For instance, a sporting goods store runs a Nike or Adidas flagship store to identify the prestigious brand image or reputation of a supplier (Kasulis and Spekman 1980).

Legitimate power refers to the retailer's perception that the supplier has a legitimate right to prescribe behaviour for him (French and Raven 1959, p. 263). The legitimacy involves mandating behaviour in formal contractual agreements. A large supplier is assumed to legitimately influence certain marketing policies on small retailers such as pricing policy or product returns policy.

Channel Power in the Retail Supply Chains

Social exchange theorists stress that an exchange partner's dependence on the other increases with the value of the resources the other provides, and decreases with the availability of an alternative trading party (Cook and Emerson 1978; Molm 1988). Channel members depend on one another in attaining their shared goals as each member specializes in different functions such as manufacturing, marketing, logistics, etc.

Power is derived from the attractiveness of a channel partner (Kasulis et al. 1999). The attraction of an exchange party indicates his ability to allow other parties
to gain benefits from the association with him and a desire to interact with him (Blau 1964). Specifically, the importance of the resources valued and the extent to which they are available from other sources determine the attractiveness of that channel member. In the retail supply chain, Kasulis et al. (1999, p. 322) illustrate that the power of a supplier or a retailer comes from (supplier’s) brand distinctiveness or (retailer’s) outlet distinctiveness, consumer loyalty, competitive position, and category importance. For example, selling leading international brands at the retail outlet not only attracts consumers to visit the store, but also benefits the retailer to boost its store image (Bandypadhyay and Divakar1996). Consumer loyalty is enhanced by the brand preference or outlet preference of customers. The resulting customer preference or brand choice, and selective distribution become the measures of one partner’s power over another partner (El-Ansary and Stern 1972).

**Impact of Power and Dependence**

Most previous studies on power in channel relationships have focused on the relationships between power sources and other variables such as dependence, conflict, and satisfaction. Representative studies are summarized in Exhibit 2.10. For example, in supporting the findings of Hunt and Nevin (1974), other researchers have found that the supplier’s use of coercive power sources (punishment) has a negative effect on dealer satisfaction, and the use of the non-coercive power sources (reward) increases dealer satisfaction (Lusch 1976; Wilkinson 1979; Gaski and Nevin 1985; Frazier and Summers 1986; Geyskens and Steenkamp 2000; Lee 2001; Benton and Maloni 2005).

It is notable that in assessing satisfaction, Geyskens and Steenkamp (2000) adopted a more psychosocial aspect of satisfaction, including social satisfaction which evaluates a channel partner’s personal contacts and interactions with its exchange partner, and economic satisfaction which is satisfaction with the economic outcome. According to social exchange theory, the exchange parties engaging in exchange activities are not only in pursuit of economic rewards but also of socially valued rewards such as psychological gratification and satisfaction (Molm 1997).

There are also many studies investigating the effect of the use of power sources on relationship behaviour such as commitment (Brown et al. 1995), collaboration (Skinner et al. 1992), and buyer-supplier relationships (Maloni and Benton 2000; Benton and Maloni 2005). The recent findings reported by Benton and Maloni (2005) indicated that coercive-mediated power sources (coercive and legal legitimate) have detrimental effects on supply chain buyer-supplier relationships, while non-mediated power sources (expert and referent) have positive effects on supply chain buyer-supplier relationships in the automobile industry. Skinner et al.
(1992) concluded that the supplier’s use of non-coercive power sources increases the dealer’s satisfaction and the use of coercive power sources decreases the dealer’s satisfaction. These findings concluded that the use of non-coercive power sources leads to a more satisfactory relationship, and the use of coercive power sources should be avoided.

**Exhibit 2.9 Studies of Power, Dependence, and Other Relational/Outcome Variables**

<table>
<thead>
<tr>
<th>Power relationship</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power and other relational variables</strong></td>
<td></td>
</tr>
<tr>
<td>Power-satisfaction</td>
<td>(Hunt and Nevin 1974; Wilkinson 1979; Gaski and Nevin 1985; Frazier and Summers 1986; Gaski 1986; Lee 2001)</td>
</tr>
<tr>
<td>Power-conflict-satisfaction</td>
<td>* (Geyskens and Steenkamp 2000): economic satisfaction and social satisfaction</td>
</tr>
<tr>
<td>Power-dependence</td>
<td>(El-Ansary 1975; Zhuang and Zhou 2004)</td>
</tr>
<tr>
<td>Power-dependence-conflict-satisfaction</td>
<td>(Gaski and Nevin 1985; Anderson and Narus 1990)</td>
</tr>
<tr>
<td>Power-dependence-conflict-cooperation</td>
<td>(Skinner et al. 1992)</td>
</tr>
<tr>
<td>Power-commitment</td>
<td>(Brown et al. 1995)</td>
</tr>
<tr>
<td>Power-buyer-supplier relationship</td>
<td>(Maloni and Benton 2000; Benton and Maloni 2005)</td>
</tr>
<tr>
<td><strong>Dependence and other relational/outcome variables</strong></td>
<td></td>
</tr>
<tr>
<td>Dependence-communication</td>
<td>(Anderson and Narus 1990)</td>
</tr>
<tr>
<td>Dependence-contracts</td>
<td>(Handfield and Bechtel 2002)</td>
</tr>
<tr>
<td>Dependence-cooperation</td>
<td>(Skinner et al. 1992)</td>
</tr>
<tr>
<td>Dependence-decision-making uncertainty</td>
<td>(Gao et al. 2005)</td>
</tr>
<tr>
<td>- trust</td>
<td>(Handfield and Bechtel 2002; Gao et al. 2005)</td>
</tr>
<tr>
<td>Dependence-transaction specific investment</td>
<td>(Ganesan 1994)</td>
</tr>
<tr>
<td>- environmental diversity and volatility</td>
<td></td>
</tr>
<tr>
<td>- long-term orientation</td>
<td></td>
</tr>
</tbody>
</table>

Considerable attention has been drawn to investigate the impact of an exchange partner’s dependence on relational variables such as communication (Anderson and Narus 1990), trust (Handfield and Bechtel 2002; Gao et al. 2005), decision-making uncertainty (Gao et al. 2005), and collaboration (Skinner et al. 1992). Among those studies, the research by Handfield and Bechtel (2002) related
buyer dependence on a supplier to the supplier responsiveness, which reveals the increasing importance of customer responsiveness in supply chains.

In studying inter-firm power relationships, several researchers focused on the importance of influence strategies, which are the means of communication used by a firm’s personnel in applying the firm’s power (Frazier and Summers 1986; Kim 2000). Wilkinson and Kipnis (1978) found that more powerful firms use strong and controlling means or strategies of influence such as withholding service, product or business, dictating terms, and threatening to end relationship. Young and Wilkinson (1997) examined the use of different influence tactics in relationship coordination process in four types of collaboration-competition relations. Kim (2000) reported that the use of coercive influence strategies decreases dyadic solidarity and the use of non-coercive influence strategies increases dyadic solidarity.

Lee (2001) investigated the relationships between power conflict, and satisfaction in an international joint venture supplier-Indian distributor channel. They found supplier’s use of aggressive (coercive) power leads to negative satisfaction with the relationship, and the use of non-aggressive (non-coercive) power leads to positive satisfaction with the supplier. However, in studying the power relationships between foreign brand apparel suppliers and Indian retailers, Dickson and Zhang (2004) reported that the use of coercive power by the foreign brand apparel suppliers positively affects the retailer’s economic satisfaction. In addition, they found that channel conflict had a positive effect on economic satisfaction. Indian retailers may not perceive channel conflict as negatively as westerners.

Zhuang and Zhou (2004) explored the causal relationship between dependence and power in the context of marketing channels. They found that the power of a channel member does not gain from the dependence of another channel member, instead that its relative power determines the dependence of another channel member. In other words, a more powerful party will increase the dependency of another party.

It should be noted that research in different cultures might come up with different results.

These findings in the Indian context have provided different insights into power issues in marketing channels. Maintaining harmonious relationships and avoiding conflicts between individuals and collectives are important in Indian culture. In addition, harmonious compromise and face-saving is a way to make one’s social life or business run smoothly in Indian relationship networks. The above empirical studies have provided different results between western contexts and the Indian context perhaps due to cultural differences.
The concept of power and dependence is complicated. The powerful party has coercive and non-coercive sources of power that can be used to control the weaker party. As a result, it can have great influence on channel member’s behaviors, conflict, satisfaction, and supply chain performance. It is important to bear in mind that the perception of dependence and power of one partner over the other may not be the same from both sides of a dyadic relationship in different channels of distribution.

The literature review discussed in previous sections revealed a great variety of contributions as well as some gaps in the existing relationship literature. A summarized analysis is as follows:

1. Relationship factors (such as trust, power, dependence, and collaboration), either single factor or multiple factors, have been widely studied in different context, including international joint venture (Lee 2001; Luo 2002; Boersma, Buckley and Ghauri 2003), marketing channels (Brown, Lusch and Muehling 1983; Young and Wilkinson 1989; Kumar 1996), and industrial markets (Izquierdo and Cillán 2004). These efforts contributed useful knowledge about complex and multi-dimensional nature of business relationships. However, the inter-relatedness of those relationship factors lacks consistency and integrated view in the existing marketing literature and supply chain management literature especially in retailing context. That can lead to overlooking some critical aspects and value in business relationships. The cross functions of marketing and logistics management should be kept in mind when drawing literature from different disciplines and analyzing the inter-relationships of various relationship variables. A clear comprehensive framework illustrating the links between relationship factors calls for further research.

2. The antecedents and outcomes of the relationship factors also have been vigorously investigated in the channel relationship literature (El-Ansary and Stern 1972; Frazier 1983; Brown et al. 1995). A better understanding of what elements or dimensions comprise a relationship factor and its impact on the other relationship factors or business performance helps exchange partners effectively manage their relationships. Nevertheless, there is no agreement so far as to the causal relationships among those relationship factors. The dynamism of buyer-supplier relationships in highly competitive world of retailing may not follow one-way causal direction in the relationship building process as it is a continuous rather than a static process, and the relationship factors nurture each other over time. Whether the opposite causal direction is also true in business relationships requires further investigation.
3. Relationship building has been assumed to impact or improve a firm's business performance or channel performance (Allawadi, Borin and Farris 1995; Heide and Stump 1995; Groves and Valsamakis 1998; Chadee and Zhang 2000; Luo 2002; Johnston et al. 2004; Benton and Maloni 2005). Though many researchers have discussed various performance measures (Chow, Heaver and Henriksson 1994; Beamon 1999; Gunasekaran, Patel and Tirtiroglu 2001; Gunasekaran, Patel and McGaughey 2004), guidelines as to how appropriate measures should be applied for a particular type of relationship in organized retailing context are still lacking. Therefore, the completeness and appropriateness of performance measures should be considered from time to time in order to provide valuable information for the decision maker and feedback for the improvement of ongoing relationships.

With respect to the theoretical approach, transaction cost analysis; social exchange theory, interaction theory, and resource-based theory are frequently used in buyer-supplier relationship studies. As noted in previous sections, cultural differences can influence, to some extent, the perceptions of relationship factors in different cultural contexts, and should be taken into account when studying inter-organizational relationships (Seppänen, Blomqvist and Sundqvist 2005). In addition, a combination of different theoretical approaches may help to bring more comprehensive understanding of business relationships.

Summarily, although various other relational variables pertaining to supply chain relationships exist (such as commitment, communication, and information technology), this research aimed to include the variables having greatest impact on retail supply chain performance. Each of the relationship variables included in this study has been identified in previous research as being of paramount importance to the development and maintenance of the long-term cooperative channel relationships needed in a competitive market.

2.3.2 Decision-Making Uncertainty (DMU)

When a retail store's owner makes a purchase decision for next summer, his uncertainties increase if he does not have sufficient information about how much inventory to carry, what brands or product assortments to carry in store, what styles will be popular next season, and so on. The retailer may not be able to predict the consequence (i.e., the gain or loss) of these decisions.
Several studies investigated the reduction of DMU\textsuperscript{15} through building better relationships, examining factors such as trust (Morgan and Hunt 1994; Gao et al. 2005), communication patterns (Johnson and Pharr 1997), and dependence and commitment (Gao et al. 2005) with effective supply chain management activities. These supply chain management studies have added great value for researchers and practitioners in the management of buyer-supplier relationships. However, there is still a gap in understanding how a buyer or supplier’s DMU affects the firm performance or the supply chain performance. A critical question raised is - does the reduction of a buyer or supplier’s decision-making uncertainty through relationship building lead to better supply chain performance? The researcher proposed to study this in context of retailing sector in Indian conditions.

In a dynamic market environment, many firms strive to reduce the effect of uncertainty on their purchase decision-making and its consequence on firm performance (Chen and Paulraj 2004). Researchers have investigated the reduction of decision-making uncertainty through relationship factors such as trust (Morgan and Hunt 1994; Gao et al. 2005), communication patterns (Johnson and Pharr 1997), and dependence and commitment (Gao et al. 2005). Johnson and Pharr (1997) contend one proactive approach is to manage and mitigate decision making uncertainty through building better relationships with focal exchange partners. The recent research by Gao et al. (2005) addresses the importance that suppliers can apply relationship-building practices to decrease buyer DMU and make effective decisions. They found that buyer perceived supplier dependence and buyer trust in the supplier help reduce buyer purchase DMU.

From the studies discussed above, it is evident that environmental uncertainty can influence the behaviour of channel members, or channel members can reinforce their behaviour to respond to environmental uncertainty. Although the impact of environmental uncertainty has been addressed in the marketing or management literature, incorporating performance measurement in assessing the impact of decision-making uncertainty is very limited in the supply chain literature and that too in retailing context.

A critical postulation highlights the importance of this research - what are the relationship factors that can mitigate DMU and ultimately improve the supply chain performance, and what relationship factors that can intensify DMU will

\textsuperscript{15} Duncan (1972) and Achrol and Stern (1988, p. 37) suggested that uncertainty in decision making refers to the extent to which an exchange partner: (1) has adequate information available to make key decisions, (2) can predict the decision outcomes, and (3) has confidence in making those decisions.
undermine the supply chain performance? The researcher intends this investigation in the Indian retail sector.

2.3.3 Information Sharing

Information sharing (see exhibit 2.4) refers to the access to private data in all partners' systems enabling the monitoring of the progress of products as they pass through each process in the supply chain (Simatupang and Sridharan, 2002). It is "the extent to which critical and proprietary information is communicated to one's supply chain partner" (Li et al., 2006, p. 110). Mentzer et al. (2000) mention that shared information can vary from strategic to tactical in nature. It could be pertaining to logistics, customer orders, forecasts, schedules, markets, or more. This activity covers data acquisition, processing, representation, storage, and dissemination of demand conditions, end-to-end inventory status and locations, order status, cost-related data, and performance status.

Simatupang and Sridharan (2005) brought forth some of the elements that comprise information sharing, including data acquisition, processing, storage, presentation, retrieval, and broadcasting of demand and forecast data, inventory status and locations, order status, cost-related data, and performance status. They further added that information sharing pertaining to key performance metrics and process data improves the supply chain visibility thus enabling effective decision making.

Visibility of key performance metrics and process data enables the participating members to elicit the bigger picture of the situation that takes into account important factors in making effective decisions. Effective decisions enable the chain members to address product flow issues more quickly and thereby permit more agile demand planning to take place.

The chain members are interested in the utility of information sharing rather than information for its own sake. What makes information sharing valuable to the chain members is ultimately the ability to make better decisions and to take actions on the basis of greater visibility (Davenport et al., 2001). Guiding principles are that visibility should inform action, and that action becomes visible if the chain members understand better the underlying principles that link integrated information and performance drivers. Information sharing thus generally facilitates decision synchronization through providing relevant, timely, and accurate information required to take effective decisions about supply chain planning and execution. It enables participating members to make use of integrated information to help fulfill demand more quickly with shorter order cycle times. For example, demand and
inventory visibility can be used to eliminate stock-outs by accurately replenishing hot products (Fisher, 1997).

Several criteria, such as relevancy, accuracy, timeliness, and reliability, can be used to judge the contribution of information sharing to supply chain integration. Advanced technology such as the internet can be used to convey up-to-date data about planning, product movements, workflow, costs, and performance status.

In connection with CPS in retail chains, information sharing may provide data about the progress of collaboration and performance status to CPS. CPS can use this data to evaluate and devise new targets and performance metrics that are relevant to new situations. In conjunction with incentive alignment, information sharing provides visibility about the status of incentive scores of the chain members. It also reveals the actual link between performance measures and incentives. Finally, integration of supply chain processes provides field data about product, process, and performance status.

Information sharing with trading partners enables organizations to make better decisions and to take actions on the basis of greater visibility (Davenport et al., 2001). Information shared in a supply chain is of use only if it is relevant, accurate, timely, and reliable (Simatupang and Sridharan, 2005).

In recent years, uncertainties have become a greater concern in supply chains. The direct consequences are increased inventories and the distortion of demand forecasts. Moreover, the distortion propagates through the supply chain and is amplified at each stage—the well known bullwhip effect (Lee et al., 1997). Through information sharing, the demand information flows upstream from the point of sales, while product availability information flows downstream (Lee and Whang, 2001; Yu et al., 2001) in a systematic manner. Moreover, information sharing ensures that the right information is available for the right trading partner in the right place and at the right time (Liu and Kumar, 2003).

Lau and Lee (2000) maintain that there is the reluctance on the part of organizations in the supply chain to share information with each other. Information is generally viewed as providing an advantage over competitors, and organizations resist sharing with their partners (Vokurka and Lummus, 2000) due to the fear of giving away competitive and sensitive information such as inventory levels, production schedules (Lancioni et al., 2000; Ballou et al., 2000; Croom et al., 2000).

So the fundamental questions are: what information should be shared, with whom and how it should be shared to optimize competitiveness and profitability in organized retail sector?

Research determining with which partners in a supply chain a company should share information is very limited. Raghunatan (2003) examined demand information
sharing in a supply chain comprising a manufacturer serving many retailers and analyzed the optimal number of retailers that should be involved in information sharing. He found that the supplier will more likely to include more sharing partners when demands amongst retailers are independent, as the value of information sharing will increase significantly with the increasing number of sharing partners. This study confirms Cooper et al. (1997) argument that decisions on how many retailers should be involved in information sharing depends on product characteristics. The correlation of demand amongst retailers depends on the nature of products, consumer segments, and geographical location of partners (Raghunatahan 2003). Lee, So and Tang (2000) also found that benefits of information sharing increases with the number of retailers involved when the demand processes variance are correlated over time.

The next question is which partners in each stage should be involved and what factors affect that decision. Huang and Gangopadhyay (2004) studied various degree of information sharing in a four-stages supply chain comprises customers, retailers, distributors, wholesalers, and manufactures, in which each stage comprises several players. Three scenarios are analyzed: no information sharing; partial information sharing (only 50% of trading partners in each channel involved); and full information sharing. The simulation study found that increasing degree of information sharing resulted in decreased inventory levels at wholesalers. The benefits are higher when demand is highly variable. The study concluded that parties obtain different benefits from information sharing.

Walter et al. (1999) studied a supply chain comprising a manufacturer, distribution centers and retailers that used the vendor managed inventory (VMI) program, where a supplier is responsible for replenishing retailers' inventory. The study found that the manufacturer's inventory is reduced even by low level adoption of VMI and that even non-VMI partners gain benefits. Smaros et al. (2003) studied a three levels supply chain in which the manufacturer used a combination of order data from non-VMI customers and sales data from VMI customers in its production planning. The study showed that manufacturer benefited from even a partial increase of involvement of its partners. This study only considered products with stable demand but included 21 products with different replenishment frequencies. Products with low replenishment frequency obtained more benefits with increasing information sharing. The above discussion demonstrates that information sharing can be beneficial in many circumstances.

The information in a supply chain can be classified in different ways e.g. strategic or tactical; logistical; or pertaining to consumers (Mentzer 2004). Lee and Whang (2000) discussed various types of shared information and their potential
benefits. For example, sharing order status can improve the quality of customer service, reduce payment cycles, and reduce labor cost. Sharing retail sales data can mitigate the bullwhip effect. Huang et al (2003) sorted information into six categories pertaining to product, process, resource, inventory, order, and planning.

**Exhibit 2.11 Classification of production information (Huang, Lau et al. 2003)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Product Information</th>
<th>Category</th>
<th>Product Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td></td>
<td>Resources</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Product structure</td>
<td>Order</td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td>▪ Material lead time</td>
<td></td>
<td>▪ Demand</td>
</tr>
<tr>
<td></td>
<td>▪ Lead time variance</td>
<td></td>
<td>▪ Demand variance</td>
</tr>
<tr>
<td></td>
<td>▪ Order transfer lead time</td>
<td></td>
<td>▪ Order batch size</td>
</tr>
<tr>
<td></td>
<td>▪ Process cost</td>
<td></td>
<td>▪ Order due date</td>
</tr>
<tr>
<td></td>
<td>▪ Quality</td>
<td></td>
<td>▪ Demand correlation</td>
</tr>
<tr>
<td></td>
<td>▪ Shipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Set-up cost</td>
<td>Planning</td>
<td></td>
</tr>
<tr>
<td>Inventory</td>
<td>▪ Inventory level</td>
<td></td>
<td>▪ Demand forecast</td>
</tr>
<tr>
<td></td>
<td>▪ Holding cost</td>
<td></td>
<td>▪ Order schedule</td>
</tr>
<tr>
<td></td>
<td>▪ Backlog cost</td>
<td></td>
<td>▪ Forecasting model</td>
</tr>
<tr>
<td></td>
<td>▪ Service level</td>
<td></td>
<td>▪ Time fence</td>
</tr>
</tbody>
</table>

**Exhibit 2.12 Types of shared information in the literature**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Shared Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boone et al. (2002)</td>
<td>demand, forecast</td>
</tr>
<tr>
<td>Bourland et al. (1996)</td>
<td>Demand</td>
</tr>
<tr>
<td>Cachon and Fisher (2000)</td>
<td>demand, inventory</td>
</tr>
<tr>
<td>Cachon and Lariviere (2001)</td>
<td>demand, demand forecasts</td>
</tr>
<tr>
<td>Chen (1999)</td>
<td>inventory, order</td>
</tr>
<tr>
<td>Chen et al. (2009)</td>
<td>Demand</td>
</tr>
<tr>
<td>Croson and Donohue (2003)</td>
<td>Sales</td>
</tr>
<tr>
<td>Huang and Gangopadhyay (2004)</td>
<td>Demand</td>
</tr>
<tr>
<td>Karaesman et al (2002)</td>
<td>advance order</td>
</tr>
<tr>
<td>Kulp et al (2004)</td>
<td>inventory level, warehouse, consumer info</td>
</tr>
<tr>
<td>Lau et al. (2002)</td>
<td>demand, order, inventory</td>
</tr>
<tr>
<td>Lee and Whang (1999)</td>
<td>Demand</td>
</tr>
<tr>
<td>Lee et al. (2000)</td>
<td>Demand</td>
</tr>
<tr>
<td>Mitra and Chatterjee (2004)</td>
<td>Demand</td>
</tr>
<tr>
<td>Owen and Levary (2002)</td>
<td>demand, inventory</td>
</tr>
<tr>
<td>Ozer (2003)</td>
<td>advance demand</td>
</tr>
<tr>
<td>Raghunathan (2003)</td>
<td>Demand</td>
</tr>
<tr>
<td>Smaros et al. (2003)</td>
<td>Demand</td>
</tr>
<tr>
<td>Waller et al (1999)</td>
<td>inventory level, demand</td>
</tr>
<tr>
<td>Xu et al. (2001)</td>
<td>Demand</td>
</tr>
<tr>
<td>Yu et al. (2001)</td>
<td>demand, order</td>
</tr>
<tr>
<td>Yu et al. (2002)</td>
<td>demand, order</td>
</tr>
</tbody>
</table>

The value of information sharing depends on several conditions. For example, Simchi-Levi and Zhao’s (2003) showed that demand sharing has no significant benefits for a manufacturer under tight capacity. Lee, So and Tang (2000) found that
demand information sharing has more value if demand is highly correlated over time, highly variable, or the lead time is long.

The product's characteristics also affect the value of different kinds of information. Sharing forecasts of demand of products that have high demand variability brings significant benefits (Angulo, Nachtmann et al. 2004). The relationship between trading partners also influences the selection of the type of shared information. For example, sharing production schedules with part suppliers can reduce part inventories without risking stock-outs. Sharing shipping information with logistics agents can improve customer service levels.

Information sharing arrangements are dictated by circumstances (Mentzer, Min et al. 2000). Most of the existing studies only analyze the sharing of production information, but other information for example, market and consumer information can be important (Mentzer 2004). Lee and Whang (2000) showed that sharing market knowledge can improve promotion planning. Sharing information and close coordination between retailers and manufacturers may facilitate developing new products.

The previous studies have analyzed a number of types of shared information however there is still a critical question that needs more investigation i.e. what information should be shared with supply chain partners in organized retailing context that give most benefits (see Exhibit 2.11 and 2.12)?

An attribute of information is its timeliness. Delayed transmission of information exacerbates the effects of volatility afflicting the upstream level of a supply chain (Forrester 1958). Chen (1999) examines the impact of delay of information transmission (also called information lead-times) between supply chain stages. Reducing lags in the transfer of information from downstream is highly beneficial. Bourland et al. (1996) found that timely demand information affects suppliers' inventory control policy and that sharing demand information daily can decrease suppliers' expected inventory cost especially when demand variability is high.

Another attribute of information is the level of detail or completeness of information. If the information is transmitted every week, for example, there would be a question whether data should be provided on daily basis or aggregated per week. It is obvious that aggregate data has different variance than daily data and this could affect the operating decision of companies in a supply chain. There is possibility that some companies might not want to share their detail data with partners, fearing that the data could leak to their competitors. As a result, those companies may only provide aggregated data. For example, they might share demand data on category
level of products but not provide detail of size, color or other product attributes. On the other hand, suppliers might need those detailed information in order to predict the various trends of each type of product. Furthermore, providing comprehensive data might weaken a company's negotiating position.

Numerous studies analyze the value of information sharing in a supply chain and factors that affect the value. The overall objective of information sharing is to achieve efficiency in the whole supply chain. However, it is apparent that different parties obtain different returns from information sharing (see Exhibit 2.13). Ideally, all members of a supply chain should share the benefits equally but members with monopoly power may obtain most of the benefits. Under intense competitions, savings may flow through to customers.

The unbalanced benefits of information sharing can discourage information sharing. Most studies in organized retailing context on the value of information sharing suggest that companies who gain most benefits give their trading partners incentives in various forms such as lower wholesale prices, flexible payment terms, etc (Bourland, Powell et al. 1996; Yu, Yan et al. 2001; Mitra and Chatterjee 2004). There are few studies investigating how to align benefits between parties. Raghunathan (2003) suggests that manufacturers offer subsidies to retailers and incorporate the amount of subsidies into calculating the optimal number of retailers. Therefore, there is a strong need for more investigation on how to share the benefits of information sharing amongst partners.

Exhibit 2.13 The value of information sharing and its allocation in the literature

<table>
<thead>
<tr>
<th>Authors</th>
<th>Benefits and allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lau et al (2002)</td>
<td>Inventory reduction</td>
</tr>
<tr>
<td></td>
<td>Not all partners obtain benefits</td>
</tr>
<tr>
<td>Mitra and Catterjee (2004)</td>
<td>Only the supplier gain benefits</td>
</tr>
<tr>
<td>Waller et al. (1999)</td>
<td>All parties benefit</td>
</tr>
<tr>
<td></td>
<td>Non-sharing partners also gain benefit</td>
</tr>
<tr>
<td>Huang and Gangopadhyay (2004)</td>
<td>Not much benefits for retailers</td>
</tr>
<tr>
<td>Cachon and Fisher (2000)</td>
<td>Not significant benefits from information sharing</td>
</tr>
<tr>
<td>Yu et al. (2001)</td>
<td>Manufacturer gain more benefits</td>
</tr>
<tr>
<td>Lee et al. (2000)</td>
<td>Only manufacturer benefits</td>
</tr>
<tr>
<td>Smaros et al. (2003)</td>
<td>Manufacturer gain benefit</td>
</tr>
<tr>
<td>Chen et al. (2000)</td>
<td>Reduce but not eliminate the bullwhip effect</td>
</tr>
<tr>
<td>Bourland et al. (1996)</td>
<td>Supplier gains more benefits</td>
</tr>
</tbody>
</table>

Realizing the benefits of information sharing in supply chain management depends on companies' ability to utilize shared information in their business processes. Kulp et al. (2004) did a survey to investigate the impact of information sharing on companies' performance. They found that the highest profit margin companies are not simply exchanging information but they combine it with close
collaboration. Lee and Wang (2000) argue that information sharing is only enabler for achieving supply chain efficiency.

To take full advantages of information sharing, some significant changes in organization need to be implemented once information sharing in place. Retailing companies should move toward collaboration with their partners to achieve common goals of supply chain efficiency that is built based on high level of trust between companies. Lee (2000) argues that collaboration and coordination can be achieved through exchanging decision rights, work and resources. Exchanging decision rights, such as in a VMI program, should not be considered merely to alleviate the bullwhip effects or to simply shift costs and responsibility to other parties, rather it should be noted that other parties are in the best position to accomplish such decisions. Work realignment is redistribution of physical activities amongst members of supply chain and may lead to reduce total supply chain costs. Work realignment can only be effective if information sharing is in place. This work realignment needs a cultural shift in organization to treat supply chain partners as if they are parts of organizations.

Mentzer (2004) further argues that Information sharing will not bring significant benefits if people in organization still persist with past behaviors, exemplified by functional silos thinking. These considerations and the potential benefits suggest the following research questions:

- What are the barriers of implementation of information sharing in retailing companies?
- What are the critical success factors?
- How can retailing companies bring the information sharing into practice?

2.3.3 Decision Synchronization

Decision synchronization (see exhibit 2.4) can be defined as the extent to which the chain members in a supply chain are able to orchestrate critical decisions at planning and execution levels for optimizing supply chain profitability (Simatupang et al., 2002). The activity covers devising joint decision-making processes including re-allocating decision rights in order to synchronize supply chain planning and execution that seeks to match demand with supply. The way to judge effective decision synchronization is based on its effects on accurate response towards fulfilling customer demands (i.e. logistical benefits) and supply chain profitability (i.e. commercial benefits) (Corbett et al., 1999). Face-to-face meetings and virtual discussion forums to take certain decisions are examples of ways to implement decision synchronization.
The importance of decision synchronization lies in the fact that the chain members have different decision rights and expertise about supply chain operations. For example, a retailer may have the decision right to determine order quantity but not order delivery. Very often the chain members have conflicting criteria in making decisions resulting in solutions that are less than optimum for the overall chain (Lee et al., 1997). The chain members thus need to coordinate critical decisions that affect the way they achieve better performance. The use of joint decisions depends on the incremental sales that can be realized and the significant amounts of inventory costs that can be reduced from this joint decision making. Joint decisions may include sales and order forecasts, inventory, replenishment, order placement, order delivery, customer service level, and pricing. For example, VMI provides the supplier with decision rights to determine the frequency and quantity of orders that need to be delivered to the retailer's distribution center. This scheme enables the supplier to match supply with demand from the supply-chain-wide perspective and thereby improves profits for both members.

The interaction of decision synchronization with other features of the framework (Exhibit 2.4) is very important as it enables the chain members to orchestrate their decisions that contribute to the achievement of overall performance. Decision synchronization provides feedback to CPS concerning how performance metrics guide the chain members to make effective decisions. In relation to information sharing, decision synchronization aids information sharing to identify what kind of relevant data should be collected and transferred— and in what format— to the decision makers. In supporting incentive alignment, decision synchronization provides justification for incentive alignment to devise appropriate incentive schemes because different chain members are responsible for different levels of decision making. Finally, decision synchronization helps the chain members to carry out productive actions associated with integrated supply chain processes such as replenishment, transportation, and customer service.

2.14 Incentive Alignment

Incentive alignment refers to the process of sharing costs, risks, and benefits among the participating members (Simatupang and Sridharan, 2002). This scheme motivates the members to act in a manner consistent with their mutual strategic objectives, including making decisions that are optimal for the overall supply chain and revealing truthful private information. It covers calculating costs, risks, and benefits as well as formulating incentive schemes such as pay-for-performance and pay-for-effort.
The contribution of incentive alignment can be judged based on compensation fairness and self-enforcement. Compensation fairness ensures that aligned incentives motivate the chain members to share equitably the loads and benefits that result from collaborative efforts. An effective incentive scheme means that the chain members are self-enforcing for aligning their individual decisions with the mutual objective of improving total profits. Expert systems, activity-based costing, and web-based technology can be used to trace, calculate, and display incentive scores (Kaplan and Narayanan, 2001; Simatupang and Sridharan, 2002).

The theory underlying incentive alignment assumes that an individual chain member tends to act in a certain way based on the expectation that the act will result in a mutual benefit and on the attractiveness of that benefit to individual chain members (Simatupang et al., 2002). An appropriate incentive scheme can be devised in a number of ways (Simatupang and Sridharan, 2002). Pay-for-effort is a scheme that links payment and effort. This assumes that rewarding effort would motivate the individual member to exert a given amount of effort which relates to a certain level of performance. Pay-for-performance is a scheme that links payment and performance. This scheme assumes that rewarding performance will motivate the individual chain member to achieve a particular level of performance. Equitable incentive is sharing the equitable load and benefits which result from exerting a certain amount of collaborative effort. The chain members accept the importance of the potential rewards that can be obtained from collaboration although costs need to be shared.

The interaction of incentive alignment with other features is very significant as it motivates the chain members to align their actions to the mutual purpose of collaboration that would also enhance their individual profitability. Incentive alignment links performance scoreboards from CPS to incentives. The clearer the linkage between performance and incentives, the more effectively the given incentives are able to motivate the desired behavior. Information sharing is required to signal the chain members that incentives are available, timely, equitable, and performance-contingent. In conjunction with decision synchronization, incentive alignment provides incentives to motivate the chain members to make effective decisions that reinforce the desired level of performance.

2.15 Integrated Supply-Chain Processes

Integrated supply chain processes refer to the extent to which the chain members design efficient supply chain processes that deliver products to end customers in a timely manner at lower costs. Explicit description of this feature helps the chain members synchronize the entire sequence of integrated work activities required to deliver products that fulfill customer needs (Croxton et al., 2001). The
supply chain processes need to be as flexible as possible in order to respond to the variety of customer requirements at minimum costs with respect to supply capacity. To create flexibility, the chain members can redesign the distribution system, product, production process, and inventory management to be cost effective and flexible to match supply with different conditions of customer demand (Fisher, 1997).

In relation to other features, the integrated processes aim to enable the chain members to achieve the key performance indicators stated in CPS. The chain members synchronize their decisions to create effective supply chain processes that lead to better performance and reliability. Activity costs and non-financial performance metrics of integrated processes are important inputs for incentive alignment. Finally, integrated processes provide visibility to information sharing on process status enabling easy detection and correction of problems.

2.16 SCM - Performance in Retailing

Supply chain management (SCM) has become the predominant management focus and the source of competitive advantage for many retailing firms. It has been claimed that performance measurement is vital to achieving the advantages of SCM (Chen and Pauraj 2004). The performance measurement systems should be linked to the practice of supply chain management so that managers are able to evaluate how well the supply chain is performing (Brewer and Speh 2000) and to manage their supply chains effectively (Lambert, Cooper and Pagh 1998). A number of studies have suggested that performance measurement systems can enhance the buyer-supplier relationship (Heide and Stump 1995; Harland 1996; O'Toole and Donaldson 2002).

The literature depicts SCM practices from different perspectives with a common goal of improving organizational performance. In reviewing and consolidating the literature, three distinct dimensions of SCM practice that are perceived to lead to supply chain performance, have been identified. These are strategic supplier partnership, customer relationship, and information sharing. Exhibit 2.17 lists the three dimensions of SCM practices along with their definitions and supporting literature.

Hausman (2000, p. 1) refers to supply chain performance as "the extended supply chain's activities in meeting end-customer requirements, including product availability, on-time delivery, and all the necessary inventory and capacity in the supply chain to deliver that performance in a responsive manner."

The objectives of performance measurement are to (1) improve the efficiency and effectiveness of a supply chain (2) capture the pertinent aspects of company performance, and (3) provide the management with the feedback and information...
necessary for decision making and controls (Beamon 1999; Holmberg 2000; Gunasekaran et al. 2004).

### Exhibit 2.17 Three dimensions of SCM practices

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Definitions</th>
<th>Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Supplier</td>
<td>&quot;The long-term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits&quot; (Li et al., 2006, p. 109)</td>
<td></td>
</tr>
<tr>
<td>Partnership</td>
<td></td>
<td>Li et al., 2005; Gunasekaran et al., 2001; Balsmeier and Voisin, 1996; Monczka et al., 1998; Noble, 1997; Stuart, 1997; Lamming, 1993; Sheridan, 1998; Tan et al., 2002</td>
</tr>
<tr>
<td>Customer Relationship</td>
<td>&quot;The entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction&quot; (Li et al., 2006, p. 109)</td>
<td>Li et al., 2005; Moberg et al., 2002; Aggarwal, 1997; Claycomb et al., 1999; Tan et al., 1998; Wines, 1996; Noble, 1997; Magretta, 1998, Day, 2000</td>
</tr>
<tr>
<td>Information Sharing</td>
<td>&quot;The extent to which critical and proprietary information is communicated to one's supply chain partner&quot; (Li et al., 2006, p. 110)</td>
<td>Li et al., 2005; Monczka et al., 1998; Mentzer et al., 2000b; Stein and Sweat, 1998, Yu et al., 2001; Towill, 1997; Balsmeier and Voisin, 1996; Jones, 1998; Lalonde, 1998; Vokurka and Lummus, 2000; Lancioni et al., 2000; Ballou et al., 2000</td>
</tr>
</tbody>
</table>

To determine what performance measures should be evaluated for the supply chain in retailing firms, the question why supply chain performance is needed should be addressed first. Several factors trigger the retailing firm’s need for the performance measurement, including:

- Increasing competition which arises from greater customer expectations for cost reductions and value-added products or services (Neely 1999). The need to minimize costs and increase profitability requires more efficient performance measurement (Gunasekaran et al. 2004).
- The need to differentiate firms from other competitors and gain their competitive advantage (Lambert and Pohlen 2001). Many companies strive to find specific areas to increase their competitiveness and competency for differentiation.
- Competition today is no longer simply company to company, but rather, supply chain to supply chain. The focus of supply chain performance measurement should go beyond firm focus (Lambert and Pohlen 2001). Aligning the organizational goals with the supply chain goals is vital to the overall
performance success of the supply chain.

Unbalanced sets of or one-dimensional performance measures can lead to a distorted picture of the performance of a firm (Hausman 2000; Gunasekaran et al. 2001). Some companies focus on financial performance measures and others focus on operational measures. As some researchers have pointed out, narrowly defined performance measures are unable to provide supply chain members with a precise picture of the performance of the entire supply chain, or identify potential opportunities of improving firm competitiveness and customer service and value (Beamon 1999; Lambert and Pohlen 2001). Therefore, a clear picture of the performance across the entire retail supply chain is required for successful supply chain management.

Selecting the appropriate performance measures is critical for the analysis of supply chain performance in order to achieve the supply chain goals (Beamon 1999; Gunasekaran et al. 2001; Lambert and Pohlen 2001). Gunasekaran et al. (2001) developed a framework for measuring performance at the strategic, tactical and operational level, and the metrics are distinguished into financial and non-financial measures. Beamon (1999) maintained that a supply chain measurement system should include three types of performance measures: resource measures (generally cost), output measures (generally customer service), and flexibility (generally responsiveness). Due to the complexity of the supply chains in retailing, the metrics design and the focus of performance measures may vary from one firm to another in practice.

Financial performance, measuring a firm's economic outcomes, is the measure most frequently included in business models. Besides financial performance measures, a growing literature suggests that non-financial performance measures are important to capture a broader conceptualization and a more effective estimate of business performance (Lambert and Pohlen 2001; O'Toole and Donaldson 2002; Chen and Paulraj 2004; Gunasekaran et al. 2004). Gunasekaran et al. (2004) further stressed that non-financial measures cannot be neglected when evaluating the competitiveness of a firm. Key measures included in both types of performance measurements are discussed below:

2.17 Financial performance

Financial performance is a common measure of business performance and indicates the attainment of the economic goals of the firm (Chen and Paulraj 2004). Financial performance measures indicate whether the company's strategy, implementation, and execution have reached the bottom-line improvement (Kaplan and Norton 1992). Such measurements are important for management decisions and
external reporting. The most frequently used indicators include sales growth, profit margin, return on investment (ROI), inventory turnover, cash flow, etc.

Profit margin shows the net income generated by each dollar of sales. Profit is the goal of every company for survival. Cash flow provides information about a firm’s cash receipts and cash payments during a period of business operation. Lusch and Brown (1996), and Siguaw et al. (1998) used profit margin and cash flow to assess a firm’s financial outcome. Inventory turnover, which indicates the number of times that a company sells its inventory during the year, is a common indicator of evaluating inventory performance, efficient buying practice, and inventory management. A higher inventory turnover ratio indicates the product sells well. Inventory is an important supply chain driver because a buyer or supplier’s inventory decision can considerably influence the supply chain’s efficiency and responsiveness (Chopra and Meindl 2001).

2.18 Non-financial performance

Uncertainty in a competitive environment highlights the importance of flexibility (Vickery, Calantone and Dröge 1999; Dreyer and Grøhaug 2004). Moreover, a focus on customer service enables firms to gain competitive advantage and to differentiate their firm from other competitors (Ellram et al. 1999). The non-financial performance measurement should reflect the operational efficiency of the supply chain in terms of supply flexibility and level of customer service in retailing firms.

2.18.1 Supply flexibility

Noordewier et al. (1990) state that supply flexibility reflects the willingness of the supplier to make changes to accommodate the customer’s changing needs. Beamon (1999) believes flexibility should show how well the supply chain system reacts to uncertainty and accommodates demand variation, such as seasonality, urgent orders, and special order. Several researchers have indicated that flexibility is a key measure of supply chain performance (Suarez, Cusumano and Fine 1991; Vickery et al. 1999). On reviewing the research in supply chain management, marketing and operational management, the key attributes of flexibility in retail industry encompass such measures as volume flexibility, variety flexibility, delivery flexibility, price flexibility, and returns policy flexibility. These measures are discussed in turn below:

- Volume flexibility reveals a firm’s ability to rapidly adjust production capacity in response to changes in customer demand (Vickery et al. 1999). Product demand from consumers can fluctuate for various reasons such as sales promotion, special events, etc.
- Variety flexibility refers to a small manufacturing lot size, flexible material requirements and a wide range of product output without extra costs (Gunasekaran et al. 2004). Retailing is a precarious business. Heavy stock-keeping units associated with variety of sizes, colors and styles for products such as apparel, or grocery or may be footwear are prevalent phenomena at retail level. To satisfy consumer demand with a minimum level of inventory, retailers now tend to place small order quantities and receive frequent deliveries. In turn, suppliers also have to be flexibly responsive to accommodate retailers’ requirements.

- Delivery flexibility reflects the capability of a firm to change its planned delivery schedule to accommodate unexpected orders (Beamon 1999). Increasing customer expectations of rapid delivery demands the seller’s delivery operations to be flexible to satisfy different customer requirements.

- Flexible pricing indicates the ability of a firm to accommodate customer requests for alternative pricing, and it involves cost savings to the customer (Bowersox, Closs and Cooper 2002). The order size usually determines the extent of quantity discounts, which are the incentives for customers to increase order size or business volume.

- Return policies are considered as a way to improve the efficiency of the channel to the participants’ mutual benefit (Tsay 2001). The consumer expects to return unsatisfactory products to retailer for refund or credit, while the retailer desires to return unsold products to the supplier at the end of season.

Christopher and Towill (2002) stressed that agility represents the ability of the supply chain to respond promptly to changing market demand, and to accommodate change in volume, variety or mix. The retailer or the supplier possessing flexible ability to react to changes has great influence on the performance of the supply chain in terms of financial performance and customer service (Vickery et al. 1999; Dreyer and Grøshaug 2004).

2.18.2 Level of Customer service

Coyle et al. (2002, p. 96) defined customer service as “a process for providing competitive advantage and adding benefits to the supply chain in order to maximize the total value of the ultimate customer.” Ellram et al. (1999, p. 477) view customer service as “a process for providing significant value-added benefits to the supply chain in a cost-effective way.” These researchers stressed that customer service adds value to the supply chain. The essence of customer service in supply chain management is
to provide the customer with the right product, in the right quantity, at the right time, and in the right place.

The increased pressure of retail competition has shifted retailers’ attention to improving customer service in addition to better inventory management. Thus, nowadays customer service has become a competitive differentiator for retailers (Ellram et al. 1999). Sabath (1995) suggests that service measurements should be implemented between each stage of the supply chain to monitor supply chain performance and achieve efficiency and growth. Hausman (2000) mentioned that customer service is used to measure how efficiently the suppliers serve the retailers.

The typical measures for customer service at retail level include on-time order fill rate, product quality, customer satisfaction, etc., and are described as follows:

- On-time order fill combines the performance of delivery reliability and product availability. From the retailer’s perspective, product availability is considered as an important indicator of customer service (Waller, Johnson and Davis 1999; Coyle et al. 2002). Chopra and Meindl (2001) point out that the level of product availability is a critical element reflecting a supply chain’s responsiveness. A high level of product availability is usually required for the assortment of colours, sizes, and styles in apparel and footwear retailing. When a consumer comes to a store to look for his or her desired brand, the unavailability of the product switches the consumer to another competitor. As a consequence, lost sales and lower customer service occur.

- Product quality refers to the consistency of the manufactured product and whether customer requirements are met. The quality of the product provided by the suppliers reflects the image and value of a brand (Chaudhuri and Holbrook 2001). Wisner and Tan (2000) consider that product quality is a criterion of supplier performance, and Tan et al. (1999) stress that quality has a positive impact on growth and return on asset.

- Customer satisfaction refers to a customer’s expectations of a supplier’s performance being met or exceeded, and is a key indicator to assess supply chain performance (Lee and Billington 1992). Harland (1996) proposed that a service-based indicator such as customer satisfaction is crucial to measure long-term relationship performance. Gunasekaran (2001) suggested that customer satisfaction should be tied into effective performance measurement. To maximize the profitability and efficiency of increasing competitive shelf-space, providing high levels of customer service to satisfy customers is prominent for both retailer and supplier in competitive retail business.

Exhibit 2.18 provides a summary of the performance measures essential to the retail supply chains.
## Exhibit 2.18 Measures of performance pertinent to retail SC

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Description</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales growth rate</td>
<td>The percent change in annual sales as compared to the same period on; year</td>
<td>(Lusch and Brown 1996; Siguaw et al. 1995: Ambler. Styles and Xiucum 1999: Tan et al 1990; Jack and Raturi 2002)</td>
</tr>
<tr>
<td>Profit</td>
<td>Total revenue less expenses</td>
<td>(Lusch and Brown 1996; Siguaw et al. 1998; Liu and Wang 2000)</td>
</tr>
<tr>
<td>Inventory turnover</td>
<td>Measure of the number of times that a company sells its inventory dining the year</td>
<td>(Noordewier et al. 1990)</td>
</tr>
<tr>
<td>Cash flow</td>
<td>The net amount of money received in a certain period</td>
<td>(Lusch and Brown 1996; Siguaw et al. 1998)</td>
</tr>
<tr>
<td><strong>Non-financial Performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivery flexibility</td>
<td>The ability to change planned delivery schedule to accommodate unexpected orders</td>
<td>(Stewart 1905: Groves and Valsamakis 1998; Gunasekaran et al. 2001)</td>
</tr>
<tr>
<td>Volume flexibility</td>
<td>The ability to respond to changes in order volume</td>
<td>(Stewart 1995; Vickery et al. 1999. Jack and Raturi 2001: Chen and Paulraj 2004a)</td>
</tr>
<tr>
<td>Variety flexibility</td>
<td>The ability to provide the variety of products</td>
<td>(Beamon 1999)</td>
</tr>
<tr>
<td>Price flexibility</td>
<td>The ability to offer discounts for order quantity</td>
<td>(Gassenheimer, Sterling and Robicheaux 1996; Kim 2000)</td>
</tr>
<tr>
<td>Product returns</td>
<td>The ability to take back unsatisfied or unsold products</td>
<td>(Kim 2000)</td>
</tr>
<tr>
<td><strong>Customer Service</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On time order fill</td>
<td>Order is delivered on-time and is filled completely</td>
<td>(Gunasekaran et al. 2004)</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>Customer's expectations of a supplier's performance are met or exceeded.</td>
<td>(Anderson and Narus 1990; Skinner et al. 1992; Cannon and Perreault 1999: Liu and Wang)</td>
</tr>
</tbody>
</table>

Performance of the retailing organizations – supermarkets and departmental stores has been measured in this dissertation.

### 2.19 Importance of Supply Chain and activities in Retailing

During the last two decades a trend towards integration and collaboration rather than arm's-length agreements between suppliers, manufacturers, warehousing centers, distributors, and retailers especially in a retail chain has been recognized by researchers as well as business practitioners. Companies participating in the same
supply chain identify tradeoffs with their adjacent customers and suppliers and have started to realize the importance of integration in the chain in order to focus on what is offered to the end customer in terms of cost and service. Excellence within the own company is not good enough anymore; there is also a need for external excellence in the whole supply chain.

In the new global era successful firms are those that accurately anticipate market trends and quickly respond to changing customer needs (Stalk et al., 1992). According to Towill and Christopher (2002), the end customer in the marketplace determines the success or failure of supply chains. They further state that “getting the right product, at the right price, at the right time to the consumer is not only the linchpin to competitive success but also the key to survival” (p. 299). Chase et al. (2000) contend that in the new global era companies are forced to find flexible ways to meet customer demand. The companies these days focus on optimizing their core activities so as to maximize the speed of response to customer demand. With increasingly sophisticated customer demand (product variety and customization) (Yang and Burns, 2003), and recent events of supply disruptions (Lee, 2004; Christopher and Peck, 2004; Gosain et al., 2004), supply chains have to be responsive to constantly changing market and business environment. It is thus incumbent on managers and researchers to strive for a better understanding of the responsiveness construct.

Today's highly competitive environment in which the manufacturing firms operate is characterized by growing world competition and increasingly demanding customers (Rich and Hines, 1997). Sparks and Fernie (1998) and Jones (2002) state that these dynamics are especially observed in the fashion and clothing retail industry (as cited in Storey et al., 2005, p. 242). Further, as the new competitive environment changes to more global, technologically oriented and customer driven, as product life cycles shrink and new products get introduced rapidly, as customers continually demand higher quality, faster response, and greater reliability of products and services (D’ Souza, 2002), the new world market demands a more customer responsive behavior by companies.

Womack and Jones (1996) argue that these pressures have fueled a continuous change process within organizations, impacting all the areas of a business, from rapid technological changes, to a much shortened product life cycle. They further state that since the late 1990s change and uncertainty surrounding manufacturing organizations and their supply chains grew. Firms have responded with innovative products and improved manufacturing processes to manufacture products. Sabath (1998) argues that supply chains need to be managed in a way that enables quick response, so as to cope with volatile demand. The underlying
factor is the need to focus on time, flexibility, and speed of response of the supply chain to succeed in this increasingly global marketplace thereby creating competitive advantage for the firm (Stalk and Hout, 1990; Vokurka and O'Leary-Kelly, 2000; D'Souza and Williams, 2000; Suarez et al., 1995; Duclos et al., 2003; Gattorna, 1998; Pine, 1993; Goldman et al., 1995; Christopher, 1998).

Vokurka and Fliedner (1998) suggest that this new environment calls for organizations to be more responsive to customer needs. Supply chain flexibility refers to the ability of the supply chain to adapt to internal or external influences, whereas supply chain responsiveness is the ability of the supply chain to rapidly address (speed combined with flexibility) changes and requests in the marketplace. Thus modern supply chains are expected to respond rapidly, effectively, and efficiently to customer demand (Towill, 1996; Duclos et al., 2003) so as to create competitive advantage in terms of increased quality, lower costs, reduced time to market, and product innovation (Henke et al., 1993; Aquilano et al., 1995). Narasimhan and Das (1999) concur by proposing that in the late 20th century, firms in the pursuit of competitive differentiation consider cost and quality as market entry qualifiers, whereas responsiveness and lean manufacturing are considered as order winners.

This research focuses on as to how the retail companies have been benefited using the supply chain management.

**Identification of Areas For Research**

This Literature Review has identified an abundance of supply chain factors that can create benefits for a retail company. However, several gaps were noticed and these present opportunities. Exhibit 2.19, summarizes gaps in the literature, and shows the framework used to identify areas for further research.
Exhibit 2.19 Development of a Conceptual framework to identify an area for further research

A review of supply chain techniques & strategies
- Historic & Current

Emerging Concepts & Trends in supply chain techniques

SCM factors & techniques
- Practices in business sector
- Practices among the leaders

Gaps in SCM literature:
- Importance & performance of SC factors
- Critical success factors in SCM
- SC factors and their relationship to customer needs
- SCM's impact on business results

SCM as practiced in retailing companies

Performance, Benefits and Needs

- What are the SCM practices adopted by the retailing companies?
- What are the benefits of SCM in retailing companies?
- Are there differences between important SCM factors at various retailing companies?
- What are the critical success factors in SCM amongst retailing companies?
- What are the information flow patterns in the supply chain, the synergy and integration in supply chain partners for successful relationships?
- Investigation of retailer-supplier relationships, decision-making uncertainty (DMU), and supply chain performance
- Evaluation of the role of Information Technology for an efficient and effective SCM

Customers of retailing companies

Focus of Research Topic