

CHAPTER III

SUPPLY CHAIN MANAGEMENT : A LITERATURE REVIEW

3.0 Introduction

In this chapter, an attempt has been made to present the survey of literature pertaining to the supply chain management published across the world over. Various aspects of SCM like conceptual issues, need and importance, various supply chains, problems and challenges of supply chain, technological imperatives of supply chain and the like.

It has been universally acknowledged that no work can be meaningfully conceived and soundly accomplished without critical studying -what already exist in relation to it, in the form of general literature and in the shape of outcomes of specific studies. It is the study of already established knowledge pertaining to the area that enables us to perceive clearly what is already lighted up in that area and what still remains enveloped in darkness. Once we come to know the lighted up and dark portion of an area and life, we can than proceed logically, purposefully, provided we have the necessary ability and will change any segment of its dark portion into a real knowledge.

Review of literature helps to expand the present problem to enable us to see its importance and to relate it to many other studies. It helps to expand the present problem to enable us to see its importance and to relate it to many other studies. In fact this is the real purpose of the review of related literature. Through the review of existing research, one can locate and define his problem clearly. Review help to understand previous problem and in writing of this review, help me to see how the problem is important and is going to fit into a wider pattern of universalizing the results of present study. Apart from the above consideration, the review of literature goes a long way in building up and accumulating knowledge over a period of time through the reflection of primarily empirical studies. Whatever may be the mode of building up knowledge , it is invariably realized that no one can embark upon a new venture in any area of life without critically acquainting himself with-what already exists in the form of knowledge in that area. Needless to say, the study of related literature goes a long way in equipping the research with these understandings and knowledge which is necessarily needed to put one's own problem in a proper perspective and which are essential for a valid interpretation of the findings of one's own research efforts.

3.1 Concept , Need and Importance

The concept of supply chain management is ubiquitous today. There are various ways to look at supply chain. One can say that it starts from the raw material vendor and ends with the customer; thus, it includes purchasing, marketing and even consumer buying the product. Therefore all the processes involved in the entire spectrum from demand generation to demand satisfaction can be called as supply chain management. Today, in some advanced companies supply chain extend right from the vendor procuring his raw material to the point of sale where the last sale of the product takes place. This implies that there is transparency and information flow in the entire chain resulting in appropriate action at each point. This action by each entity contributes to the smooth functioning of supply chain.

In some companies supply chain could only be internal that is across the manufacturing facilities to company owned depots. One can always choose a part of the supply chain that is most relevant and focus resources to achieve increased productivity.

The objective of every supply chain should be to maximize the overall value generated. The value a supply chain generates is the difference between what the final product is worth to the

customer and the costs the supply chain incurs in filling the customer's request. For most commercial supply chains, value will be strongly correlated with supply chain profitability (also known as supply chain surplus), the difference between the revenue generated from the customer and the overall cost across the supply chain.

Conceptually, "A supply chain is the set of entities that collectively manufactures a product and sells it to an endpoint." The ultimate beginning point is where raw materials are being extracted and the end point would be where goods and services are being consumed, or perhaps even recycled. However, this view is extremely comprehensive and obviously very difficult to put into a practical context. Therefore, the business view on supply chains is somewhat arbitrary, leaving managers to decide their own boundaries of the supply chain. The alignment of firms is in the literature alternating called a supply chain, a demand chain, a value chain, or a marketing channel.

3.1.2.Purpose Of Supply Chain

The work in a supply chain includes the performance of label marketing flows. Nine generic flows between channel members are identified. Some of the flows move forward through the

channel (physical, ownership, promotion), some move backwards (ordering and payment), whereas other flows move in both directions (negotiation, financing, risking, information). Figure 3.1 suggest the functional flow in Marketing Channel.

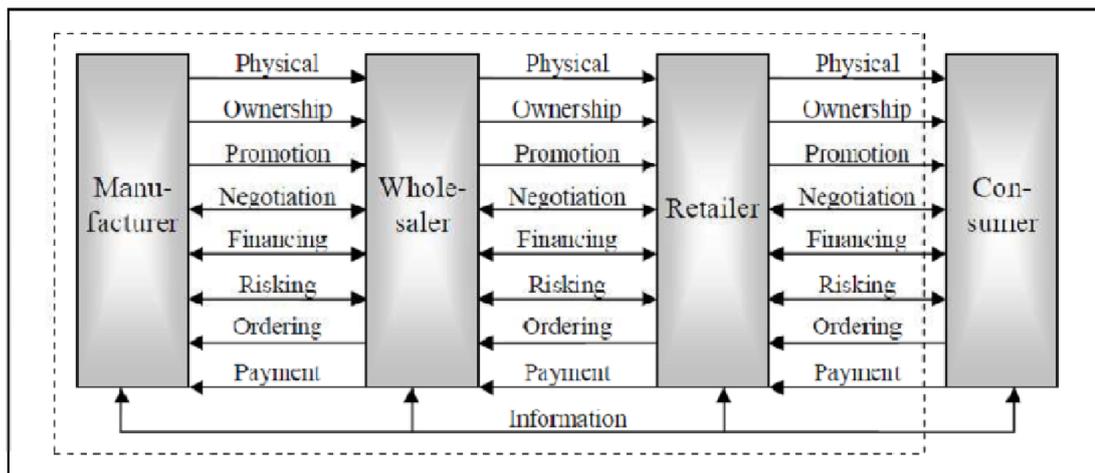


Figure 3.1 : Functional Flow in Marketing Channel

The actual term SCM was introduced by consultants in the early 1980s, and picked up by academics at the end of that decade. Since then, the confusion around the two terms SCM and logistics has been immense; some even seem to use the terms as synonyms, and one can wonder what the differences really are. Consider logistics, which they define as “the management of the flow of physical material”, to have metamorphosed into the concept of SCM which, in turn, has come to include every element of the supply chain. Christopher has a similar understanding, also explaining the concept of SCM to be an extension of the logic

of logistics. Logistics Management defines logistics management as:

“That part of the supply chain process that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information from the point of-origin to the point of consumption in order to meet customers’ requirements”. The roots from logistics are obvious. Still, SCM can be considered more extensive than logistics management as it attempts to integrate not only logistical activities, such as material, value, and information flows, but all key business processes that companies perform across the supply chain. SCM integrates supply and demand management within and across companies and coordinate processes and activities across functions such as product design, manufacturing, marketing, and sales. Advocates definitely regard SCM to be more than a new name for logistics. Implementation of SCM involves identifying important supply chain members with whom it is critical to link, what processes need to be linked to each of these members, and what type or level of integration to apply for each process link. Process integration should aim at increasing total process efficiency and effectiveness across all members of the supply chain, not only across functions within single companies.

3.2.1 Ernst & Whinney (1987)-According to their survey SCM of Manufacturing units and service industry relies to a great extent on proper logistics support. Logistics is the process of planning, implementing and controlling the efficient, cost effective flow and storage of raw materials.

This study seeks to investigate the following research questions: a) What are the underlying critical dimensions of SCM? Does a positive relationship exist between SCM dimensions amongst each other and SCM performance measures?

b) What specific dimensions of SCM performance are directly related amongst each other and to organizational performance measures?

Their study seeks to systematically address this issue. The study seeks more investigation into the relationship of strategic purchasing with supply management concepts (Chen & Paulraj, 2004a; Cousins, 2005; Dyer & Singh, 1988). In addition, as observed by Styles and Amber (2000), there is a need to study the linkage between supply chain relationships and supply chain performance. For instance, as mentioned by Beamon (1999), flaws existed with supply chain models using only one supply chain performance measure. Models using a single performance measure

can indicate a lack of attention to other performance measures (Beamon, 1999).

Purchasing has been viewed as an essential component of supply chain management. As mentioned previously, literature classifies purchasing into two categories: strategic and non-strategic (Murray, 2001). This study supports the view that strategic purchasing would enhance supply chain performance. The positive relationship between strategic purchasing and long-term relationship and concurrent engineering provide interesting perspectives for managers. Long-term relationships have long been identified as important factors in the success of SCM (Jayaram, Kannan & Tan, 2004; Moberg & Speh, 2003).

The relationship between strategic purchasing and concurrent engineering has not been explored either conceptually or empirically. With the increasing popularity of concurrent engineering and the integration of different functional units in firms this dimension of SCM needs further investigation. The current study is in line with the viewpoint proposed by Kopczak and Johnson, 2003, that SCM enablers are important for improving business performance of an organization; however, managers should not

only focus on enablers but also on the business problems such as effective implementation of SCM strategy.

The linkage between SCM dimensions and SCM performance reveal significant findings. The positive relationships between concurrent engineering and customer response time further strengthens the view that concurrent engineering is essential for meeting customer demands. In the scenario of uncertain demand, it is important to respond to the customer demands. During the project development phase, members are required to adhere to the strategic goals of the organizations mentioned by Koufteros, Voderembse and Doll, (2006) concurrent engineering has been viewed as an important activity, especially as customer expectations grow and the importance of product development increases. The linkage between SCM performance measures and organizational performance has not been explored in any other study.

In an attempt to understand the nature and importance of supply chain management, Balsmier & Voisin, (1996) Studied that effective supply chain management is not possible without appropriate information system, which is designed to provide readily accessible and accurate information to all supply chain participants

Similarly, complementing the importance of information technology, Bauknight, (2000) stated that the internet has been identified as the perfect communication channel for information that will be used to interconnect the supply chain partners, through which the essential process of managing and synchronizing supply chains are carried out

In these times. Every organisation explores the possibility of installing information systems by and large and in particular in the supply chain management, Shukla (1994) observed that information systems are also valuable in promoting learning within the firm, which consisted of information acquisition, dissemination and shared interpretation of information across the functions within a firm.

Such systems ensure that there will be free flow of information. Adler,(1986) in his study found that the information systems like marketing, sales, R&D, logistics production, purchasing and finance permits freely flowing information are of great benefit to all functions of the firm. The organizations not having effective information system or not allowing free information flows within the firm can lead to distrust and antagonism resulting into ineffective group processes.

Zuckerman(1998) found out that Supply Chain Management (SCM) has the ability to help the management at all levels so that decisions can be made quickly, which can be based on accurate data, and this requires an efficient and effective information system. Every supply chain has an information chain that parallels the flow of product. Information is vital for a supply chain to function. Without information relayed at the right time to the right place, there are no purchase orders, no shipment messages, and no payments, and the supply chain shuts down

Factor (1998) also found that the Managing the flow of information in the supply chain is as important as managing the flow of products. Inherently, the supply chain management should be based on the exchange of substantial quantities of information among the buyer, supplier, and carrier to increase the efficiency and effectiveness of supply chain

Lockamy III & McCormack (2004) in their study founded out the concept of process maturity proposes ,that a process has a lifecycle that is assessed by the extent to which the process is explicitly defined, managed, measured and controlled. there maturity model assumes that progress towards goal achievement comes in stages.

The supply chain maturity model is presented is based on concepts developed by researchers over the past two decades. The Software Engineering Institute has also applied the concept of process maturity to the software development process in the form of the capability maturity model. They examined the relationship between supply chain management process maturity and performance.

Dadzie (1982) studied supply chain distribution process concerned with efficient movement of finished product from end of the production line to customer and also movement of material from the source of supply to the beginning of production line

Balton (1973) studied SCM and found that SCM includes freight , transportation , warehouse , material handling , protective packing , inventory control , market forecasting and order processing.

Powell (1998) cited in his research that development of suitable relations with inbound and outbound logistics suppliers and with customers is core of modern supply chain. Efficient transportation is necessary for SCM success at it involves the criteria of line , place , quantity , form and processing

In today's world, supply chain management (SCM) is a key strategic factor for increasing organizational effectiveness and for better

realization of organizational goals such as enhanced competitiveness, better customer care and increased profitability. The era of both globalization of markets and outsourcing has begun, and many companies select supply chain and logistics to manage their operations. Most of these companies realize that, in order to evolve an efficient and effective supply chain, SCM needs to be assessed for its performance. Browsersox & Daugherty (1995) suggest that concept of formation in SCM perspective can be consistent with organizational perspective. The emphasis is on performance measures dealing with suppliers, delivery performance, customer-service, and inventory and logistics costs in a SCM. In developing the metrics, an effort has been made to align and relate them to customer satisfaction.

Monczkr (1993) cited that good suppliers can help manufacturing during the development of new products and processes with long term quality improvements and cost reduction and can provide enhanced delivery performance. Experts found a strong relationship from the largest arcs of supplier and customer integration to market share and profitability. Taking advantage of supplier capabilities and emphasizing a long-term supply chain perspective in customer relationships can both be correlated with a firm's performance. As logistics competency becomes a critical factor in creating and

maintaining competitive advantage, measuring logistics performance becomes increasingly important, because the difference between profitable and unprofitable operations becomes narrower.

Burt (1989) and Larson (1994) found close cooperation with suppliers quickly bring lower unit cost, longer terms, even greater quality at lower cost. Considering the importance of this area has become imperative due to many manufacturers concentrating on their core competencies moving away from vertical integration, to gain a competitive edge from the supply side of their operations.

Lamming 1993 recognized competitive advantages gained by Japanese companies through their use of long term, close relationship with suppliers and developed a four phase descriptive model of the car industry that move towards closer buyer supplier relationship and partnership. He also published empirical data demonstrating the reduction in no. of supplier in automobile industry.

communication and suppliers' understanding of the buyer's requirements will enhance quality improvements. Lascelles and Dale (1989) identifies that poor communication and suppliers lack of

understanding of the buyers requirement were barrier to quality improvement. e communications level is extremely good with intranet facility providing online database sharing option. Suppliers are partners with significant involvement in major product designs, developments, and even sourcing decisions.

Considerable research has been conducted on buyer-supplier relationship management or supply management, but most of these studies are conceptual in nature or based on a few case studies. Lyons (1990) cited that reduce supplier base means closure , long term relationship can be established with few supplier who then play a critical role contributing to new service design and thus reducing cost and improve quality.

Boyson, cossi, verb 2003 cited that information technology can help overcome the problems that play many supply chain. It leads to reduction in number of errors that leads to efficiency in work place. The negative effects of uncertainty and are mitigating. The lower level of uncertainty is replaced by lower inventory level. Most systems are not enabled for this change.

What makes a supply chain organization best in class? The answer will vary for each company, but there are some practices that many leading companies are adopting now. Pant, Sethi, Bhandari (2003)

studied how e business, practices and tool , implementation effects firm opportunity for Supply chain.

Visibility is paramount when it comes to running a functional, efficient and ethically responsible supply chain. Our web-based supply chain management software gives businesses real-time data access and maximum visibility of all their processes. Powell (1999) cited the use internet base technology and its implementation for its supply chain management.

Faisst & Kanet (2002) studied IT impact on supply chain management relationships with reference to internet base technology and SCM relevance. This way, supply chain product makes each stage, including; sourcing, product development, order management, shipment and delivery, easier to manage, which reduces lead times and minimises running costs.

Rubian and Marquez (2003) studied and found out that supply chain management requires the integration of inter organization and intra organization in order to reach the coordination of the different types of flow that runs along the entire supply chain i.e. knowledge information and material.

many companies are standing back and re-evaluating the health of their supply chains. Croom (2001) studied the complex content of supply chain where inter connectivity of factor results in multiple relationships including supplier, client and distributor. Managing relationships among the various personalities in the organizations is often the most difficult part of the SCM initiative.

Mattsson and Wallenverg (2003) He found out that SCM must respond promptly to the flow market place information and provide data for the customer orders , complaints , needs etc. Strategic alliances can occur in any number of different markets and with different combinations of suppliers and customers. Alliance configurations can vary significantly. A typical supplier-customer alliance involves a single supplier and a single customer.

Nayyar and Bantel (1994) gave the finding that agile Supply chain in Service industry are capable of rapid adaptation in response to unexpected and unpredicted changes and event , market opportunity and customer requirement

Spekman et al. (1994) Noble (1997) cited in his research "Competition is no longer company to company, but supply chain to supply chain". Success is no longer measured by a single transaction; in many instances, competition is evaluated as a

network of cooperating companies competing with other firms along the entire supply chain

Li and Chen (2001) found out that: To be successful, companies will not seek to achieve cost reductions or profit improvement at the expense of their supply chain partners, but rather seek to make the supply chain as a whole more competitive.

Further after research it has been found out that Successful implementation of supply chain management has been credited with helping to cut costs (Mainardi et al. 1999), increase technological innovation (Hult et al. 2000), increase profitability and productivity (Gryna 2001), reduce risk (Chase et al. 2000), and improve organizational competitiveness (Fisher 1997; Christopher 2000; Spekman et al. 1994; Wisner and Choon 2000). However, supply chain management does encounter several obstacles. Some of these obstacles are: an increasing variety of products, decreasing product life cycles, more demanding customers, globalization, and difficulty executing new strategies (Chopra and Meindl 2001).

Wisner and Choon 2000; Beamon (1999; Christopher 2000) According to this perspective, supply chain management projects are undertaken to respond to marketplace demand and intense

global competition. Wisner and Choon (2000), for instance, suggested that the intense global competition of the past decade has led many organizations to create cooperative, mutually beneficial partnerships with suppliers, distributors, retailers, and other firms within the supply chain. The objective of those partnerships has been to offer lower-cost, higher-quality products and services with greater design flexibility.

Other researchers have focused on supply chain performance measurement (Narasimhan and Jayaram 1998; Hewitt 1999; Beamon 1999). For example, Beamon (1999) identified three types of performance measures as necessary components in any supply chain performance measurement system: resource measures, output measures, and flexibility measures. Hewitt (1999) recommended customer satisfaction, return on trading assets, and flexibility of supply chain management activities as the measurements for supply chain performance. From a different perspective, Christopher (2000) suggested that one of the keys to success is the creation of an agile supply chain on a worldwide scale. Agility implies rapid strategic and operational adaptation to large-scale, unpredictable changes in the business environment focusing upon eliminating the bafflers to quick response.

Other scholars have identified several supply chain management issues, practices, and various strategies that companies take in establishing and effectively running their supply chain (Mentzer et al. 2000; Chopra and Meindle 2001; Gardner 2001; Gryna 2001). Mentzer et al. (2000) suggested that in order for a supply chain to work effectively, certain enablers should be in place. These enablers apply to all parties involved and include a common interest, openness about their practices and processes, clarity about what is expected of them, and others. Chopra and Meindle (2001) focused on the drivers and obstacles that affect the way the supply chain flows and performs. Four major drivers of supply chain performance are inventory, transportation, facilities, and information, each of which has a different yet equally important impact on efficiency and responsiveness. While the factors that drive a supply chain are important, the obstacles require more attention. Other studies have focused on manufacturers' attempt is to integrate processes and form alliances with suppliers to more efficiently and effectively manage the purchasing and supply function (Harwick 1997; Carter et al. 2000; Gardner, 2001). Gryna (2001) suggested that supplier relations are a major issue in global supply chain management. The key phrase in today's supplier relations is a partnership alliance, which means working closely together for the mutual benefits of all parties. Youngdahl (2000) described four elements as necessary

components in any supply chain effectiveness: planning, sourcing, making, and delivering. From a different perspective, Kehoe and Boughton (2001) suggested that today the internet provides the opportunity for demand data and supply capacity data to be visible to all companies within a manufacturing supply chain and, as such, companies are in a position to anticipate demand fluctuations and respond accordingly.

Chen, I. J. and Paulraj, A. (2004). they found out and identified , consolidated supply chain initiatives and factors to develop key supply chain management . they identified constructs for supply uncertainty, demand uncertainty, customer focus, competitive priorities, supply network structure, long-term relationships, communication, cross-functional teams, supplier involvement and logistics integration.

Christopher, M. C. (1998). Logistics and Supply Chain Management: Strategies for Reducing Cost and Improving Service

Martin Christopher described the goal of supply chain management as to link the marketplace, the distribution network, the manufacturing process and the procurement activity in such a way that customers are serviced as higher levels and yet at a lower total cost.. He found out how service levels can be used to segment

markets and explores appropriate measures to assess logistics productivity and service performance. It provides information on how to map and audit logistics systems, describes how greater supply chain responsiveness can be achieved through lead time reduction .

Ford, D. (1990). he focused on empirically-driven research with episodic interactions (related to a transaction of industrial goods) within relationships (described in terms of adaptations, commitments, trust and conflict) between companies. Four theoretical assumptions underpin the interaction model produced:

1. Buyer and sellers are active participants.
2. Secondly, buyer-supplier relationships are frequently long term, enduring and involve a complex pattern of interactions between companies.
3. Thirdly, these links often become institutionalized into expected roles which can involve e both cooperation and conflict.

And finally, the focus of such relationships is on raw material or component supply. Accordingly, the buyer-supplier relationship forms the unit of analysis and equal attention is paid to industrial marketing and purchasing.

Heikkila, J. (2002). his research presented an inductive case study of six customer cases to address the research question, how do companies in fast growing industries achieve good customer satisfaction together with efficiency in supply chain management. Results are organized into three areas: demand chain structure, customer-supplier relationships and demand chain performance. Research findings are summarized in a demand chain management model, which consists of five propositions. 1. Good relationship characteristics contribute to reliable information flows. 2. Reliable information flows contribute to high efficiency. 3. Understanding the customer situation and need and good relationship characteristics contribute to cooperation between the customer and supplier. 4. Good cooperation in implementing demand chain improvement contributes to high efficiency and high customer satisfaction. 5. High customer satisfaction contributes to good relationship characteristics.

Kemppinen, K. and Vepsalainen, A. P. J. (2003). 'Trends in industrial supply chains and networks',

Drawing upon survey research conducted across supply chain in the electronics, mechanics and paper industries, this study argues that the management and structure of 1990s supply chains has

transformed from the linear flow of materials to a multi-tier structure, enabled by information sharing and collaborative planning. A distinction is drawn between efficiency-driven and platform-based networks. Though coordination efforts remain limited to order process and operational scheduling, specialization and outsourcing are identified as the preconditions for networking. Typical product factories are being replaced by high volume component suppliers, flexible assembly and installation operations. Service relationships have polarised from general services into internet-based self-serve and expert provision. Firms need to position themselves strategically either as integrators or general component developers. The geographical scope of operations will be determined by functional focus.

Storey, J., Emberson, C., Godsell, J. and Harrison, A. (2006). It was a detailed study of supply chains which encompassed 72 companies across Europe. It suggests that supply management is at best, still emergent. Four drivers of supply management were identified: globalization, outsourcing, fragmentation and market polarization. Substantial gaps were revealed between theory and practice.

Harland, C.M., Lamming, R.C., Zheng, J. and Johnsen, T.E. (2001). Supply networks are defined as 'interconnected entities whose

primary purpose is the procurement, use, and transformation of resources to provide packages of goods and services'. This theory positions supply networks as a more complex concept than supply chains and develops an empirically-derived taxonomy. Drawing upon an exploratory survey, eight in-depth cases and a structured telephone survey encompassing in total 136 firms, four differentiating factors are identified: the degree of supply network dynamics (high or low) and the degree of focal company supply network influence (high or low). The research focuses particularly on how these four types of supply network are created and operated. Nine different types of co-coordinating and managing activities (partner selection, resource integration, information processing, knowledge capture, social coordination, risk and benefit sharing, decision making, conflict resolution and motivation) are identified. Also highlighted are four contextual variables that may influence the processes of supply network creation and operation: market environment, product and process, network structure and the network strategy of the focal firm.

Lamming, R., Johnsen, T., Zheng, J., and Harland, C. (2000). This research explores how supply networks of different types can be managed. Since networks tend to cross sector boundaries, these authors argue for a contingent approach to network management based upon product distinctions rather than sectorial characteristics.

Following Harland supply networks are defined as 'sets of supply chains, describing the flow of goods and services from original sources to end customers'. Drawing upon existing supply chain categories and the strategic management literature that relates to innovation, a new supply network categorisation based on product type is proposed. It extends Fisher's (1997) innovation: functional supply chain dichotomy, arguing for a contingent approach to supply network management based on 3 product-related aspects namely, the degree of product innovation, product uniqueness and product complexity. Two distinct supply network types are identified: those for innovative-unique (rare exceptions to the common offer) and functional products. Several key management differences are identified: the nature of information and knowledge sharing, the relative emphasis on cost, service, quality and innovation and network complexity. Complex product networks exhibited broader upstream networks, though each component may have few suppliers with single/dual sourcing preferred. In downstream network structures, information management was difficult and investments in IT to coordinate material flows were common. The supply networks of less complex products tended to be dominated by a single or small number of companies. A high degree of information secrecy was found in innovative unique networks. Strategic priorities and network structures were affected.

These networks were found also to emphasize quality and innovation, as opposed to functional networks where cost and service were more important.

Harrington (1999) This paper examines the financial benefits of adopting IT-based supply chain management SCM systems by 123 manufacturing and service firms over the period 1994 to 2000. By examining the change in financial performance pre and post adoption controlling for industry median changes in performance, we find that SCM systems increase gross margin, inventory turnover, market share, return on sales, and reduce selling, general, and administrative expenses. High-tech firms implementing SCM systems have similar benefits and even greater increases in gross margin, market share, and return on sales. Large scale empirical studies of the financial benefits from supply chain management SCM are as elusive as a consensus definition of SCM (Scannell et al., 2000). The best recent evidence of the value of SCM is Hendricks and Singhal (2003), who demonstrate that production or shipment delays attributed to SCM systems decrease firm value by an average of 10.28%. However, Hendricks and Singhal note that large sample empirical evidence directly linking SCM systems to financial firm performance metrics is quite limited with currently available evidence (e.g. Frohlich and Westbrook,

2001; Krause et al., 2000; Narasimhan and Das(1999 Narasimhan and Jayaram(1998; Shin et al., 2000; Tan and Kannan(1999) based on either self-reported measures of performance or holistic measures of performance such as return on invested assets.

Recent evidence suggests that IT investments such as IT-based SCM systems pay off when the IT investment scenario is well targeted, well timed, and accompanied with complementary investments and actions (Barua and Mukhopadhyay, 2000).

Croom, Romano and Giannakis (2000) The breadth of SCM is perhaps best illustrated by Croom, Romano and Giannakis (2000), who identify 11 different streams of research literature that have converged on the topic--including purchasing and supply, logistics and transportation, marketing, organizational behavior, contingency theory, institutional sociology, systems engineering, networks, best practices, strategic management and economic development. They also identify three primary levels of analysis (dyadic, chain and network) and four categories of exchange considered (assets, information, knowledge and relationships) in extant research.

Ho, Au and Newton (2002) proposed that conceptual SCM models be developed based on a context-practices-performance framework.

Cigolini, Cozzi and Perona (2004) proposed a new conceptual

framework for SCM strategies and introduced a set of corresponding management techniques and tools. Chen and Paulraj (2004a, b) emphasize the origins of SCM from a number of fields including purchasing, logistics, operations, organizational theory, information systems and strategic management. Lejeune and Yakova (2005) proposed a typology of supply chain configurations to provide linkages between terms that have previously been used to disjointedly describe various supply networks. Finally, Li, Rao, Ragu-Nathan and Ragu-Nathan (2005) conceptualized, developed and validated six dimensions of SCM practices including strategic supplier partnership, customer relationship, information sharing, information quality, internal lean practices and postponement.

Further some researchers have focused on partner characteristics as an explanation for supply chain management behavior and outcomes (Wisner and Choon 2000; Beamon 1999; Christopher 2000). According to this perspective, supply chain management projects are undertaken to respond to marketplace demand and intense global competition. Wisner and Choon (2000), for instance, suggested that the intense global competition of the past decade has led many organizations to create cooperative, mutually beneficial partnerships with suppliers, distributors, retailers, and other firms within the supply chain. The objective of those

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to all companies within a manufacturing supply chain and, as such, companies are in a position to anticipate demand fluctuations and respond accordingly.

Jayaram(1999) This study explores current supply chain management issues and practices, and identifies problems that affect supply chain management success. In addition, it investigates the impact of SCM on the overall organizational effectiveness. The results of this inquiry indicate that 74 of the 130 firms (57 percent) classified their effort as successful and reported that they were achieving at least 5-15 percent improvement in each of their strategic supply chain management goals. Although the actual percentage of improvement is less than the projected percentage of improvement, they considered their efforts successful. One way to explain this finding suggests that the stated goals were unclear or expectations from supply chain management projects were too high. Furthermore, the firms reported that the supply chain management strategies in their organizations were making a positive contribution to overall organizational effectiveness. They indicated that the dollar savings and indirect benefits generated by the supply chain management programs were greater than the costs of implementing these strategies. Supply chain management strategies were believed to help improve performance; increase access to new markets.

Agarwal and Shankar (2001) captures the impacts of using IT in various ways in a supply chain for auto industry. The dynamic interactions among different variables of the case supply chain have been modeled and analyzed. Simulation result indicates that the influence of Information Systems (ISs) (through Data Accuracy (DA), Delivery Speed (DS), Usage of IT (UIT) tools, Process Integration (PI)) on the performance of supply chain is relatively more significant as compared to influences of other enabler variables.

Lalonde & Pohlen (1996) Findings - The study finds that supply chain controlling has picked up on controlling concepts, i.e. rationality, coordination and information, which are transferred to the meta-level of a supply chain. It captures the performance frontier of a supply chain, the coordination and integration needs of a supply chain and the information needed to manage and control a supply chain.

(Wisner and Choon 2000; Mentzer et al. 2000; Mentzer 2001). Found out that Cooperation and collaboration must occur in Building and establishing partnerships or alliances that will last is one of the most critical requirements to successful supply chain management. Sharing channel risks and rewards should be a long-term

commitment because it is important for focus and teamwork among all members along the supply chain and results in a competitive advantage (Mentzer 2001).

Reducing response time across supply chain activities, making products easily adaptable to various markets, utilizing various quality suppliers from around the world through outsourcing of products and services, producing quality goods or services, using ISO 9000 certifications or company specific standards, conducting accurate forecasting, fulfilling all orders in a timely and efficient manner, and flexibility in anticipating change in demand and supply were among the factors contributing to successful supply chain management projects. To examine risk factors, respondents were asked to identify the seriousness of 14 possible risks facing supply chain management projects (on a scale of 1 -- not a problem to 5 -- a serious problem). Their responses were then recorded in three categories: 1 -- not a problem; 2 and 3 -- a problem; 4 and 5 -- a serious problem. The responses were also translated into means and ranks to make the analysis more meaningful study.

Effective supply chain management requires companies to develop innovative strategies that integrate both their logistics and manufacturing activities (Pagh et al., 1998). The objectives of supply chain is to get the right product at the right place in the least

cost, managing inventory effectively, offering superior customer service and reducing cycle times. All these can be achieved through proper installation and use of Information Technology (IT) tools. Jain et al. (2004) found that the installation of SCM software's may result into increase in the market share, customer satisfaction, and increment in productivity, and service of overseas customers.

Organizations were suggested to Install IT tools so that score on each dimension of supply chain effectiveness can be improved. Trust among employees as well as among the supply chain members varies from organizations to organizations. The coordination between various activities like, operations, scheduling, and employees is also important. High degree of coordination and trust result into high level of commitment. Supply chain coordination and commitment are dependent on accurate data, and IT plays an important role in providing accurate and timely data. Morgan and Hunt (1994) proposed that cooperation arises directly from relationship, trust, and commitment. Moorman et al. (1993) defined trust as a willingness to rely on an exchange partner in whom one has confidence. Although both trust and commitment are essential to make cooperative work, trust is a major determinant of relationship commitment (Achrol, 1991; Morgan & Hunt, 1994). Dwyer, Schurr, and Oh (1987) emphasized that the trust helps in

overcoming difficulties such as power, conflict, and lower profitability. Commitment is an essential ingredient for the successful long-term relationships that are components of the implementation of SCM. Lambert et al. (1998) also pointed out that the necessity commitment of resources and empowerment to achieve stated goals is important to implement SCM.

To manage inventory effectively, accurate demand forecasting tools should be installed. The point of sale data collection system, Electronic Data Interchange, Internet and e-commerce provides access to near real time sales and forecasting information for each supply chain partner

(Smart, 1995, Booker, 1999). New product development has been an important concern of business organizations and is now the dominant driver of competition in many industries (Schilling & Hill, 1998). Suppliers have important role in effective delivery of raw materials. Suppliers themselves maintain inventory for the organizations and supply the products or components on Just-in-Time basis.

Norris et al (2000) According to his study every organization which dreams of using modern electronic and internet technology for creating business value will be expected to pass through three

distinctive stages: e-commerce ,e-business and e-partnering. This study has focused on key challenges in SCM

1. Selection of suppliers
2. Information Sharing
3. Build a long term partnership
4. Establish liaison with suppliers
5. Product life Cycle
6. Total integration of SCM
7. Inventory Management

Following recommendation has been finally suggested by this study

1. Organization should follow limited suppliers
2. Partnering with suppliers
3. Vertical integration
4. Hybrid Network
5. Relations with Virtual companies who can provide variety of services.

Gattorna J.L and Walters D.W (22 Aug, 2000)

This study Introduces a supply chain "health check" procedure successfully applied in the European automotive sector and presents the results for the analysis of 20 trans-European value streams covering a wide range of first and second tier suppliers. The health

check procedure is activated via a quick scan methodology (QSM) requiring execution by a multi-disciplinary team working on-site. The degree of integration within the value chain is estimated by the QS team, using the uncertainty circle concept which apportions observed uncertainties in the product delivery process (PDP) according to source.

Study revealed the four major contributors are:

- 1)The demand side
- 2)Supply side
- 3)Value added process side and
- 4)Systems controls.

The results clearly demonstrate a well-trodden and hence proven route for value stream performance improvement. They also identify value chain exemplars and many areas of best practice, but most importantly they provide a list of actions focused on improving the performance of individual value streams. Properly applied, re-engineering programmes based on these trigger points will speed up the progress curve towards effective supply chain management

Seethamraju, Ravi (2000) His research was based on "Enterprise Wide Computing and Information Technologies in Managing

Business Logistics-Some directions for research", in Emerging role of IT in the Global Business Environment. His Study states that,

1. ERPs now in most of the large organizations and slowly expanding into SMEs
2. Organizations eager to leverage all this integrated information into competitive advantage and ROI (not seen so far)
3. Complement each other:
4. ERP aim to achieve internal integration while SCM facilitate integration across the enterprise
5. ERP focuses on transactions while SCM offers intelligent decision support
6. ERP stores data about all events in source, making, deliver and return processes and act as integrators, SCM uses that info.

Options:

- a. Implementation of ERP and SCM systems (most popular)
- b. Custom-built application integration
- c. Implementing full ERP with SCM capability

1. Limited decision support capability - a major weakness of ERP systems necessitating 'bolt-ons' for SCM, CRM, PLM, BI tools etc.

2. Integrated architecture in most of the ERP systems - not conducive to a dynamic supply chain context
3. Lack of standardized approaches to information sharing and process management -modern tools and standards making info integration easier
4. Data reliability and controls - risky with ERP systems because of their dependency on programmed controls, elimination of control and supervisory roles, and single point data entry
5. Differences in technology investments between partners & unwillingness to share .
6. Problems with the continuing usage of legacy systems and correct functioning of ERP systems

Research significance

Inadequate work on how firms are extending and exploiting capabilities of ES beyond their enterprise

Majority of studies were quantitative & on implementations

Interpretive case study (a manufacturing organization) Semi-structured in-depth interviews Implemented SAP R/3 and its SCM extension (2002 and 2003/4)

Insufficient integration - Organizational coverage Limited interconnection between hierarchical levels in the organization Good horizontal integration - by implementing all the four important modules (SD, FI/CO, MM and PP) Inter-organizational integration is very limited - SCM extension used just for demand forecasting (on a fortnightly basis and not real-time) Insufficient integration - depth or extent of integration Limited access to data for 'economic' reasons and 'managerial' reasons Excellent integration for presentation, execution and access for managerial staff Excellent integration of communication - the way info is exchanged, processed & tracked.

Sahay et al (2001)

His research reveal from Sam Walton words " There is only one boss- the customer, and he can fire everybody in the company, from the chairman on down, simply by spending his money somewhere else".

Timely movement of goods across the supply chain is very important in process industry and any delay results to inventory build ups and thus increased costs. The typical factors like: Continuous manufacturing of products, Sophisticated and extremely capital intensive manufacturing plants, Production planning and raw material specification, Multiple, interdependent products, Complex

transportation logistics and also the complex supply chains make it difficult to manage the supply chains in the process industry.

There is a very good potential for improving the supply chain efficiencies in the Process Industry. The companies in this sector need to re-think their strategies and align with the chain partners to provide better customer service and to gain a business advantage. For effective management in a supply chain, measurement goals must consider the overall supply chain goals and the metrics to be used. Another source of improvement is introducing proper performance measurement system for ware house operations as many companies are not measuring their performance which may lead to multiple impacts on the efficiency of the supply chain and also involve all the people in the chain so that they get a feeling of ownership which means seeking opinions and allowing them to experiment with ideas while keeping the process transparent.

Michael Hammer (2001)

His survey reveals on supply chain management related to BPR (Business Process Reengineering)

True supply chain excellence will only come from making a digital business transformation [DBT]. It's a transformation that exploits all that technology has to offer, facilitates supply chain collaboration, and leads to new levels of operational excellence. The model for creating business value has changed. Companies today participate in extended supply chains, where real operational efficiency and revenue enhancement come from greater visibility, integration, and synchronization among connected partners. In short, collaboration among the partners in the extended supply chain is the new arena for value creation. Collaboration occurs when companies work together for mutual benefit. It happens when supply chain partners leverage each other's operational capabilities so that in combination they perform better than they could possibly do alone. Collaboration can occur at all points along the supply chain—from design through procurement to final distribution. When done effectively, it enables companies to share information that can dramatically shorten processing time, eliminate value-depleting activities, and improve quality, accuracy, and asset productivity, all of which are fundamental to long-term success.

The greatest barriers to such a transformation are not technical or legal. Rather, they relate to prevailing managerial and employee attitudes, practices, and traditions around what constitutes best

practice. Actions that once were considered best practice are increasingly becoming unnecessary or obsolete.

Additional considerations in a seamless execution of DBT involve transitioning from traditional ideas about organizational structure. The traditional line-and-command, functionally focused organizational chart is replaced by an integrated supply chain structure built on these three shared values: suggestions from his study are:

1. Enterprise core processes that focus on maximizing customer value.
2. A shared real-time information and operational connectivity that creates a "response-based" or demand-driven network of supply chain relationships among the participating companies.
3. Commitment to operational excellence, expressed as customer

3.3 Identification of Factors that contribute to success of SCM in Retail industry.

Referring inputs from various existing literature and studies various factors that can contribute to success of retail industry have been identified. Many studies address sub contributors or partial factors. Only the major contributor has been specified to evaluate the effect of this research on SCM.

TABLE 3.1 : SUMMARY OF FACTORS THAT CONTRIBUTE TO SUCCESS OF SCM

S. No	Factors
1	Variability in Demand
2	Consumption Rate
3	Life cycle Stage
4	Forecast Ease
5	Length of Life Cycle
6	Functional v/s Aesthetic
7	Substitutability
8	Levels in BOM structure
9	Degree of Engineering Changes
10	Product Variety.
11	Value of Purchase of Item.
12	Criticality of item.
13	End-use of item.
14	Number of Sources of Supply.
15	Ease for Storage.
16	Ease of Transportation.
17	Quality (less Rejections)
18	Perishability (Shelf-life)
19	Disposal/Salvage value
20	Price Stability.
21	Seasonality in Availability.
22	Manufacturing Lead Time.
23	Lead Time Reliability.
24	Number of clients.
25	Distance of Vendor.
26	Source of Supply.
27	Degree of Competition.
28	Design Flexibility of supplier.
29	Communication system.
30	Transportation Cost.
31	Transportation time.
32	Transportation Reliability.

3.4 Synthesis of Review of Literature

As discussed in the previous sections, the existing studies have multiple points of views but none of them have offered an integral and specific study in SCM of retail industry. None of the studies have focused collectively on all these points. More over if we refer to table of Supply chain performance matrices covered are very generic to multiple industries. To add to this no specific attention has been given separately to SCM of most fast growing industry that is retail industry. Refer to table all performance indicators are not covered in single study. In addition to the performance parameters need is there to be very specific about measures / parameters which will minimize cost and maximize profit. In growing world it is very important to be very specific on understanding the level of service expectation in a Retail industry to maintain long term relationship with the customers.

Thus a need is felt to initiate research in this direction so as to evaluate a model and establish relationship between different parameters that will reflect the effectiveness efficiency of a Retail Industry. Building a true objective model is not feasible, it is better to identify the practices at industry level and then move to generalization. The present work is an initial attempt at the industry level.

3.6.The Summary

In this chapter, an attempt has been made to present a detailed review of literature pertaining to the importance of supply chain management in modern organisations today. These organisations maybe of varied nature, type, classification, ownership and so on. Particularly, the factors which contribute to the successful implementation of the supply chain management in organisations figured out predominantly in the research across the world. Besides, the studies covered also reflect upon the importance of the supplier and buyer relationships, the importance of information technology and the connectivity between information technology and supply chain effectiveness.