CHAPTER-2
LITERATURE REVIEW
Chapter -2: Literature Review

This chapter presents an overview of research studies undertaken in the area of supply chain management. It is organized into two major sections. The first section presents an overview of studies in retail supply chain with respect to various factors which have a bearing on performance of retail supply chain like radio frequency identification (RFID), innovative supply chain management (SCM) techniques, Physical distribution and Digitalization, logistics, customer relationship management (CRM), sourcing, electronic data interchange (EDI) broad non-food merchandise, virtual store, procurement and SCM, private brands, supply chain and inventory management, efficient consumer response (ECR) grocery, manufacturer and retailer relationship, green supply chain management, supply chain and performance, supply chain and macro environment, supply chain management and integration, pricing, quality, drivers of retail performance, promotion and supply chain and retailers and entry strategy. The second section presents studies focusing on a select industry-they being fashion and garment retail, supply chain and grocery, food supply chain, automobile industry supply chain, mobile phone industry supply chain.

2.1 Parameters of Supply Chain

The following presents a review of studies with respect to various supply chain (SC) parameters.

2.1.1 RFID and Supply Chain

Radio-frequency identification (RFID) has generated enormous interest in the area of supply chain, as it is a recent and emerging technology. RFID technology enables inventory tracking in real time bringing reduced processing time and labor. It enables complete visibility of accurate inventory data throughout the entire supply chain, from manufacturer's shop floor to warehouses to retail stores, which in turn provides opportunities for improvement and transformation in various processes of the supply chain. (Lee, et al 2009). Retailers face various issues like stock-outs, inventory management, product recalls, theft, shrinkage and product counterfeiting. RFID deployment can help them in solving these problems as it provides supply chain
partners with the ability to foresee the movement of inventory, goods and customer demand, allowing them to plan in advance. It helps the firms to enhance visibility in supply chain and checking movement of products. In brief it provides real time visibility in supply chain and hence strengthens communication between the trading partners. (Madhani, 2009). RFID has a wider range of benefits than its predecessor technology bar code though it currently comes at a price that is considered not very reasonable by many businesses. It is advantageous because it does not require line-of-sight scanning, acts to reduce labor levels, enhances visibility, and improves inventory management. The ultimate aim of RFID in SCM is to provide item-level tracking and act to revolutionize SCM practices, introducing another level of efficiencies never seen before. (Michael and McCathie, 2005). RFID has become one of the most discussed retail technologies as it promises to cut supply chain costs and also bring about other benefits to the chain.

Mehrjerdi, (2009) did this study with the purpose of understanding important supply chain (SC) strategies for a complete success. It reviewed key points about the radio frequency identification (RFID) and the fundamental concepts of supply chain management (SCM). The methodology was case study wherein some applications of RFID in SC are briefly reviewed and three large cases of RFID implementation in SC are discussed. The study provided key elements of SCM, a brief background on RFID, and the integration of SC and RFID to generate new systems with higher level of profitability and efficiency. It found that to make the SCM functional and successfully operational, management must be committed to high standard of performance including competitive lead times to customers, significantly reduced inventories, world-class product quality, and reduced process and product complexity. The basic issues related to RFID technology are explored, including its promises as well as its pitfalls. A conceptual discussion of the evolution of RFID is provided, its application in various industries is discussed, implementation challenges highlighted, and adoption phases and success factors have also been elaborated upon. It was found that RFID is the most recent prolific technology that provides supply chain collaboration and visibility, increasing corporate ROI and at the same time improving the retail supply chain communication.
If handled properly, RFID technology can result in an evolutionary change incorporating legacy systems with the real-time supply chain management of tomorrow. It is that the stumbling point seems to be a variety of issues outside the technology itself, which include marketing problems, false promises, security and privacy considerations, and a lack of standards. It confirms that RFID is a powerful technology in its infancy with untapped potential for supply chain collaboration. The biggest implementation challenge is for IT experts to determine how to integrate RFID with existing supply chain management (SCM), customer relationship management (CRM), and enterprise resource planning (ERP) applications. (Attaran, 2007).

(1) Impact of RFID Application

This study by Visich et. al undertaken in 2009, focuses on the benefits of radio frequency identification (RFID) on the performance of supply chains, It is based on primary study that is through investigational evidence. It classifies and reviews existing quantitative empirical evidence of RFID on supply chain performance. It concludes by classifying the evidence into operational and managerial and the processes by the effect they have had which are automation, informational or transformational. It concludes that RFID implementation has had automation effects on the operational processes through inventory control and efficiency improvements. It shows informational effects on the managerial processes which is reflected in observed for improved decision quality, production control and the effectiveness of retail sales and promotions. This research gives an understanding of the quantitative benefits of RFID in the supply chain. (Visich, et al, 2009)

Zelbst, et al (2010) undertook an evaluation of structural model that utilizes radio frequency identification (RFID) technology and supply chain information sharing as antecedents to supply chain performance. Data was collected from a sample of 155 manufacturing sector and service sector organizations. It assesses the model using a structural equation methodology. The research concludes that RFID technology utilization does not affect the supply chain performance directly but leads to improved information sharing amongst the supply chain participants, leads to improved supply chain performance and improved customer satisfaction.
The literature that follows focuses on the application of RFID in different sectors—grocery, prints, healthcare, pharmaceuticals, FMCG and fiber industry.

(2) Grocery

Prater et al (2005) undertook a study of application RFID in supply chains within grocery industry. It outlines the market drivers that effect the way the grocery industry approaches RFID and also areas of research on RFID that should be undertaken to better provide the grocery industry with managerial insights. The paper develops a research framework that includes research using modeling techniques, RFID implementation, drivers that have lead to RFID implementation in grocery industry and the impact of RFID on daily operational issues. It provides a detailed framework of research areas that are of practical importance to the grocery industry. The study concludes that the adoption of RFID technology and its attendant supply chain management techniques holds the promise of being more successful than the automatic replenishment program (ARP) implementations of the 1990s and that the use of RFID might allow grocery stores to keep smaller quantities of each product on their shelves while still retaining high service levels.

(3) Printing Industry

Hou and Huang (2006) undertook a study aimed at revealing the business characteristics of the printing industry. It undertook a quantitative analysis of costs and benefits for RFID applications in different logistics activities. The study was based on interviews and was based on information collected through a questionnaire. Its objective was to explore business operation requirements and RFID acceptance of distinct roles in the printing supply chain. It concludes by classifying printing supply chain into six models and providing RFID application scenarios for them. It finds that item tagging mechanism is the ideal approach for RFID application in the printing supply chain and provides reference information for enterprises to evaluate the RFID implementation in the supply chain.

(4) Healthcare

Kumar et al (2009) studied the healthcare supply chain with the objective of determining portions of healthcare supply chains which were most efficient and cost
effective and in which radio frequency identification devices (RFID) could be implemented. It also provided specific examples of RFID implementation and demonstrated how these business applications could add to the effectiveness of the healthcare supply chain. It described the current state of RFID technology scenario and provided practical information for managers in the healthcare sector to make sound decisions about the possible implementation of RFID technology within organizations. It examined literature related to Healthcare industry sighting examples of specific instances of RFID implementation using an integrated simulation model using Excel, @Risk and Visio software tools. The study concluded that the cost of implementing present day RFID technology is too high for broad implementation within the healthcare sector but there are certain areas where this technology could be effectively leveraged in a cost-effective way. The study showed that RFID technology has come a long way in the recent past and has potential to improve productivity and efficiency of the healthcare sector.

Wyld’s (2008) study focused on the fast-growing problem of counterfeit prescription drugs and the steps being taken by both the private and public sectors to counteract it. The author documented both the size and scope of the counterfeit pharmaceutical problem in the USA. The study recommended use of RFID technology to track pharmaceuticals in the supply chain and counter the growing threat of counterfeit drugs. The study is a valuable overview of the problems associated with the vulnerability of the pharmaceutical supply chain in the USA and the potential cost-effective, life-saving use of RFID to better secure prescription drugs, both in transit and in inventory. The study demonstrated that RFID provided the only effective method of providing “track and trace” electronic pedigrees for prescription drugs.

(5) Fast Moving Consumer Goods (FMCG)

Miragliotta et al (2009) described an analytical model to assess the costs and benefits of RFID in FMCG supply chain. They presented an in-depth literature review and a classification of the main contributions regarding the assessment of RFID applications. The impact of RFID technology on supply chain processes has been modelled using an activity-based approach. The model was validated based on a discussion with logistics and SCM managers of thirty FMCG companies. They concluded that the pallet tagging
showed limited benefits, whereas the actual potential of RFID was in the case level tagging. The study also concluded that the profitability of these projects was significantly affected by the costs of RFID tags and by the characteristics of the baseline supply chain in terms of efficiency, quality requirements and product features. The model provided a clear assessment of how and when a positive return on investment in terms of cost and performances could be achieved.

(6) Fiber Industry
Kwok and Wu (2009) in their study aim at describing the design of a radio frequency identification (RFID)-based intra-supply chain (intra-SC) system, which could enhance coordination, and integration of supply chain functions and activities eventually enhancing the overall performance of a supply chain. The structure of the intra-SC system is designed for a chain of entities in the textile industry. These entities were a fiber producer, fiber dyeing producer, yarn spinning producer, knitting and finishing producer, distributor, and a textile retailer. The system was designed to tackle issues related to information invisibility, which is considered a huge cost lost for obsolete stocks and ineffective intra-SC operations in the textile industry. The major difficulties encountered by the supply chain participants were short product life cycle and high forecast errors. The research concludes that implementation of the RFID based intra-SC system improves, operational time, costs, lead-time, and accuracy of inventory holding and cycle time operations. It is of great benefit to the manufacturer as it helps seek obsolete stock effectively and capture real-time data automatically.

The determinants of RFID technology adoption are technological, organizational and environmental. Companies' willingness to adopt RFID technology is significantly influenced by the explicitness and accumulation of technology, organizational encouragement for innovation, quality of human resources, and governmental support. There is a positive association between the willingness to adopt RFID technology and supply chain performance for service providers. (Lin and Ho 2009).

Mehrjerdi, (2010) reviewed key points about the radio frequency identification, and productivity enhancement in SCM through the use of radio frequency identification. The methodology was case study wherein the author briefly reviewed some applications of radio frequency identification in supply chain and five cases of radio
frequency identification implementation in supply chain were discussed. The study found that to make supply chain system successful operational manufacturers can use radio frequency identification solutions to reduce operating costs through decreasing the labor costs, claims, and returns. This will help them to increase the operating income. Working capital can also be reduced by enabling reductions in inventory and lowering the inventory write-off from the return goods and those items that are unsaleable at the end. It suggested that it is the collection of such strategies that can bring higher level of profitability and productivity to the supply chain.

Adoption of RFID has automation effects through inventory control and efficiency improvements, and informational effects through improved decision-making and production control and effective retail sales and promotions.

It leads to more information sharing, improved supply chain performance and improved customer satisfaction.

For grocery chain, benefits of RFID adoption may be in the smaller inventories and higher service levels and it has the potential to counter threat of counterfeit drugs in pharmaceutical supply chains, higher benefits could be accrued in case level tagging as compared to palette tagging in FMCG products; helps provide benefits of information visibility and thus reduce forecasting errors in garment supply chain.

2.1.2 Innovative Techniques in SCM

Hingley, et al (2007) undertook a study to investigate the implications of the introduction of radio frequency identification (RFID) tagging on suppliers and the impact it would have on suppliers of the UK grocery retail market. The research focused on two specific research questions, which were firstly “What are the implications of the introduction of RFID on suppliers?” and secondly “How will these implications impact on the success of RFID in the future?” A selection of different suppliers were interviewed. The study focused on business-to-business implications of RFID to the FMCG/perishable food sectors, notably in comprehension of supplier perspective The study found that in order to keep costs of application of RFID to a minimum, retailers and suppliers need to develop standardized but flexible systems. It also concluded that implementation of RFID should take into account the context of
supply chain power imbalance and suggested that retailers and suppliers should work together.

Hoffman and Mehra (2000) studied efficient consumer response (ECR) as a supply chain strategy in grocery businesses. They analyzed the adoption of ECR strategy by five major grocery operations in US markets and presented a management action plan for future adoption of ECR strategy by similar business operators.

Fliedner 2003 examined collaborative planning, forecasting, and replenishment (CPFR), which is a Web-based tool to coordinate the various supply chain management activities including production and purchase planning, demand forecasting, and inventory replenishment between supply chain trading partners. He defined CPFR in detail, cited benefits that have been achieved, identified obstacles to implementation, and discussed the future of CPFR.

Fernie in 1994 discussed the development of quick response techniques in different parts of the world, notably the UK, USA, continental Europe and Japan. He focused on grocery markets where arguably quick response should be a part of corporate philosophy. The study demonstrated that enabling technologies like quick response were in place but its success at reducing inventory through the supply chain and in minimizing lead times varied from country to country and also between companies in specific countries. The study also found the reasons for such variations which were the nature of retailer-supplier relations, the degree of fragmentation or concentration of retail markets, the extent of retail branding and the distribution “culture” evident in different parts of the world.

Warkentin et al, in 2001 evaluated the increase in inter- and intra-organizational knowledge sharing capabilities brought about by the Internet-driven “new economy” technologies and the resulting managerial implications. It built on the extensive literature in knowledge management and inter-organizational systems by identifying the opportunities of each in creating “e-knowledge networks” to support organizational collaboration. They applied the framework to four industry case studies – supply chain management networks, adserver networks, content syndication networks, and business-to-business exchange networks. The results suggested that in the new economy, characterized by ubiquitous and often automated information sharing capabilities, the
ability to create knowledge-based networks of partners would be critical to maintaining competitive advantage.

Dewsnap and Hart in 2004 proposed that the fashion industry might usefully follow the grocery industry’s lead and implement category management. The authors did a comprehensive review of the literature on category management, which highlighted the opportunity for fashion marketing to consider the potential of category management. The study was exploratory in nature and involved survey of consumers. The study found that as a consumer-oriented joint planning tool, category management offers retailer-supplier partnerships in the fashion industry an important adjunct to the industry’s quick response methods.

Adoption of innovative technologies improves performance of a SC. For RFID to be successfully deployed, retailer and supplier need to work in close collaboration. Adoption of CPFR resulted in co-ordination of production, purchase, demand planning, inventory replenishment between parties of SC. QRS helped reduce lead time and inventory in SC; but magnitude of impact depended upon the relationship between parties of SC, the degree of fragmentation or concentration of retail markets, retail branding and also culture of distribution. Further e-knowledge networks further enhance collaboration among entities of a SC.

2.1.3 Physical distribution and Digitalization

Iyer, et al in 2004 empirically investigated the relationships among supply chain B2B e-commerce, environmental uncertainty, organizational structure, and time-based delivery performance and found that B2B e-commerce enhances time-based delivery performance, the process turbulence component of environmental uncertainty has direct influence on B2B e-commerce implementation and an indirect influence as mediated by the integration dimension of organizational structure. It also found that process turbulence indirectly has a positive effect on time-based delivery performance, whereas demand unpredictability has no effect. Integration within the firm is associated with B2B e-commerce implementation, while decentralization and formal control are unrelated to B2B e-commerce.
Inkinen, et al (2009) did this study to assess electronic information transfer in logistics organizations. The paper used interview data to show information exchange patterns within one particular logistics chain. The interviews were designed according to current topics in information management literature and analyzed with content analysis. The study found the need to enhance information distribution in B2B operations. It also found that business to government operations rely, to a large extent, on a combination of paper and electronic information distribution and suggested that the government interface should also be recognized.

Relationship among SC B2B e-commerce enhances time-based delivery performance. B2B e-commerce implementation is closely associated with integration within a firm while decentralization and formal control are unrelated to B2B e-commerce. There was a need to enhance information distribution in B2B operation.

2.1.4 Logistics

Hingley, et al undertook the research in the year 2011 which aimed to investigate benefits of and barriers to the use of fourth-party logistics (4PL) management as a catalyst for horizontal collaboration. The authors conducted semi-structured interviews with three suppliers; three logistics service providers (LSPs), and one grocery retailer for this exploratory qualitative study. The study found that large LSPs could establish 4PL management but there is a deterrent that was the need of significant investment. The parties interviewed believed 4PL would negatively influence the grocery retailer-supplier dynamic but it could also provide key potential benefits. It also found that retaining supply chain control meant more to grocery retailers than cost efficiencies realized through horizontal collaboration. The study also found that barriers to such integration were created by power plays among lead stakeholders in grocery retailing that inhibit horizontal collaboration regardless of cost or other benefits.

Bourlakis and Bourlakis in 2006 investigated the integration process of retailer's information technology strategy within logistics strategy and tried to find out those aspects of the retailer's distribution and operational performance that were mostly influenced via that integration. The study used a qualitative case study methodology where the managers of the major domestic and multinational firms operating in the
Greek food multiple retail market were interviewed. The integration process of the information technology and logistics strategies of these retail firms were linked to their relevant distribution and operational functions. The study also employed secondary data from the Greek food multiple retail sector. It was found that logistics and information technology strategies were developed and implemented in a parallel way by both local and multinational food multiple retailers in Greece. Using a financial ratio analysis carried out for these firms it was found that multinational firms possessed greater operational efficiency at both secondary and in-store distribution operations compared to domestic firms, something that was largely attributed to their integration of logistics and information technology operations. It was also found that multinational firms' superior operational efficiency was resulting in a higher profitability performance.

This study done by Bourlakis and Bourlakis in 2005 investigated the evolutionary process of the retail logistics network formation, with the objective of proposing a relationship framework between the logistics asset buyer (which is the retailer) and the logistics asset supplier (which is the third-party logistics firm). The study used secondary data for the UK food retail chain and the evolutionary process was based on the way the asset specificity element of transaction costs theory could be perceived by the logistics asset buyer and the logistics asset supplier. The asset specificity element was linked to both network and buyer-supplier relationship theories with the aim of conceptualising a buyer-supplier relationship framework. A new relationship framework was developed based on the buyers'-suppliers’ perceptions in relation to logistics asset specificity, and the conditions required for the formation of the retail logistics network were illustrated. If transaction costs were perceived as high by both the buyer and the supplier of a logistics asset, the retailer would engage into a fourth-party logistics network formation where the use of information technology systems were of critical importance. At this stage, these systems would become the primary co-ordination device for the reduction and absorption of complexity in the retail chain.

Large logistics service providers (LSPs) used fourth-party logistics (4PL) for horizontal collaboration but it required significant investments to be made. The horizontal collaboration could add to cost efficiency in SC. There is great need to integrate IT
strategy to logistic strategy of the company and multi national companies (MNCs) possessed greater operational efficiency compared to domestic firms simply because of higher level of integration.

### 2.1.5 CRM

Nguyen, et al in 2007 undertook a study which aimed to put forward strategies for successful implementation of CRM and discussed barriers to CRM in e-business and m-business. The study combined narrative with argument and analysis. The study found that CRM stores all information about its customers in a database and uses this data to coordinate sales, marketing, and customer service departments so as to work together smoothly to best serve their customers' needs. The study also demonstrated how CRM, if used properly, could enhance a company's ability to achieve the ultimate goal of retaining customers and gain strategic advantage over its competitors.

Feinberg and Kadam in 2002 attempted to uncover relationships between e-CRM and customer satisfaction by determining the presence of e-CRM features on retail Web sites. The study also attempted to determine if the amount of e-CRM was related to customer satisfaction or which, if any, of the various features of e-CRM were related to customer satisfaction. The study found that retailers differed in the presence of the 42 different e-CRM features; that there was a positive relationship between the amount of e-CRM on a Web site and customer satisfaction with the Web site; and that not all e-CRM attributes were equal — some were related to satisfaction and some were not. It also concluded that there was no relationship between the level of e-CRM on a retail Web site and sales and profit.

Feinberg, et al in 2002 undertook study to analyze the availability of electronic customer relationship management (E-CRM) features on retail Web sites and their relationship to consumer satisfaction and site traffic. The authors analyzed top 100 specialty store, standard retail store, and Internet retailer Web sites for the presence of 41 E-CRM features. The availability of these features was then assessed for their relationship with consumer traffic to the site and customer satisfaction with the site. The study found that internet retailers were significantly more likely to have E-CRM attributes on their site and that only the chat feature, spare parts availability, gift
certificate purchase, mailing address, search engine, links, and a company profile were associated with customer satisfaction. The study also found that no E-CRM feature was associated with customer traffic to a site, standard retailers appear to be behind in implementing E-CRM features in current operations.

Curry and Kkolou in 2004 undertook a study and presented a self-assessment tool which organizations could use to evaluate their use of CRM. The authors used three case study examples to illustrate how the tool could be used. They analyzed the examples in terms of key CRM criteria to show where their relative strengths and weaknesses lay. The case examples encompass a spectrum of approaches that work well in terms of sustained customer orientation. To draw conclusions about the cases displayed in the form of positioning maps the CRM factor evaluation matrix and the balanced scorecard were used. The study found that all the case organizations had strong profiles for different reasons. Boots the Chemists emerged as particularly well performing in terms of the sophistication of their approach to CRM and had a consequent beneficial effect on the organization's TQM culture.

Lee-Kelley, et al did the study in the year 2003 and provided evidence of how to improve planning for customer management by presenting and testing a conceptual model of the process by which the implementation of electronic relationship marketing (e-CRM), could enhance loyalty. The authors while building the framework found, price sensitivity to be a primary confounding element on loyalty and was included in the study for control. An exploratory study of Internet retailers, e-retailers, and their customers was conducted and the findings revealed that e-retail companies dealing in products like CD, DVD, video and book products should consider customers' perceptions of relationship marketing efforts, as they were fundamental to enhancing customer loyalty and that an enhancement of customer loyalty reduces price sensitivity.

CRM application stores and uses information about customers to co-ordinate sales, markets and customer service to derive competitive advantage. Also there was a significant relationship between e-CRM on websites and customer satisfaction but no relationship between customer traffic. Further e-CRM had relationship with customer loyalty.
2.1.6 Sourcing

Cox, et al (2007) undertook a study with the aim of proving that a proactive sourcing strategy could be just as important as a proactive marketing strategy in achieving sustainable competitive advantage. The methodology is inductive and qualitative, using a multi-case, multi-site approach and was based on action research carried out in the UK beef industry, with a focus on the food service supply chain. Multiple participants were interviewed at various stages of the supply chain starting from farm gate to the consumer. The research offered partial support for configuration-based approaches but also raised doubts as it is not the complexity or ambiguity of the relationships that is key in the case, but the fact that brand ownership and contracts created property rights for their owner that created a relatively permanent power resource for Pioneer, the case study company, in its market struggle with its customers and competitors. The power and property rights views of strategic management is supported by the research more than the configuration approach. The case study has also illustrated the importance for business managers of linking this sourcing strategy with a firm's marketing, and more specifically its branding strategy.

Zeng (2003) adopts a process viewpoint and examines the design and management issues associated with the global sourcing process. This is based on a case study at a leading firm in the US aviation industry. The study evaluated the effectiveness of the company's global sourcing process, compared the design alternatives of the supply chain structure, and summarized the critical issues of efficient management of the process. It also developed three logistics-based criteria to indicate the effectiveness of the transportation and distribution network. The process design can be assessed based on the dimensions of supply chain integration is also demonstrated and a flow-level matrix is developed to identify the critical issues of managing the global sourcing process.

The research by Ho, et al (2011) aimed to develop an integrated analytical approach, (combining quality function deployment (QFD) and analytic hierarchy process (AHP) approach) to enhance the effectiveness of sourcing decisions. AHP is used to determine the importance of evaluating factors and preference of each supplier with respect to each selection criterion while QFD is used to translate the company stakeholder
requirements into multiple evaluating factors for supplier selection, which are used to benchmark the suppliers. Application to UK based automobile manufacturing company is used to demonstrate the effectiveness of the approach.

Wagner, et al (2005) studied the SME’s with the purpose of gaining insight into attitudes and perceptions of supplier development and local sourcing programmes in the UK grocery retail sector. A qualitative approach to data collection was undertaken using semi-structured in-depth interviews as the research was exploratory in nature. The study concluded that retailers do seem to be undertaking supplier development as defined in the literature but the data collected highlights some of the difficulties experienced by all suppliers in supporting grocery retailer category management and branding strategies. The paper offers an insight into the debate on SME supplier development and local sourcing by providing empirical evidence of the current shape and scope of the various initiatives in the UK grocery sector and stated that local sourcing also implies the involvement of the micro-enterprise producer which had the potential for greater levels of power and trust imbalance.

Sourcing strategy to be successful should be integrally linked with a firm’s marketing and branding strategy. Retailers take interest in developing suppliers, but in turn suppliers are not very effective in supporting retailer in their category management and branding strategies.

2.1.7 Electronic Data Interchange (EDI) and SCM

Supply chain management (SCM) is about enhancing relationship between a company and its suppliers and customers. It is characterized by inter-organizational coordination to enable companies to work jointly with their customers and suppliers to integrate activities along the supply chain to more efficiently supply product to end users. Standardised systematic integration is an indicator of evolved SCM and automatic inter-organizational interfaces. Such systematic integration is enhanced by Information technology (IT) usage by enabling more efficient and automatic information flow. Hill and Scudder (2002) studied the impact of electronic data interchange (EDI) on inter-organizational information transfers in the supply chain. Data from a survey of the food industry was utilized to examine the use of EDI with respect to inter firm coordination.
activities involving suppliers and customers. The influence of demographic characteristics on EDI use was also investigated. The study concluded that EDI was viewed more as a tool for improving efficiencies rather than a tool for facilitating integration of supply. It further concluded that there was a difference in firm's use of EDI in relation with customers than to suppliers as firms had a tendency to be much more accommodating to the desires of their customers than of their suppliers.

2.1.8 Broad non-food merchandize

Chu, et al (2010) aimed to examine whether brand image and evaluation mode could alleviate a negative Country of Origin (COO) effect. A 2(COO)×2(brand)×2(evaluation mode) experimental design was employed in order to examine whether brand and COO effects on product evaluation vary under different evaluation modes. The data were analyzed by a repeated measure MANOVA. The results showed that products made in favourable countries were rated higher in joint evaluation mode than in separate evaluation mode. Conversely, products made in unfavourable countries were better evaluated in separate evaluation mode than in joint evaluation mode. The results of the study are not in favour of the notion that a strong brand image could overcome the negative effect of COO.

A strong brand image cannot overcome a negative effect of COO.

2.1.9 Virtual stores

Kim and Jin (2006) undertook research with the aim of presenting a general overview of the characteristics of virtual communities hosted by apparel retailers. The authors did a content analysis on 2,521 web sites hosted by apparel retailers which were identified from Stores Magazine “top 100 specialty retailers” and “top 100 retailers” listings, and Google search engine directory. Web sites were analyzed in terms of general characteristics of apparel retailers (e.g. apparel product categories, ability to purchase online, presence of brick-and-mortar stores). The authors found that apparel retailers selling casual merchandise to the young teen market had the strongest representation and a total of 13 virtual communities hosted by apparel were found. Most of the virtual communities used bulletin or message board tools. About half of the virtual communities had registration requirements and rules or membership policies.
Manganari, et al (2011) did a study with the purpose of examining the virtual store layout’s perceived ease of use effects on consumer behaviour and the perceived differences of two layout patterns most commonly used in air travel web sites which are grid and freeform layout. Structural equation modeling (SEM) was used to evaluate the research model and test the research on data collected through a laboratory experiment from a total of 241 students at a business school. The results confirmed and extended available knowledge regarding virtual store layout effects on shopper responses. Findings also implied that layout pattern affects perceived pleasure and not ease of use in the investigated sector. The study also confirmed the moderating role of atmospheric responsiveness.

Fiore and Kelly in the year 2007 did a study to examine major issues related to integration of auditory features at online stores with reference to social and experiential implications of implementing auditory atmospherics, product presentation techniques and other features to the online context. The researchers surveyed a total of 70 online retail, manufacturer and representational web sites for recording and categorizing their use of sound. Discussion was developed on projected directions for the use of sound online, adopting examples like product demonstrations to highlight conceptual and practical differences. The study found that most of the web sites using sound are large corporations who employ audio features to enhance the display of selected products and within multimedia features. The study discussed the potential impact of auditory technologies for social and experiential aspects of shopping online and on how sound could better be used to overcome physical barriers between shoppers, products and the retail environment and to increase the potential for more fulfilling shopping and consuming experiences. This work provides a cross-disciplinary basis to guide initial developments in the integration of auditory features in online stores with regard to potential social and experiential implications for users.

Jang and Burns in 2004 studied apparel websites with the aim of investigating components of apparel Web sites and to examine whether differences existed among the types of Web retailers in their components. For the purpose, thirty-six apparel Web sites were classified into four categories: virtual e-retailer, catalog company, bricks-and-mortar retailer, and multi-channel retailer. The Web sites were analyzed according
to the components of the apparel Web including merchandise, promotion, and customer service. Significant differences were found among the four types of Web retailers with regard to components (product description, product price information, advertising, catalog service promotion, placing order, and returns policy) included on the Web sites. The study also found that current competition among Web sites is not based on what information is available, but how information is provided.

Kim and Stoel in 2005 studied customers with the aim of exploring online customer service dimensions and to examine how attitude towards online customer service influence online purchase intent. The study employed human factors approach to identify online customer service dimensions by analyzing service provided by salespeople at retail stores. Regression analysis supported the predictive validity of these measures, revealing that customer service dimensions of ease in searching, availability of frequently asked questions (FAQs), availability of in-stock status information, and ease of comparison shopping were important predictors of online purchase intent. Results from this study suggested that online retailers needed to provide more information (e.g. FAQs) and make browsing easier to help customers have satisfactory shopping experience.

Hannu Yrjola (2003) conducted a study with the objective of describing an evolutionary model for traditional grocery traders to start Electronic Grocery Shopping (EGS) gradually, mainly based on investments already made. It studied, in detail, the cost structure of some essential elements of the new supply chain and presented the initial results. It found that to become a viable option for consumers the EGS has to be supported by a completely new logistics structure in which the Internet could be used to connect all parties in the supply chain to the same real time information. It further concluded that the supply chain (from the supplier to the household) also needs to be redesigned.

Smaros and Holmstrom (2000) analyzed the opportunities offered by bar code and radio frequency identification (RFID) technology to develop a new type of e-grocery related service, namely vendor-managed inventory (VMI) in the household. It addressed a number of key operational issues i.e. data capture, solution robustness and cost saving potential in the supply chain and concluded that the development of new
value offerings such as VMI was critical in e-grocery businesses to gain a competitive advantage over traditional retail formats.

Delaney-Klinger, et al (2003) undertook an examination of the Internet grocery industry. The methodology was case study. It compared two business models, that of the now-defunct Webvan and that of Tesco. It compared the two businesses according to the level of strategic alignment between marketing and operations strategies displayed. It demonstrated how creating a match between a firm’s operations and marketing strategies was critical for success. It also used an e-operations profiling method to compare the operating characteristics of the two e-commerce ventures to traditional business operations. It made predictions offered as to the future of electronic commerce in the grocery industry and also reflected why Tesco and other bricks-and-mortar grocers had achieved greater success selling groceries online than did Webvan.

Clewley, et al (2009) examined the credibility which refers to believability of information as it is an important consideration of Internet shopping. The authors did an evaluation, which was conducted by incorporating Fogg's 10 Stanford Guidelines for Web Credibility into Nielsen's heuristic evaluation. Furthermore, security and individualization were considered as additional heuristics. Evaluation criteria were developed based on these 12 heuristics. Three UK car insurance web sites were selected for evaluation, including the AA, Norwich Union and Tesco. The results showed that the Norwich Union site seemed to be the most credible while the Tesco site appeared to be the least credible. The most significant credibility problems were found to lie in the areas of “trustworthiness”, “expertise” and “real-world feel”. In other words, these three areas were key issues for future improvement of these sites.

Ellis-Chadwick, et al (2007) did the study with the aim of developing a better understanding of the expansion and development strategies used by retailers based in the UK for creating sustained competitive advantage in online grocery retailing. The authors addressed the objectives of the research by using a qualitative research strategy consisting of two specific methods of data collection: primary and secondary data collection. The study suggested that retailers have tended to follow an incremental approach towards the development and expansion of their online service provision. This route to expansion involved the trialing of new ideas, keeping close watch on the
competition while endeavoring to introduce innovative new services to capture consumer interest and deliver customer benefits.

Xing et al, did this study in 2011 focusing on the growth of online shopping. It presented challenges for physical distribution service quality (PDSQ) provided by retailers due to the growth of online shopping. Issues emerging from a consumer survey regarding electronic physical distribution service quality (e-PDSQ) formed the base of their study. The research study employed qualitative interviews with retailers, logistics service providers and experts to consider the consumer survey findings and discuss the current market situation and suggest improvement. The study found that the pure players offer better e-PDSQ than multi-channel retailers as well as important constructs of availability, time, condition and returns regarding this phenomenon. The study also raised issues of relationships between retailers and LSPs and costs regarding service trade-offs.

If traditional store is extended to make provision for virtual store; it needs to be supported by a totally new logistics structure wherein the Internet could be used to connect all parties of a SC. It also suggests a total re-designing of the SC. Also success of virtual store depended upon trust expertise and real world feel. Virtual store layout pattern affects perceived pleasure more than ease of use. Virtual stores also use online sound to overcome physical barriers between shoppers, products and retail environment and to increase the potential of a more fulfilling shopping experience. Different categories of virtual stores (web retailers) display differences in product description, pricing information, advertisement catalog, and service promotion, placing of order and returns policy. Competition of these stores is based majorly not on what information is provided but more so on how the information is provided. Decision to purchase online is influenced by factors like ease of search, availability of frequently asked questions, in-stock status information and ease of comparison-shopping.

2.1.10 E-Procurement and SCM

The adoption of e-procurement has been in use for supply chain management. There is no significant research examining the critical role of quality in this context. E-Procurement cuts operational costs all across the supply chain, but it raise the
expectations of buyers posing a challenge for supply chain satisfaction and supply chain performance. Using the theoretical lens of Dynamic Capabilities Theory and Resource-Based View, the writers suggest that online information and process work as resources that result in logistics fulfillment capabilities. These capabilities in turn lead to satisfaction with e-procurement. The methodology was survey based wherein data was collected from 131 purchasing and procurement managers. A research model was developed using structural equation modeling. The linkages had been empirically examined by analyzing data collected from procurement managers. The results suggested strong support for the relationships between information flow process quality, logistics fulfillment quality processes, and e-procurement satisfaction performance. Their study concluded that fulfilled order timeliness has a greater impact on satisfaction than fulfilled order accuracy. These findings pointed to the important role the dimension of time plays in today's competitive environment. (Vaidyanathan & Devaraj, 2008)

EDI helped to bring more to operational efficiency rather than bring integration between entities of SC. Further organizations used EDI more to link with customers rather than suppliers.

2.1.11 Private Labels

Pepe, et al did this study (2011) with the purpose of investigating the influence of private label resources possessed by a supermarket retailer on the shopping behavior of loyal customers. The study examined whether private label products could help in the overall enhancement of product category performance. The study examined the performance of a supermarket retailer in the Northeast United States that operated over 100 stores and generated a total yearly sales volume in excess of $3 billion. Data obtained from the Supermarket's point of sale information were used. The study concluded by developing a research model from the literature review and used structural equation modeling to analyze the data. The findings showed that overall dollars spent by loyal customers significantly impacted overall profitability. It also found that private label products could represent increased profitability for retailers and consumers preferred a full assortment of merchandise. It also concluded that an over
emphasis on private label brands could however result in diminishing category performance.

A relationship was established between private label products and performance of a product category. Private label products helped to increase profitability for retailer but an over-emphasis on private label brands could in the long run result in reducing the performance of the product category. A strong growth of private brands has been noted with a market share of 30% of total retail sales. Benefits accrue in the form of reduction of price of national brands but benefits of supply chain accrue only when cross elasticities are small.

2.1.12 Supply Chain and Inventory Management

Fleisch and Tellkamp (2005) examined the relationship between performance of retail supply chain and inaccuracies in gauging inventory. The examination is done by simulating a three-echelon supply chain with one product by exchanging end-customer demand between the echelons. In the base model, without alignment of physical inventory and information system inventory, inventory information becomes inaccurate due to low process quality, theft, and items becoming unsalable. In a modified model, these factors that cause inventory inaccuracy were still present, but physical inventory and information system inventory were aligned at the end of each period. The results indicate that an elimination of inventory inaccuracy could reduce supply chain costs as well as the out-of-stock level. It further concluded that automatic identification technology offered the potential to achieve inventory accuracy.

2.1.13 Efficient Consumer Response (ECR) and Grocery

Efficient consumer response (ECR) is a grocery industry supply chain strategy designed to make the industry efficient and more responsive, ECR is enabled by the use electronic commerce (EC). Despite the fact that ECR can bring many benefits, the adoption rate has been slow in many regions. There is no well-developed theory of adoption of technologies at this wide scale that can explain this slow uptake at this stage. Kurnia and Johnston (2003) studied the Australian grocery industry with the objective of exploring its experience with ECR adoption. A combination of both quantitative and qualitative research methods is employed to obtain a more reliable
snapshot of ECR adoption practices, the barriers and hindrances to it and also perceptions. As the Australian grocery industry has a unique structure, important observations obtained from this study provide a unique and different perspective and enrich previous ECR adoption studies.

This research by Mejias-Sacaluga and Prado-Prado (2002) aimed to highlight the importance of adequately defining relationships between firms in a supply chain management (SCM) framework as the basis for its integrated functioning. The authors use an empirical study to analyze the state of manufacturer-retailer relationships and the implications of these on efficient functioning of the grocery supply chain in Spain with Efficient Consumer Response (ECR) as a backdrop. Using personal interviews with logistics managers in forty eight manufacturers and retailers in Spain, the study focused on the order fulfillment or demand satisfaction logistics process, and concluded that there was willingness for collaboration among the enterprises using best practices and information and communication technologies (ICT's) associated with ECR.

This study done by Hoffman and Mehra (2000) discussed efficient consumer response (ECR) as a supply chain strategy in grocery businesses. It analyzed the adoption of ECR strategy by five major grocery operations in US markets and illustrated a management action plan for adopting ECR strategy in the future by similar business operations.

Martens and Dooley (2010) reappraised efficient consumer response (ECR) in the grocery and food industry to determine whether financial and operating performance improved with adoption of ECR. The authors used a time-series multiple regression model for the study and concluded that ECR adoption has beneficial impacts for both financial and operational performance in the food and grocery industry.

Holmstrom (1997) undertook a study with the objective of identifying the issue of product range management in European supply chain operations and the role it played in achieving efficient consumer response in the regional markets within the EU. It did so by assessing the supply chain performance of a select European supplier from the perspective of a regional market. It highlighted that supply chain management played a very important role for the groups managing large product range in different markets.
and for different customer groups. It also illustrated some alternative tactics for achieving the strategic goal of continuous supply in small regional markets.

Though ECR adoption leads to improvement in financial as well as operational performance of SC; and there exists willingness amongst different parties of SC to collaborate; the rate of adoption has been very slow.

2.1.14 Manufacturer and Retailer relationship

Daugherty (2011) undertook a study with the aim of providing an overview of the evolution of relationship-related research in the area of logistics and supply chain management. The methodology adopted was a review of previous literature. It concluded that the literature related to logistics and supply chain relationships have become increasingly sophisticated over the years but there still remains many opportunities for extending the literature base. It also raises questions regarding the long-term success of many partnership or alliance-type relationships.

Hammervoll and Bo (2010) did this research with the aim of finding the efforts of a wholesaler in overcoming one of the main barriers to successful marketing channels, which was defined as the “transparency problem”. The authors developed a decision-support tool, which was capable of providing detailed cost-analysis of transportation arrangements. It was an action research project set up to improve information exchange of sensitive information between a shipper and two carriers in a Norwegian grocery supply chain. The study found that the application of the decision-support tool helped to strengthen the relationship between the players by transforming arm's-length transactional relationship to integrated collaborative relationship. This enhanced communication and trust between the parties and brought about substantial savings in distribution costs. The study provided practical suggestions for achieving mutual benefits from closer collaboration between buyers and suppliers of transportation services.

Fernie, et al (2010) overviewed the logistical transformation of British retailing over the last thirty years and discussed the likely challenges that face logistics managers in the future. The authors reviewed the key works on retail logistics from researches undertaken by the authors over the last two decades. The study highlighted challenges
for the future, which included macro-environment issues such as climate change, recession and improvements in operations with regard to e-fulfillment and implementation of technologies such as RFID. It illustrated how retailers had achieved control of the supply chain in the UK by drawing upon examples from both the grocery and fashion sectors.

2.1.15 Green SCM

The supply chain has been traditionally defined as a one-way, integrated manufacturing process wherein raw materials are converted into final products, and then delivered to customers. According to this definition, the supply chain includes activities that are associated with manufacturing only, that are from procurement of raw material to delivery of the final product. The recent changing environmental requirements affecting manufacturing operations has made it necessary to change certain rules, increased attention is being given to developing environmental management (EM) strategies for the supply chain. Beamon (1995) focuses on investigating the environmental factors leading to the development of an extended environmental supply chain, describes the elemental differences between the extended supply chain and the traditional supply chain and also attempts to describe the additional challenges presented by the extension of SC. It also presents performance measures appropriate for the extended supply chain and tries to develop a general procedure towards achieving and maintaining the green supply chain.

Organizations are adopting green practices to enhance performance of a supply chain, but this leads to increase in the challenges faced by the organization.

2.1.16 Supply Chain and Performance

Trkman et al's (2010) study investigated the relationship between analytical capabilities employed in the planning, sourcing, making and delivery area of the supply chain and performance where information system support and business process orientation were used as moderators. Structural equation modeling has been done by employing a sample of 310 companies from different industries from the USA, Europe, Canada, Brazil and China. The study concluded that there existed a statistically significant relationship between analytical capabilities and performance. The
moderation effect of information systems support is found to be considerably stronger than the effect of business process orientation. The results also provide an understanding of the areas where the impact of business analytics could be strongest.

In their research endeavor, Reiner and Treka (2004) pointed out that an analysis of a supply chain must be very product and company specific. Therefore they suggest an improvement model that helps enhance the performance of a specific supply chain. A target system for supply chain evaluation that was necessary to analyze different improvement alternatives was introduced. It was shown that the ideal robust supply chain setting depends on the demand situation, which is either smooth or volatile. This model was illustrated in detail. The present research studied a product-specific supply chain in the food industry, analyzes the effects of changes carried out and shows how demand uncertainties are dealt with. To measure and analyze the performance effects a simulation environment is developed.

Performance measurement of entire supply chains allow for tracking and tracing of efficacy and efficiency failures and leads to more informed decision making with regard to chain design hence making it an important issue. But the choice of appropriate supply chain performance indicators is a complicated issue due to the presence of multiple inputs and multiple outputs in the system. The paper aims to evaluate the usefulness of a novel conceptual model for supply chain performance measurement in an agri-food supply chain. This is the first step in developing an integrated performance measurement system that contains financial as well as non-financial indicators combined with the specific characteristics of agri-food supply chains. This is done by evaluating a conceptual model for integrated supply chain performance measurement in a Dutch-German tomato supply chain by means of a case study approach. The proposed conceptual framework is found to be useful for measuring performance of the tomato supply chain. From the case study it is concluded that four main categories of performance measures, which are efficiency, flexibility, responsiveness, and food quality, are a key performance components of the tomato supply chain performance measurement system. (Aramyan, et al. 2007)

Achieving end-to-end traceability across the supply chain is a significant challenge from a technical, co-ordination and cost perspective. The research by Keleporis et al
(2007) aims to study and examine how the technology of radio frequency identification (RFID) technology can address the main requirements of traceability. They propose an information data model and a system architecture that would make traceability feasible and easily deployable across a supply chain. The design research approach is followed to associate traceability requirements to a proposed system design. They found that technological approach use. It has great implications in relation to the cost associated with a traceability system and the ease of its deployment. Validation of the proposed information data model and system architecture was required through practical deployment in different settings. Their research/ study paper provides practitioners with insight on what technological approach is more appropriate and how RFID technology could meet traceability requirements and contribute by suggesting a specific technological approach, exploiting the new possibilities provided by RFID technology, to address these issues.

Studies indicate that there exists a significant relationship between analytical capabilities used in planning, sourcing, making and delivery and performance of supply chain. Also results of studies cannot be generalized for every industry; they should essentially be product or company specific. Further traceability across supply chain poses challenge from technical, cost as well as co-ordination perspective.

2.1.17 Supply Chain and Macro Environment

Feame and Hughes (1999) present recent evidence of supply chain developments in the UK fresh produce industry. The methodology was survey based wherein interviews with chief executives from the country's most successful suppliers were undertaken. A number of success factors were identified which were continuous investment (despite increasingly tight margins), good staff (which was key to driving the process of innovation and developing good trading relationships with key customers), volume growth (for funding the necessary investments and provide a degree of confidence), improvement of measurement and control of costs for gaining efficiency, and innovation (not just in terms of the product offer but also the level of service) and the way of doing business with key customers.

Growing world population and depletion of arable land demand controlling the
sustainability of agricultural inputs to the industry. Control over the sustainability of
the said supplies implies controlling the economic, social, and environmental
performance of the supply chain. Not much is known about how companies can
efficiently extend the scope of their existing supply chain controls to cover the above
stated aspects. This study by Hamprecht et al (2005) is an effort towards addressing
this particular gap. A method for integrating the controls of social and environmental
performance in a supply chain controlling framework has been proposed, The
methodology was case study of Nestle’s food supply chains. The study highlighted the
importance of quality controls along the whole food supply chain sustainability and is
useful for the food industry in the control of sustainability of agricultural inputs to the
industry.

2.1.18 SCM and Integration

The term “supply chain management” is frequently used in today’s materials
management environment and is generally associated with advanced information
technologies, rapid and responsive logistics service, effective supplier management,
and customer relationship management. Most materials managers are familiar with the
supply chain mantra of “suppliers’ supplier to customers’ customer”, but research
shows that few companies are actually engaged in such extensive supply chain
integration. Fawcett and Magnan (2003) undertook the study with the objective of
obtaining an accurate view of currently practiced SCM. The methodology adopted was
both surveys and case study interviews. They concluded that supply chain practice
seldom resembles the theoretical version. The paper identifies three different levels of
SCM implementation and also a number of limiting factors. It finds that managers must
recognize the tension that exists between SCM’s competitive potential and the inherent
difficulty of collaboration. (Fawcett and Magnan, 2002)

There has bee a profound change in the understanding of the dynamics of competitive
advantage. Managers now acknowledge that a firm’s success is tied partly to the
strength of its weakest supply chain partner. Spekman, et al (1998) developed the
concept of supply chain management and argues that one can only fully achieve the
benefits of cost reduction and revenue enhancing behaviors through close collaborative
linkages through the entire supply chain. It presents data that look at a range of supply
chain management practices and processes. Attempts are made to better understand challenges facing managers who advocate supply chain management by examining differences in practices and processes between buyers and sellers, along with the supply chain. The work proposes a change in mind set for the traditional procurement manager and presents insights for them to adapt to the requirements of the new competition.

Fawcett, et al (2008) provide a quantitative and qualitative analysis of the benefits, barriers, and bridges for making collaboration successful in strategic supply chains. The methodology adopted was a review of literature, the cross-channel analysis, and case studies. They studied a macro picture of the goals, challenges, and strategies for implementing supply chain management.

The study found that customer satisfaction and service was perceived as more enduring than cost savings; technology, information, and measurement systems are considered as major barriers to successful supply chain collaboration by all the managers and people issues such as culture, trust, aversion to change, and willingness to collaborate were found to be more intractable. Research finds that people are the key bridge to successful collaborative innovation and should therefore not be overlooked as technology, information, and measurement systems. It further provides a new insight into understanding the success and hindering factors of supply chain management.

Ellram, et al (1996) undertook research with the objective of identifying current logistics practices and trends. The methodology was survey based. The focus of the survey was on customer service factors, use of a supply chain management approach in retailing channels, and the impact of information technology on retail logistics today and in the future. The study concluded that 1990s would likely be an exciting and challenging time in the management of the retail logistics function based on the importance that retailers attach to customer service, supply chain management and information technology.

Storey, et al (2006) undertook the research with the objective of critically assessing current developments in the theory and practice of supply management and tries to utilize the assessments to identify barriers, possibilities and key trends in the current supply chain management scenario. Their research was based on detailed study of six supply chains, which encompassed 72 companies across Europe and was conducted
over a span of three years. The firms under the lens in each instance were sophisticated, blue-chip corporations operating on an international scale. The supply chains were traced and observed and managers across at least four echelons of the supply chain were interviewed. They concluded that supply chain management is still only emerging in both theory and practice. Few practitioners were able or even seriously aspired to extend their reach across the supply chain in the manner prescribed in modern theory. The study also finds a range of key barriers, hindrances and enablers to supply management and ends with an assessment of the main trends. It presents a number of challenges to existing thinkers about supply strategy and supply chain management and reveals that the substantial gaps between theory and practice still exist.

Gimenez and Ventura (2003) studied the Spanish grocery sector to analyze the relationship between internal and external integration processes, their effect on firms' performance and their contribution to the achievement of competitive advantage. It analyzed performance improvements through costs, stock-out and lead-time reductions and measured achievement of a better competitive position by comparing the firm's performance with its competitors' performance.

Hendrickson et al (2001) study focused on restructuring of the retailing and processing sectors. The methodology was case study and of dairy sector of USA. They discussed the restructuring of the food production, processing and retailing sectors in the USA and described different methods of vertical and horizontal integration that have occurred. Authors also discussed the consolidation of business in retailing and referred to the relationships that were being formed between the supermarket chains, Wal-Mart and Kroger, and dominant food-chain clusters. It also considered whether or not smaller retail chains and wholesalers should feel threatened by the consolidation

Though theory on supply chain (SC) propagates extensive integration in SC extending from supplier's supplier to customer's customer, in practice it is adopted by very few companies because of difficulty in collaboration. The many barriers to collaboration were technology, information and management systems.
2.1.19 Supply Chain and Organization Structure

Caputo and Mininno in 1998 presented the results of the survey named “Organizational structures and logistics in the branded product history of the grocery section in Italy.” The survey was undertaken with the aim of pointing out the organizational structures for the logistics co-ordination of successful firms. The study undertook a review of literature of the main logistics organization theories and presented an organizational analysis of 118 industrial firms operating in Italy in the grocery sector. It proposed a classifying model of the organizational configurations presently adopted in Italy for internal integration. The model identified six different organizational solutions which were integrated logistics, partially integrated logistics, bipartite logistics, distribution logistics, manufacturing logistics, and split logistics.

The study was done by Alonso in 2011 about Muscadines (Vitis Rotundifolia Michx.), a vine native to the southern USA which is processed into different products, including wines. The study explored to what extent wineries were engaged in relationships with local or state restaurants. It also focused on challenges that wine operators face in the process of seeking to market their wines to hospitality operations. Data was collected from thirty one winery owners located in different southern states, including Alabama, Florida and North Carolina. The methodology adopted was telephonic interviews. The study finds that almost half of the respondents (15, 48.4 per cent) acknowledged synergies between their wineries and hospitality businesses; however, the other 16 (51.6 per cent) were not involved in such relationships. Such absence of networks and relationships is to a great extent due to concerns of surrendering control of their wines to wholesalers and distributors (in many cases winery operators are not allowed to sell directly to restaurateurs), and the apparent lack of appreciation of muscadine wines by many hospitality businesses.

Chung, et al in (2010) researched to examine the influence of market orientation on Chinese buyer-supplier relations. A model is proposed depicting relationships among retailer market orientation, supplier market intelligence, supplier role performance, and retailer economic and social satisfaction. The authors collected data from ninety nine chain store buyers and managers from twenty five cities in China. Structural equation modeling was used to analyze the data. It found that retailer's market orientation is
critical for its own economic and social satisfaction by increasing supplier market intelligence (MI) and supplier role performance. It also found that economic performance was more important in channel relationships than social relationship and hence suppliers should focus on improving retailers' economic satisfaction through role performance and market intelligence rather than social satisfaction.

Jalalvand, et al, (2011) did the study with the purpose of developing a method to compare supply chains (SCs) of an industry in the scope of supplier's supplier to customer's customer. The proposed method is based on five processes provided in SCOR model version 9.0 (plan, source, make, deliver and return) and main business stages of the industry. It uses Data Envelopment Analysis (DEA) and PROMETHEE II, a multiple criteria decision-making technique, as tools to compare SCs in the process level, business stage level and SC level. Therefore, the method is basically a new combination of existing models and methods including SCOR model, DEA and PROMETHEE II. To show the applicability and strength of the method in comparing SCs, it has been implemented in the seven SCs of the Iran broiler industry as a case study. The study concludes that comparing SCs of an industry via the proposed method results in process benchmarking, business stage benchmarking and SCs ranking in the scope of supplier's supplier to customer's customer.

The application of decision-support tools strengthens relationship between different entities of a supply chain and increases communication and trust between them. However it is suggested that 'economic satisfaction' played a more important role than 'social satisfaction' in such relationships.

2.1.20 Pricing and Quality

Potter, et al (2007) undertook a study with the aim of analyzing the reasons behind the leadership shown by a retailer through the introduction of factory gate pricing (FGP) within the grocery sector. It also evaluated the transport management techniques used to support FGP and the operational benefits gained. This study is based on a single case study of a UK grocery retailer, which had adopted FGP. A range of data sources had been used during a project with the retailer. The various techniques used include process mapping, interviews, workshops and company presentations. The study found
that the introduction of FGP had provided economies for the retailer strengthening its position in the market. Different transport management techniques had been deployed which generated reductions in transport and inventory costs and improved customer service levels. The study concludes that FGP requires a certain degree of scale to be effective, and should complement the current processes within a business. Also there was a need to manage relationship issues with suppliers and transport providers.

Fotopoulos, et al (2011) used a sample of 997 consumers that aimed to validate the 40-item Schwartz's portrait value questionnaire (PVQ) typology. The methodology adopted was survey. It was undertaken to investigate whether higher-than-average regular purchasing of quality food products (i.e. organic and PDO labelled products) coincides with stronger identification with specific PVQ values. The authors used confirmatory factor analysis and cluster analysis as the main analytical techniques. The study found that at the value-based segmentation level of the analysis, identification with the PVQ value domains decreased per cluster progressively and jointly for almost all value domains. This trend led to the identification of five distinctive national consumer segments. The trend of stronger identification with security, universalism and benevolence that appeared at the sample level re-emerged for the "urban upper class", the "countryside class I" and the "countryside class II", which accounted for two-thirds of the overall sample and were the clusters with the most dynamic quality food purchasing profile.

Ozimek and Zakowska-Biemans (2011) did the study which focused on identifying factors underlying Polish consumers' food choices and their perception of food quality attributes in relation to selected food products. It also focused on the implication of shifting consumers' expectation towards food for the national food industry. The study provided a review of previous research results relevant for the problem analyzed – emphasizing the results from the authors' own research conducted in the years 2000-2007 with the use of quantitative approach on representative in terms of gender, level of education, place of residence samples of Polish consumers. The study found that Polish consumers are more concerned with various food quality attributes and particularly sensory properties, healthiness and safety. It further differentiated between quality of foodstuffs offered in various points of sale and had favorable opinion about
specialized shops and perceived the quality of food bought in super and hypermarkets as inferior. The study also pointed that the perception of food quality was dependent on the product being assessed, and foodstuffs addressed to particular groups. These groups could be infants and people facing health problems. Food with additives, highly processed and genetically modified was assessed as having low quality.

Quality of food differs dependent upon points of sale; quality perceived was higher in specialized shops and inferior in super markets and hypermarkets. Also it differed based on the product and the group for whom food was being assessed.

2.1.21 Drivers of Retail Performance

Chan, et al conducted this study in 2011 with the purpose of investigating firm- and country-level drivers of retail performance. The study used regression to test hypotheses on a database of the top 200 global retailers that was drawn from a population of Global Powers of Retailing data of 2005. The predictors were able to explain firm level variations in sales growth though not ROI. The study also found that retailer’s sales growth is positively related to expansion speed but negatively related to number of retail formats and number of countries of operation. It also found that retailers who choose to expand into a host country that is less developed with relatively high disposable income tend to be more successful than others. Findings provide guidance for companies who already have foreign subsidiaries and for those who are interested in opening new markets.

Cambra-Fierro, et al conducted a study in 2011 with the purpose of establishing a framework for clarifying and extending the concept of inter-firm market orientation (IMO) and to complement the relatively small body of literature related to this concept. The conceptual framework is informed by empirical research based on a longitudinal multi-case study. The research identified a nexus linking IMO with value creation in inter-firm partnerships. The findings suggested that IMO has an impact on companies' performance in terms of knowledge transfer, innovation and market access.

Retailer sales are positively impacted when a retailer expands operations but is negatively impacted with it experiments with different formats.
2.1.22 Promotion and Supply Chain

Dr. Tokar et al, in 2011 undertook a study with the objective of finding the impact of sharing of information of the magnitude and timing of retail promotions on cost efficiency in the supply chain. The study compared performance against theoretical benchmarks and drew conclusions significant to managers. The study was based on experiments on two groups—students and managers from manufacturing firms. The results from the single-echelon study, revealed the cost-reducing effect of knowing the magnitude and timing of demand generated by a promotion. However, the poor performance, compared with the theoretical benchmarks, by respondents in the multi-echelon study, even when the lead time per node is half that of the single-echelon case and the subjects were experienced managers, highlights the complexity of the task that results from a lack of coordination. The results also suggested that while communication is helpful, coordination may represent a more serious challenge. A relationship was established between information sharing about promotion and cost efficiency of the supply chain. Knowledge about magnitude and timing of demand generated by promotion helps reduce cost supply chain.

2.1.23 Retailers and Entry Strategy

Sparks (2011) study aimed at evaluating the comparative progress of Asda in the UK since its surprise takeover by Wal-Mart in 1999. Wal-Mart expected to become the number one retailer in the UK, but its expectation was not met. This study investigated in finding reasons for its unsuccessful venture. Asda's progress was considered through a brief discussion of the company's history to 1999, an investigation of the changes Wal-Mart subsequently made to Asda's operations, the comparative impact of these changes and a consideration of the restrictions on impact deriving from organizational, competitive and environmental factors. The study found that despite the strong rhetoric on entry, the commercial reality has seen only moderate success for Asda and a widening gap to the market leader, Tesco. It concluded that it tasted only moderate success because of competitive strategy and reactions, market restrictions particularly in land-use planning and also its unwillingness to alter their focused store format strategy.
Success of a retailer in a new market is dependent upon various factors; however the store format it adopts plays a very important role.

2.2 Supply Chain in Different Industries

The literature that follows focuses on the supply chain in different industries.

2.2.1 Mobile Phone Industry

Reuver (2011) undertook a study with the aim of finding how interorganizational governance mechanisms within mobile eco-systems was affected by the end of the walled gardens and what this implied for developing mobile Internet services. The methodology adopted was case study. It studied how the Dutch walled garden i-mode portal evolved in an open WAP-based portal. The study finds that the transition of walled garden to open portals dramatically changed governance mechanisms between operator and content providers. The end of the walled garden reduced authority-based governance in the form of operator rules, contract-based governance in the form of formalized agreements, and trust-based governance in the form of close collaboration. The author demonstrated that theoretical concepts of interorganizational governance were relevant for actors within the mobile ecosystem.

Mondragon, et al (2011) addressed the need of having performance measures that could be used to provide an accurate diagnosis of the state of the supply chain. It addressed both its forward and its reverse components and identified the level of integration existing between parties. The study used elements gathered from the literature review to present a set of measures that could be applied for the purpose of auditing in the forward supply chain; product returns and reverse logistics; flows of materials and information and integration between supply chain. The methodology adopted was case study. The case study was of a major European mobile phone network operator. The proposed set of measures for auditing purpose provide an overall picture of the performance of a closed-loop supply chain by revealing high levels of stock for the products analyzed, consequence of the difficulty to generate accurate forecasts and the accumulation of high quantities of product prior to launch. The methodology adopted identified links between product returns (faulty and non-faulty) to operations in the forward component of the supply chain (design, sourcing, manufacturing and
forecasting) and also indicated how performance is affected because of integration.

Aspara, et al (2011) undertook a study of Nokia Corporation's business model transformation between 1987 and 1995. The study was conceptual in nature and resulted in a process model of business model change, demonstrating how central business units feed strategic alternatives and capabilities to the corporate-level transformation process. The results highlighted the importance of corporate level 'market mechanism' that allow promising strategic alternatives to emerge and select out inferior options and found that in the process, a key mechanism is the exchange of executives and cognitive mindsets between business units and corporate headquarters (CHQ).

Collin and Lorenzin (2006) undertook a study with the purpose of describing how demand planning could increase agility in supply chains. The methodology is a case study of mobile infrastructure industry with explicit focus on project business environment. The study was a theoretical review on supply chain agility, different planning and forecasting concepts, and explored the linkages between them. Empiric evidence was collected from Nokia Networks as a case study. The study found that suppliers should pay more attention on effectively utilizing customer's project plans for aligning their supply chain, It further concluded that supply chain agility does not just happen but requires continuous planning and suggested that suppliers should utilize customer's project plans in building agility in their supply chains.

Study by Paula and Swatman (2009) presents the findings of the MobiCert project, which utilized mobile commerce technology to enhance information access and provision for organic primary producers, so as to improve their integration into the grocery supply chain. The authors selected rapid appraisal research approach for this research as it is particularly suited for gathering fast, rich and deep data in rural and remote areas. The development of a mobile information community prototype for organic primary producers in rural South Australia which provides information access and data gathering functionalities through the use of a PDA/Smart phone is discussed in this study. The Rural Area Technology Acceptance and Diffusion of Innovation Model is developed to investigate acceptance of mobile technology and the likely diffusion of this innovation in rural areas and offers a theoretical underpinning for the
A characteristic, which is distinct to mobile SC, is high level of stock because of inability to generate accurate forecast. SC integration plays very important role in mobile SC. SC agility can be brought about by continuous planning at all levels. Further mobile commerce technology could utilized to enhance information accumulation and improve integration of SC

2.2.2 Automotive Industry

Phongpetra and Johri (2011) studied automobile manufacturer in Thailand. The purpose of the study was to investigate the effect of business strategies on the organizational performance. Empirical analysis was conducted using structural modeling method and confirmatory factor analysis to refine different business strategies. The study concluded that cost focus, cost leadership and integrated cost and differentiation were the business strategies while manufacturing, human resource management and marketing strategy are the functional strategies that positively affect on organization's financial and marketing performance.

Zhou (2011) undertook a study in China with the objective of identifying supply chain risk dimensions in special purpose vehicle (SPV) industry in the context of product design change and its impact on supply chain risk. Semi-structured interviews and cause-effect diagram were used to collect data and find the internal and external risk dimensions of supply chain risk. The study concluded that customer-required design change normally leads to risk in supply, delivery, and policy for external supplier and the risk dimensions are R&D, production, planning, information, and organization for the internal manufacturer.

This study was done in Germany (Weingarten et al, 2011) focusing on targeting the automotive industry supply chain. The study highlighted importance of information quality for competence of collaborative supply chain practices. The methodology was based on primary data based on a questionnaire which were administered on procurement managers throughout the supply chain in the automobile industry. The difference in performance of collaborative practices under high and low information
quality scenarios was illustrated using regression analysis. The study found that collaborative supply chain practices signified by information sharing, joint decision-making and incentive alignment varies with quality of information exchanged through the supply chain. Incentive alignment and joint decision making have a positive effect on operational performance only when the quality of the information is high on the other hand information sharing improves operational performance on both instances of low and high quality information exchange.

Kamaruddin et al (2009) did this study with twin aim of firstly identifying the importance of technology adoption factors and finding out how they influence suppliers of automotive manufacturers decision of adopting the supply chain technology (SCT) within their organizations. The methodology adopted was based on primary data collected based on questionnaires. The questionnaire was administrated to suppliers of two leading manufacturers. The response rate was 60%. The study found that (SCT) adoption is positively related to factors namely organizational structure, size and supply chain member pressure.

The recent environment concerns and challenge of supply chain sustainability were the focus of study of Shukla, et al (2009). The basic objective was to identify the drivers, implementation level, practices and performance of environmentaly and socially conscious supply chain management (SCM) in Indian automobile industry. Data was collected using a structured questionnaire and personal interviews from thirty entities, which constituted of first and second tier suppliers and original equipment manufacturers. A statistical analysis of drivers, practices and performance was done and also a broad review of literature was conducted to understand the challenges and barriers related to adoption of green supply chain management (GSCM) practices. The study found that there is a rise in awareness and willingness to adopt environmentaly and socially responsive supply chains in India and the phenomena is still in nascent stage of adoption, these measures were not being addressed properly and adequately.

Maia et al (2010) analyzed the buyer-supplier relationships in supply chains of automotive sector in Brazil. It used semi-structured interviews to explore the relationship of an automotive engine manufacturer and six of its suppliers. The results suggest that transaction costs are reduced and performance is improved where the
relationships are trustful and long lasting. It also found that automakers and suppliers' relationship at times resembles competition and at other times cooperation. The aspect of asset specificity is found to be greater in the first-tier of the supply chain and it has a tendency of being mediated by reasons such as the amount of production assigned to the manufacturer, maximizing return on previous investments the objective of maximizing return on previous investments, and also the configuration of higher value-added supply operations.

Bennett and O’Kane (2006) undertook a study with the objective of identifying the current trends in the automotive supply industry and finding their effects on first and second tier supply chain. The study aims to highlight the interaction between suppliers and their customers. The study conducts a review of literature, which is categorized as strategy, co-ordination and structure in a manufacturing environment and identifies the impact of synchronous supply on the above areas of operations management. The study concluded that synchronous supply can lead to efficiency in automotive supply chain.

Scavarda et al (2009) undertook a product variety multi-market study in the auto industry to conduct a benchmarking analysis of the practical findings against the theoretical ones obtained in a European Community Research Project (Intelligent Logistics for Innovative Product Technologies – ILIPT). The authors conducted an exploratory research that encompasses significant passenger car models from a global vehicle manufacturer in relevant automotive markets. The data collection techniques employed included interviews, contextual performance data and an analysis of product offerings from the manufacturer's web sites. The benchmarking also indicated that the variety offered in the European market exceeded the “appropriate” level of variety considered best in class by the ILIPT project and the emerging countries variety offered was below this level. This suggests that there was space for improvement in the product variety management of both supply chains. The study classified product variety in the auto industry into four categories. The results suggested that all the other product variety categories were restricted in emerging markets and were very refined in Europe.

Seitz & Wells (2006) undertook a study to look into one specific product recovery or remanufacturing operation by a major European car manufacturer. The study used secondary data that was sourced from internal company reports, sixty four non-
directive interviews and process observation. The study presents an in-depth insight into the issues within automotive product take-back and recovery and concludes that product take back in this sector was not necessarily the outcome of company policy of taking responsibility but was also based on other motives which might include long-term supply of spare parts. It also found that the remanufacturing processes had challenges that had been investigated during original operations.

Xia and Tang (2011) undertook a study in the auto industry’s supply chain. It proposes a remedy for supply chain management (SCM) to counter the challenges of plunging demands due to economic downturn, the gloomy trend in technology development, and the fierce global competition. The study collected information from managers at different levels of the auto industry’s supply chain management, applied management theories and develops an innovative theoretical model of sustainability in SCM for the auto industry. The study argued that outsourcing to low cost country (which is the current supply chain strategy) was unsustainable for the auto industry and proposes a Triple-C (Cease-Control-Combine) Remedy for the auto industry’s supply chain management. The study stated that proposed Triple-C strategy will save the auto industry big money in R&D investment by reducing quality cost and inventory waste, help the industry go through the volatile economy, and achieve sustainable development.

Lin et al (2009) undertook a study of auto industry in China with the objective of understanding the 3Cs that is context, configurations and capability requirements of modular supply networks in automotive industry. The methodology adopted was case based wherein different network contexts were analyzed using a 3C framework approach. This framework considers the capabilities of product design, production, inbound logistics, information sharing, and also configuration of the role structure, process structure and information structure as they are instrumental in achieving the above stated capabilities. The study concluded that there were two types of modular supply networks; one which is a fully integrated module supply network where the module supplier needs sufficient capability for upstream supply network integration and modularization; and the other is a partly integrated module supply network where a third-party logistics provider plays an important role with regard to production
capability.

Kim et al (2011) investigated the strategic role evolution of local subsidiaries of foreign automotive parts suppliers who have followed their major client into China. It analyzed units of five local subsidiaries of foreign automotive parts suppliers who had business dealing with Beijing Hyundai Motor Corporation. The study employed a case study methodology based on interviews with managers of the subsidiaries. It was found that the development of a subsidiary's functional capabilities varied from subsidiary to subsidiary and depended on the headquarters' global strategy and its interactions with external players. Also the levels of its functional capabilities critically influenced strategic role evolution of a subsidiary an also the strategic role evolution could be explained by the interactions of three critical factors which were the task assigned by headquarters’, the subsidiary's choice, and the local environment.

Pires & Neto (2008) found the effect of the supply chain configuration for management of the important elements for an automaker. It used the industrial condominium configuration. A basic case study framework was built to identify the main motivating factors for the adoption of an industrial condominium configuration. Simplification, cost reduction, process integration, and shared infrastructure were considered as the four main factors that impel an automaker's implementation of a condominium. An intentional sampling approach was used to make a case study of an automaker that used the industrial condominium configuration, and of four of its representative suppliers. It was found that a supply chain's configuration was a determining element in the way the automaker's relationship with its suppliers was conducted and the importance of the logistics management process within the context of the condominium was also established.

Petison and Johri (2007) analyzed the nature and evolution of manufacturer supplier relationship in the automobile industry of Thailand with the objective of identifying the factors, which influenced the evolution of these relationships. The methodology adopted was case based where in interview of managers were undertaken in seven automobile manufacturers and fourteen suppliers. The study found that the manufacturer-supplier relationships start as a market-exchange-type relationship and move to a partnership type in which the manufacturer benefit from supplier knowledge
of local production and market factors and the suppliers benefit from manufacturer’s technical and managerial support.

Jhakaria and Shankar (2007) in their research paper proposed to identify the dissimilarities that exist in SCM practices in different manufacturing industries in India. It identified four sectors - auto (both automakers and OEMs), Engineering, FMCG and Process. The methodology was survey based. It included six parameters like attitude of major stakeholders, information sharing between partners, certain internal business measures for performance measurement, incentives to partners and level of investment in IT. It concluded that some similarities exist between auto and engineering sectors though the dissimilarities are much higher. The result is such because there exists fundamental dissimilarities in operation and working of different sectors. The results could be helpful to managers evolving SCM strategies.

Studies of literature on automobile SC indicated that design changes often leads to risks in supply, delivery and policy for external suppliers. While it pertains to research and development (RD) risk, production related risk, planning oriented risk, information and organization risk for the internal manufacturer. In automotive SC the quality of information exchanged between entities of SC influences joint decision and incentive alignment amongst parties to a SC. Buyer-supplier relationship in auto SC which are based on trust and are long lasting lead to a reduction in cost and improvement of performance of SC. Further synchronized SC leads to efficiency in SC. Though these relationships start as a market exchange type relationships but move to become partnership type. SC in auto firms are of two types- A fully integrated supply network (where the module supplier needs sufficient capability for upstream supply network integration and modularization); and partly integrated module supply network (where a third party logistics service provider plays an important role with regard to production capability). Further SC configuration determines automakers relationship with its supplier. In India there is noted to be an increase in level of awareness and willingness to adapt green practices and also build socially responsible SC. Further in India similarities can be found between auto and engineering sectors, however dissimilarities are much larger.
2.2.3 Food Supply Chain

Marsden, et al (2002) developed a theoretical perspective and contributed to debates on generalized theory of rural development. They explored the role of short food supply chains in rural development. They argue that in order to more fully understand the role of short food supply chains and their potential it is important to move beyond descriptions of product flows and also examine how supply chains are built shaped and reproduced over time and space. The methodology was a case study of Llyn Beef producers co-operative in Wales. They demonstrated the evolution of supply chains and their role in rural development both at farm level and also within rural economy. They identified four types of evolution which were temporal, spatial, demand, and associational or institutional.

Vorst, et al (2006) investigated the effect of Supply Chain Management on logistical performance indicators in food supply chains. It is found from review of quantitative and more qualitative managerial literature that, Supply Chain Management should be concerned with the reduction and if possible elimination of uncertainties to improve the performance of the chain. The study identified clusters of sources of uncertainty, which were order forecast horizon, input data, administrative and decision processes and inherent uncertainties. For each source of uncertainty, several improvement principles were identified. The methodology was a case study in a food chain in which a simulation model helped quantify the effects of alternative configurations and operational management concepts. This simulation study was compared with a pilot study and the model is validated against real data, to identify organizational consequences. The findings of the case study suggested that reduction of uncertainties bring with it improved service levels, although possible benefits could be restricted by current supply chain configurations. Also the availability of real-time information systems were found to be a requirement for obtaining efficient and effective Supply Chain Management.

The pet food recall in March 2007 and a rapid increase of similar incidents have exposed the real risk for food supply chain contamination and disruptions. When sourcing is done through multilayered supply chains with poor visibility they are particularly vulnerable. Roth et al (2007) developed a conceptual framework called the
"Six Ts" of supply chain quality management i.e. traceability, transparency, testability, time, trust and training that were found to be relevant for all type of products but especially important to the preservation of public welfare through a safe food supply. Their study described the globalization of food supply chains and present data on the trends of U.S. food import volumes, both in aggregate and specifically from China. The study also highlighted the inherent difficulties and risks posed by global food supply chains. Research agenda and questions to be addressed regarding the application of the six Ts in global food supply chain management were also provided in the study.

The present day dynamic demands and constraints imposed by ever changing business scenario makes it increasingly necessary for companies in the food supply chain to cooperate with each other. The main questions faced by individual (food) companies were whether, why, how and with whom to start supply chain management activities. Vorst and Beulens (2002) undertook a research that was quantitative in nature for analyzing a supply chain network and for identifying effective chain redesign strategies. Their study presented a generic list of supply chain redesign strategies based on a multi-disciplinary literature review. It concluded that one should focus on the identification and management of the sources of uncertainties in the supply chain’s decision-making processes in order to identify the most effective strategies in a specific chain scenario. The application of the stated research method in three food supply chains resulted in a valuable tool that could be used in supply chain redesign projects, as it indicated potentially effective redesign strategies when encountered with specific source of uncertainty in a supply chain.

Apaiah, et al (2005) proposed a methodology to efficiently design food supply chains. They focus on quality, cost and environmental independently to each other and suggest that food chains are designed to deliver a particular product with consumer-specified attributes and are made up of links. These attributes are used to select the goals of quality, cost and environment load to optimize the chain. A systematic way to identify problem areas in supply chains is presented by the methodology. They conclude that the entire chain from primary production up to and including consumer-processing influences the final product; but the relative contribution of the links varies according
to the goal be it quality, cost or environment for which the chain is being designed and optimized.

Folkerts & Koehlerst (1998) presented the need for the European agribusiness and food industries to redesign and reposition their activities in the food supply chain, both at a technical and organizational level, in order to achieve customer satisfaction and business efficiency. Their study is based on the findings of ten supply chain projects in the Dutch horticultural sector and on the results of a benchmarking project in five different European countries. They described the activities of the "Agri Chain Competence" programme in The Netherlands and stresses that more attention should be paid to international food supply chains and that chain reversal demands new methods, tools and expertise on chain analysis and chain management.

Wilson and Clarke (1998) described a possible mechanism for the design and development of a software system that will become the de facto industry standard for the collation, location and dissemination of traceability data. They conclude that such a system should be capable of transcending national and regional boundaries; further it should operate on a global scale and be available 24 hours a day seven days a week. It must be relevant to, and usable by, each member of the food supply chain whilst not generating any commercial objection on grounds of security, competitiveness or cost. The system proposed makes use of the continuing growth of personal computer usage, the declining cost of electronic communication, and the global nature of the Internet.

Management of supply chain for food is associated with the risk of contamination and disruptions, which are very high particularly when the product is sourced through multi, layered supply chain. These could be controlled through adoption of six T-Traceability, Transparency, Testability, Time, Trust and Training which is important for all but specially food supply chain.

2.2.4 Supply Chain and Grocery

One of the biggest challenges for supply chain management today is short shelf life grocery products as the product variants is very high, traceability requirement is strict, the shelf life is very short, the volume of goods handled is high and there is a strict need of temperature control all through the supply chain. A solution to the problems
associated with logistics of short shelf life products can be Radio Frequency Identification (RFID) based data capture system. This article discusses the potential of utilizing RFID technology for increasing efficiency in the supply chain of short shelf life products. This article focuses on RFID trial conducted at Sainsbury's, which is discussed to analyze the potential benefits of RFID for short shelf-life products retailers. It also analyzes the potential impact of RFID for various other supply chain participants. The paper finds out that RFID brings with it a range of operational benefits, the major one being quick payback of capital when applied with recyclable transport containers. (Karkkainen, 2003)

Use of RFID increases the efficiency of grocery SC which has many challenges that of short shelf life, high product variety, high volume and need of temperature control all through the SC.

2.2.5 International Supply Chain

There is drastic increase in number of companies that claim to be pursuing international supply chain management (ISCM), though empirical evidence of successful implementation programs is scarce. This paper tries to contribute to theory building in the area of ISCM implementation by presenting an exploratory model specifying goals, hindrances and enablers on the path towards effective ISCM. The model was formulated in a workshop on the subject with inputs from a panel of experts on the particular content matter. The results derived are discouraging and point towards a gloomy picture of vicious cycles frustrating the implementation of effective ISCM strategies. Though gloomy it also appears that it is possible to apply the same generic mechanisms to create a virtuous cycle, for example by promoting cross-functional careers and by responding actively to demanding customer needs. (Akkermans, et al,1999)

2.1.5 Fashion/ Garment Retail

McColl and Moore in 2011 undertook research with the aim of offering a deeper understanding of the centrality of the own brand to fashion retailer brand strategy. The research was based on six in-depth interviews with large-scale fashion retailers from a sample of the 20 largest and most successful fashion retailers in the UK. The
participants identified the motivations, dimensions, success factors and problems associated with the creation, development and management of the own brand. The results of this study provide key areas for future research development to be applied within the fashion retail sector or to be expanded within alternative retail sectors.

This study done by Muhammad and Ha-Brookshire in 2011 aimed at gaining deeper understanding of the job responsibilities and requirements of textile and apparel (T&A) sourcing personnel from the employers' perspective. This was based on Kunz's behavioral theory of apparel firms and US Department of Labor's classification principles. The study used “Job wanted” texts published by Women's Wear Daily, a prominent daily trade newspaper in the US textile and also collected data from apparel industry. Content analysis was performed. It examined three research questions; which were- daily duties of sourcing personnel, required skills for sourcing personnel, and relevant experiences needed for sourcing personnel. The study found that sourcing personnel were heavily involved in the firm's management of vendor relations, product development, production, and inter-departmental collaborations. It proposed that desired sourcing personnel must be organized with multitasking abilities, knowledge of various computer applications, and exceptional communication skills. It also discovered that on-the-job experience, industry knowledge, and bilingual abilities were highly sought for sourcing personnel with relatively little focus on formal education.

Private brands play a significant role in garment retail. However apart from positive aspects of private brands there are also challenges associated with creation, development and management of private brands. Distinct characteristics were found amongst sourcing personnel in garment sector and multi-tasking, knowledge of computer applications and communication skills.