CHAPTER 1

INTRODUCTION

E-Commerce does not just mean trading and shopping on the Internet. It means business efficiency at all operation levels. Supply Chain Management means coordinating, scheduling and controlling procurement, production, inventories and deliveries of products and services to customers. The SCM is the backbone and also a very critical component of E-Commerce. Supply Chain Efficiency means having the right product at the right place at the right time, can save money/reduce costs, and can enhance cash utilization. Supply Chain Management (SCM) in today’s global environment, especially the E-Business is important to create significant competition, advantages to firms and business partners worldwide. The objectives and goals are essential factors in the study of supply chain management in the E-Business.

The purpose of this dissertation is to examine the type’s models in E-Commerce and activities of supply chain management in the electronic goods, auto components and textile manufacturing companies in various locations, to show the application of E-Commerce in industrial supply chain management, how the applications are created and how it has been effectively implemented in the industries. The study explains the efficiency of E-Commerce in industrial supply chain management, how effectively E-Commerce is applied on industries and the functions of supply chain management. The study explains the different types of technology for supporting E-Commerce, servers in the present and future content. To understand and develop the E-Commerce and supply chain management
structure, profitability and dynamics of industrial supply chain management. It also explains the problems in E-Commerce and also in industrial supply chain management.

Putzger (1998) states that the key standard in completion is correct choice of information technology, and that the use of third-party providers for both transportation and information management is the option chosen by flourishing performers. Bowman (1997) says that many companies are failed in achievement because they simply are not capable to come to accord on terms. He notes that this has been an important reason for the development and implementation of the standards supporting the supply chain operations. The various range of potential, through the surfacing of on-line Internet based environments, generates extraordinary change bringing both product and market ambiguity and as a corollary new market challenges. As we loom the millennium organizations need to be new architects of fundamental changes transforming many industries, from publishing to computing, from financial services to airlines, and from car manufacture to education.

To meet the challenges of implicit business environments organizations need to stimulate both a approachable and malleable approach to market anxiety and how value is created. For many ingenuity and modernism management is a strategy of fundamental importance in supporting development in ever increasing chaotic and fickle environments. In tolerant the significance of modernization businesses needs to create a shift from a product centric view of improvement to a complete view of improvement. When considering modernism and ingenuity management it is essential to realize how the Internet is evolving into a flawless buyer -supplier communications and communication channel. Practical viable environments working in cyberspace, where information is the point blood of business processes, and through which practical value chains have emerged, can be
referred to as market space. The Internet is viewed by many as a formless and messy communications. But deeper it shows a milieu with a focused strategic architecture based on rules setting the margins of modernism. The Internet will offer new modes of money making trade and interactions and is a clear supporter of non-linear styles of modernism.

1.1 PURPOSE AND SIGNIFICANCE OF THE STUDY

In recent times the concept of supply chain intend and supervision has come up to the front, due to the ever growing difficulty of the systems motivating buyer supplier relations. The unparalleled levels of supply chain management difficulty are partly accredited to the Internet, through its more recent business acceptance and profitable use. Laudon and Traver have defined E-Business as “the digital enablement of communication and developments within a firm, involving information systems under the control of the firm, which do not include the company’s revenue”. The Internet increases the prosperity of communications through greater interactivity between the firm and the customer (Watson, Akselsen, and Pitt, 1998). Some of the most unforgettable business success stories over the past decade, as well as Netscape and the development and acceptance of Open basis software solutions, have emerged out of a systemic approach to innovation through the Internet (Hardaker 1998).

The development of fast modern new products needs to be based on a close position between technology, products and markets, with a focus on achieving increased aggregate value (Hardaker 1998). Much of the supply chain management issues we are considering here has been variously called logistics (Brace 1994); production management (Burbidge 1994); demand chains (to emphasise satisfying end customer requirements); lean supply (Lamming 1993) and more lately the lean enterprise (Womack and Jones 1994). Authors and practitioners from many different disciplines and
functions are significance an increasing dependence on relationships with suppliers (for example, Christopher 1992; Slack 1991; Schonberger 1986). Nearer, longer-term relationships are obvious in some industries, reported notably in the Japanese automotive industry (Lamming 1992, Womack et al 1990), the Japanese textile industry (Dore 1983), craft-based Italian industries (Lorenzoni and Ornati 1988) and various Swedish manufacturing industries (Hakansson 1987). A growing body of work in the study of relationships emphasises that there are opportunities or mutual advantage, if information is shared between the parties concerned (Christopher 1992; Ellram 1990, 1991; Macbeth and Ferguson 1994; Hines 1994).

Supply Chain management (SCM) is the method of managing the association of goods from suppliers to buyers. Supply Chain Management also recognized as supply chain combination or supply chain optimization is the process of optimizing a company’s interior practices in cooperates with suppliers and customers in sort to bring products to marketplace more competently. SCM functions include demand forecasting, sourcing and procurement, record and depot management, allocation logistics, and other controls. The SCM practice constantly accomplishes something where Enterprise Resource Planning (ERP) falls short. In order to properly forecast the record levels of the supply chain management system requirements ERP’s database collaboration. An influential SCM includes the systematization and optimization of prepared and planned information and methods within and between endeavours. SCM is coupled with optimizing business processes and business value in each recess of the expand enterprise, from the supplier’s to the customer’s. SCM can exploit E-Business concepts and Web technologies to fetch the organization upstream and downstream. It is the planned approach that combines all ladders in the business series, from the commencement of the product intend and the attainment of raw materials for fabrication to
shipping, allocation, and warehousing, until an ended product is sold to the customer.

1.2 THEORETICAL FRAMEWORK

The central question of this dissertation is to examine E-Commerce models and SCM activities in the electronic goods, auto components and textile manufacturing companies in various locations like Chennai, Bengaluru and Coimbatore. In addition they expect the value of the goods that they manufacture to increase their profit margins, along with lower cost, high margin, Economy, better customer service, quick comparison shopping, productivity gains, knowledge market, team work, information sharing, convenience and control. Security, System and Data Integrity, System scalability commerce is not free, Consumer search is not efficient or cost-effective, customer relations problems, Products People won’t buy online, Corporate Vulnerability, High Risk of Internet Start-up. To a great extent trade and business is conducted in this manner. It involves urging and drawing on improvement or modernization in electronic funds transfer, chain management supply, processing online transaction, marketing over internet, EDI i.e. electronic data interchange, automated data collection and inventory management systems. Modern electronic commerce usually encompasses wider range of technologies such as e-mail. But at some point in the transaction’s lifecycle, it typically uses the World Wide Web. The customer most often pays only for the shipping of the products they purchase, thereby reducing or completely eliminating the high mailing and printing costs. It also results in dropout in the cost of promotional material marketing. This denotes that most of the companies notice the increase in sales brought about by the E-Commerce which typically mean increase in the profits.
1.3 INDUSTRIAL SCENARIO IN INDIA

The National Manufacturing Competitiveness Council, a Government policy making forum highlights that the manufacturing sector is considered a key growth driver of the Indian economy. However, contrary to the trends in emerging economies with a strong manufacturing bias, Indian manufacturing sector contributes around only 15% to GDP. This is comparatively lesser to the other developing economies of Asia like China, Thailand, Malaysia, Indonesia, and Vietnam.

The Indian manufacturing sector has over 53 lakh manufacturing units with 99% of the units employing less than 10 workers. These firms are spread across 2,000 manufacturing clusters across India. The Small Sale Industrial (SSI) sector is an important component of the foundation layer of entrepreneurial activities in India and these firms play a key role in employment generation in India with an average per unit employment of 4.6 employees. The Indian manufacturing sector is broadly divided into two segments, organized and unorganized. The organized sector includes all units that are registered under Factory Act 1948, 2 m (i) and 2 m (ii). Other units fall under unorganized manufacturing. More than 99% of all manufacturing units fall in the unorganized sector. The organized sector accounts for only 0.72% of the enterprises. An industry-wise break up also shows that only 7 out of 23 industrial divisions have more than 10% of organized sectors. Both in terms of number of enterprises and the number of workers, the Indian manufacturing sector is heavily dominated by the unorganized sector. However, in spite of this overwhelming majority in units and workers, the unorganized sector’s contribution to both output and value added is extremely small (Kumar and Gupta 2008).

Unfortunately, a majority of the firms in the Indian manufacturing sector continue to be mired in a cycle of low productivity and low value
added products. The inability of Indian manufacturing to contribute more substantially to GDP can be correlated to its low overall productivity in comparison to comparable countries. However, the growth potential of Indian manufacturing sector is huge. The Indian manufacturing sector has grown at an impressive average rate of 9.5% annually since 2003-04. Its sustained growth is crucial for generating employment opportunities needed to absorb the rapidly expanding workforce. India has a potential for transforming itself into a hub of mass manufacturing.

1.4 ICT ADOPTION AND SUPPLY CHAIN COMPETENCE

For the development and growth of the Indian Manufacturing sector, a systematic effort across a broad range of initiatives is required. Fundamentally, Information and Communication Technology (ICT) is expected to play a major role in such transformations. However, Indian manufacturing has significantly lagged behind its global peers in ICT adoption. Considering ICT as a force-multiplier, there is a need to increase the ICT adoption in Indian manufacturing sector. The unique nature of the Indian manufacturing sector such as being small, unorganized and lacking international marketing capability, poses many challenges against the benefit and leverage it can provide. Some of the benefits that the electronic supports given by ICT have been highlighted and a report are discussed below:

ICT provides better Inbound Logistics/Procurement by faster information sharing with existing suppliers and a lower cost of communication. It gives better ability to connect with suppliers who are distributed geographically. On the outbound side, it provides better ability to link with global supply chain and enhance the sourcing opportunities. Easy connectivity provides ability to outsource logistics requirement and coordinate with logistics service providers. Further, it helps in Operations/Production, Marketing and Sales, Customer Relationship
Management, Finance and Accounting Processes, Real Time and Efficient Decision Making, Human Resource Management. The ICT penetration in the Indian manufacturing sector, and drew a distinction between “ICT Adoption” and “ICT Deployment”. They explain that ICT deployment refers to the overall usage of ICT within a firm and ICT adoption refers to the ICT enablement of the firm’s critical business processes.

The detailed national survey conducted across the manufacturing firms of varying sizes and verticals have provided deep insights into the factors influencing ICT adoption. The major factor is found to be the awareness level for basic ICT applications. Manufacturing firms consider ICT applications complex to implement due to affordability, appropriateness and adoptability. Small firms lack the process maturity to adopt ICT. Manufacturing firms mostly consider adopting technologies mainly for non-core functions such as financial and accounting solutions and further on Payroll, HR management, CRM, etc. Lack of internal skills is also cited as one reason for non-adoption. Lack of trained people and inability to provide training add to this. Influence of management team, role of clients and suppliers, intervention of Government, business environment and infrastructure support are also found to be barriers in adoption.

The ICT adoption threshold across the Indian manufacturing sector is very uneven. Certain industries such as auto components, chemical products and electrical machinery have been observed to be ahead of the other verticals due to the comparatively high overall technological maturity of these verticals. For example, in the automobile industry, the OEMs, both domestic and MNC, have encouraged and collaborated with their Tier I suppliers to ensure high ICT adoption levels among the suppliers. This has had a cascade effect with the Tier I suppliers providing a similar ‘pull effect’ to the Tier II suppliers and beyond. The proactive role of national and local associations in
enabling the adoption of ICT solutions can also be seen in the auto components vertical.

1.5 INDUSTRY SECTORS

The key manufacturing verticals selected for the analysis are Electronic goods, Auto Components and Textile machinery. These sectors were selected based on the Annual Survey of Industries by Ministry of Statistics, which identified them as sectors having high growth and vertical potential. Vertical potential is indicative of the potential for adoption of ICT in the vertical and takes into account various parameters such as MSME density, number of factories, vertical growth, Index of Industrial Production (IIP), export contribution, share of industry output, net value added per person, foreign direct investment (FDI) index, etc.

1.5.1 Auto Component Industry

The auto industry of India has not only become globally competitive but is rapidly becoming an innovation hub for small cars or many of the global and Indian auto majors. The success of the auto industry needs to be replicated by many other verticals in order for the Indian manufacturing sector to enter and sustain a strong growth trajectory. The Indian auto component industry is ancillary to the automobile industry. The growth of automobile sales in India is consequently leading the surge in the auto component industry. The capability to produce the entire range of auto components along with increasing quality standards of the auto component industry has caught the eye of domestic as well as foreign OEMs, subsequently giving impetus to indigenisation levels at OEMs. OEMs demand growth coupled with the growth in indigenisation levels led to the upsurge in demand for domestic auto component industry.
The size of Indian auto component industry is Rs 1600 billion. As per industry estimates, out of the total turnover of the Indian auto components industry, around 60% is derived from sales to domestic OEMs, around 25% comes from sales to the domestic replacement market and around 15% is derived from exports. While the long term prospects for the industry remain strong in line with the outlook for the OEMs segment, the industry faces strong challenges in the form of threat of low cost imports, currency volatility and ability to invest on product development to be able to move up the value chain.

1.5.2 Textile Machinery Industry

Bhagwati (2011), President of Textile Machinery Manufacturers Association (TMMA) highlighted that the growth of textile industry in India has encouraged the textile machinery manufacturing industry. The strong textile engineering industry that can grow, compete and export would be able to provide strong support to the Indian textile industry, to make it vibrant and competitive. He quotes that as per the survey of the Textiles Committee, during 2008-09 the estimated annual installed capacity of the industry was 80480 millions. The total provisional production of textile machinery, parts and accessories during 2010-2011 recorded an increase of 45 % at 61500 millions as against 42450 millions achieved during the previous year. With this, India could be a manufacturing hub of textile machinery, parts, components and accessories and thus contribute to employment, generation and GDP growth and be able to meet 70-75 % demand of the Indian textile industry for high tech machinery.

Exports during 2010-11 had been estimated at 6500 millions against 5820 millions achieved during 2009-10. With the overall improvement of the industry, exports are expected to grow in the coming years. One concern of the industry is the import of textile machinery by the
textile manufacturers. Imports of textile machinery have risen from 45000 millions during 2009-10 to 50000 millions estimated during 2010-11. The Government policy of discouraging composite mills during the 1960s, 1970s and 1980s and thereby relegating the weaving and processing industry to the decentralized sector was a de facto encouragement for low technology machinery. Further, the earlier reservation policy of the Government in hosiery and garment industries resulted in proliferation of small/low tech units, and also units were encouraged to undertake large-scale second-hand machinery imports. Even today the preference of a large section of the textile industry to imported second-hand/used machinery is affecting the growth of domestic machinery manufacturing. The textile machinery manufacturers need full support from the Government so that it has a level playing field and becomes competitive enough to supply the latest technology machines to the textile industry. In the past year, we have also seen significant uncertainty due to sudden policy shifts because of suspension of TUFS and control of cotton and yarn exports. Government need to frame polices and create an atmosphere conducive for investment and technology up gradation of the textile engineering industry.

1.5.3  Electronic Goods

The Indian electronics industry is broadly divided into consumer electronics, industrial electronics, computer hardware, strategic electronics, communication and broadcasting equipment and electronic components. As per FY11 estimates, consumer electronics and the communication and broadcast equipment segments have the largest share comprising of 28% and 27% of the total production, respectively. While the consumer electronics segment has always held the dominant share, the share of the communication and broadcast equipment segment has increased during the recent years. The Indian electronic goods industry forms a small part of the global electronics
industry. However, in the recent years, the domestic market has witnessed a robust growth driven by several factors such as manufacturing growth, ICT penetration, rising disposable income, retail boom and attractive finance schemes. Production grew at an impressive CAGR of 18.3% during FY06-FY10. In FY11, production is estimated to have increased by around 10.0% (y-o-y) at 1217.6 billions.

However, there exists a huge gap in demand and supply in this sector. Domestic production constitutes less than 45% of domestic consumption (FY09). As most of the raw material required for manufacturing electronic goods is not available domestically, manufacturers need to import materials from countries such as China, Taiwan and Korea. The consumer electronics segment includes products that can be directly used by the end-users; for instance, television sets DVD/MP3 players and microwave ovens. Industrial electronics comprises of critical hardware technologies and systems with built-in software. The important devices used in this segment relate to power electronics, medical electronics and other intermediates like semiconductor. Computer hardware segment includes domestic production of desktops, notebooks and peripherals. India is one of the fastest growing hardware markets in the Asia-Pacific region. Most of the prominent global vendors have strong presence in the Indian market. The BFSI (Banking, Financial Services and Insurance), telecom, ITeS (Information Technology enabled Services), manufacturing verticals, Small and Medium Enterprises (SMEs), e-Governance and households are the key demand verticals for this segment.

The strategic electronics segment includes satellite-based communications, navigation and surveillance, underwater electronic system, infra-red based detection and ranging system, disaster management, internal security system and GPS-based vehicle tracking system etc. Communication
and broadcasting electronics includes digital exchanges, transmission equipment, microwave transreceivers, satellite communication terminals, optical fibre communication equipment, and two-way radio communication equipment. The general electronic components sector caters to the consumer electronics, telecom, defence and IT sectors. This industry produces semiconductors, picture tubes, monitor tubes, diodes and transistors, power devices, ICs, hybrid micro-circuits, resistors, capacitors, connectors, switches, relays, magnetic heads, DC micro motors and tape deck mechanism, PCBs, crystals, loudspeakers and hard and soft ferrites. The electronic goods production clusters are spread across the country. While the oldest clusters exist in Maharashtra, Gujarat and the NCR region due to the cheap availability of inputs, the new clusters in Karnataka and Andhra Pradesh have come up to meet the demand for electronics from the IT/ ITeS industry in these regions. India has created a world-class manufacturing ecosystem in Sriperumbudur, Chennai. Major growth drivers of the Indian electronic goods sector are growth in per capita income and corporate spend on electronics, Government’s focus on infrastructure, Transformation of electronics goods from an aspiration to a utilitarian need, Quick rate of obsolescence in technology, Availability of affordable products for lower income groups as well.

Key challenges in the electronic goods sector are inadequate infrastructure viz power, transportation and land, Limited preferential market access for local companies resulting in excessive import of low-cost products, Limited R&D focus, Unfavourable tax structure, Inflexible labour laws and Limited focus on value addition and exports. There is also greater need for India to focus on research and development, giving more thrust to the semiconductor industry, cluster development, effective supply chain and logistics system and focus on inventing mass-products that matter to rural and bottom of the pyramid segments. Going forward, the demand for appliances
and energy efficient consumer electronics is going to be high and the domestic producers should leverage the opportunity to enhance growth.

1.6  INDUSTRY CLUSTERS

A business cluster is a geographic concentration of interconnected businesses, suppliers, and associated institutions in a particular field. Clusters are considered to increase the productivity with which companies can compete, nationally and globally. What makes clusters unique is not just that companies with similar or complementary interests, competencies, and needs congregate around each other. It’s that an entire value chain exists within a cluster: suppliers, manufacturers, distributors, academic institutions, researchers, and workforce training, as well as those who provide relevant support services. A Cluster is generally identified by the product (or product range) and the place where it is located. The cities of Coimbatore, Bengaluru and Chennai have one thing in common that is the manufacturing industry concentration and the type of businesses.

1.6.1  Coimbatore

Coimbatore, also known as Kovai, is the second largest city and urban agglomeration in the Indian state of Tamil Nadu. It is a major industrial, commercial and educational hub of Tamil Nadu. Coimbatore has a large and a diversified manufacturing sector facilitated by the presence of research institutes and large number of engineering colleges producing about 50,000 engineers. With more than 50,000 small, medium and large industries, the city’s primary industries are engineering and textiles. Coimbatore is called the Manchester of South India due to its extensive textile industry, fed by the surrounding cotton fields. Coimbatore is ranked 4th among the Indian cities for the investment climate and ranked 1st in consumer confidence index according to studies done by CII and Economic Times (ET) respectively. The
city also ranked at par with Chennai, Kolkata and Noida as a most favored investment destination in a study by Frost and Sullivan.

Coimbatore is home to a vibrant auto industry with investments of over multimillion dollar investments and turnover. Coimbatore is the hub of most of the small and medium scale manufacturing units of the Indian automobile industry parts and components, and the also a base for India’s automobile R&D. Coimbatore has a large share in export trade of auto parts and components to the world renowned automobile giants globally and also fuelling automobile manufactures located in the “Detroit of India” – Chennai. Maruti Udyog and Tata Motors source up to 30% of their automotive components from Coimbatore. Some of the auto component makers in Coimbatore include Robert Bosch GmbH, PRICOL, Craftsman Automation and Roots Industries. Coimbatore houses a large number of small and medium textile mills. It also has central textile research institutes like the Central Institute for Cotton Research (CICR) - Southern Regional station and the Sardar Vallabhai Patel International School of Textiles and Management. The South Indian Textiles Research Association (SITRA) is also based in Coimbatore. The neighboring city of Tirupur is home to some of Asia’s largest garment manufacturing companies, exporting hosiery clothes worth more than 50,000 million. The city is the second largest software producer in Tamil Nadu, next only to Chennai. Coimbatore has more than 700 wet grinder manufacturers with a monthly output of 75,000 units. Coimbatore motor and pump manufacturing industry supplies over 40% of India’s requirements. Coimbatore is one of the major gold jewellery manufacturing hubs in India; renowned for making cast jewellery and machine made jewellery is also a major diamond cutting centre in South India. Coimbatore is the largest non-metro city for E-Commerce in South India.
1.6.2 Chennai

Chennai is the capital city of the Indian state of Tamil Nadu, located on the Coromandel Coast off the Bay of Bengal. It is a major commercial, cultural, economic and educational center in South India. It is also known as the Cultural Capital of South India and was declared as the most livable city in India by the Institute of Competitiveness on account of economic, social, security and medical conditions as parameters. Chennai has a diversified economic base anchored by the automobile, software services, medical tourism, hardware manufacturing and financial services. Other important industries include petrochemicals, textiles and apparels. The Chennai Port and Ennore Port contribute greatly to its importance. Chennai has the fourth largest Gross Metropolitan Product in India.

As of 2012, the city has about 34,260 identified companies in its 15 zones. Of these, 5,196 companies has a paid-up capital of over 5 million, about 16,459 companies are in the paid up capital range of 100,000 to 200,000, and 2,304 companies have a paid-up capital of less than 100,000. Chennai is known as the Detroit of Asia. The city accounts for 60% of India’s automotive exports. It has a market share of around 30% of India’s automobile industry and 35% of its auto components industry. A large number of the automotive companies including several global automotive companies such as BMW, Hyundai, Ford, Nissan, Renault, Mitsubishi, TVS Motor Company, Ashok Leyland, Caterpillar, Royal Enfield, TI Cycles, TAFE, Dunlop, MRF have manufacturing plants in and around Chennai. Daimler, Yamaha and Apollo Tyres have plants under construction. Mahindra and Mahindra is planning to set up an automobile manufacturing facility near Chennai. The city is a major centre for the auto ancillary industry. Hyundai is in the process of setting up engine plant in the city. Ford is planning to invest $500 million dollars in Chennai plant.
In recent years, Chennai has emerged as an electronic manufacturing hub in South Asia with multinational corporations like Dell, Nokia, Motorola, Cisco, Samsung, Siemens, Sony-Ericsson, Flextronics and Foxconn setting up Electronics / Hardware manufacturing plants, particularly in the Sriperumbudur electronics SEZ. Chennai is currently the largest electronics hardware exporter in India, accounting for 45% of the total exports in 2010-11. The Government of India has planned to promote Chennai as the Electronic Manufacturing and R&D Hub of the World in a span of 15 years. Companies like Nokia, Flextronics, Motorola, Sony-Ericsson, Foxconn, Samsung, Cisco, and Dell have chosen Chennai as their South Asian manufacturing hub. Products manufactured include circuit boards and cellular phone handsets.

1.6.3 Bengaluru

Bengaluru is the capital of the Indian state of Karnataka. Located on the Deccan Plateau in the south-eastern part of Karnataka. Bengaluru is India’s third most populous city and fifth-most populous urban agglomeration. Bengaluru is well known as a hub for India’s information technology sector. It is among the top 10 preferred entrepreneurial locations in the world. As a growing metropolitan city in a developing country, Bengaluru confronts substantial pollution and other logistical and socio-economic problems. With a Gross domestic product of $83 billion, Bengaluru is listed 4th among the top 15 cities contributing to India’s overall GDP. Bengaluru is home to many well-recognized colleges and research institutions in India. Numerous public sector heavy industries, technology companies, aerospace, telecommunications, and defense organizations are located in the city. Bengaluru is known as the Silicon Valley of India because of its position as the nation’s leading IT exporter. A demographically diverse city,
Bengaluru is a major economic and cultural hub and the second fastest growing major metropolis in India.

The Economy of Bengaluru is an important part of the economy of India as a whole. Bengaluru is nicknamed the Silicon Valley of India. The establishment and success of high technology firms in Bengaluru has led to the growth of Information Technology (IT) in India. IT firms in Bengaluru employ about 35% of India’s pool of 1 million IT professionals and account for the highest IT-related exports in the country. Bengaluru is also becoming a destination for the automotive industry. Toyota has a manufacturing plant in Bengaluru while Daihatsu is planning on building a factory soon. Hindustan Motors also has a manufacturing facility in Bengaluru as does Volvo Trucks. Bengaluru houses many small and medium scale industries in its Peenya industrial area that claimed to be one of the biggest in Asia 30 years ago.

1.7 DEFINITION OF TERMS

Electronic Business or E-Business as the digital enablement of communication and developments contained by a firm, connecting information systems below the control of the firm, which doesn’t include the company’s proceeds. Given this tip of analysis, it does not only craft E-Commerce’s pasture slighter, it makes E-Commerce a part of E-Business. People are immobile at variance about the description of E-Business and E-Commerce, but from each of their frequency, it appears that E-Business is superior than E-Commerce. SCM is the method of managing the association of goods from suppliers to buyers. Supply Chain Management also recognized as supply chain combination or supply chain optimization is the process of optimizing a company’s interior practices in cooperates with suppliers and customers in sort to bring products to marketplace more competently.
1.8 STATEMENT OF THE PROBLEM

The adoption of SCM technologies and other E-Commerce technologies are mostly influenced by the cost benefit evaluation of implementing such technologies. The problems and challenges of adoption of SCM technologies, however differs with the type of industry and the size of operations. In addition, many factors such as the type of business relationship in the supply chain, the amount of information that is shared, the business strategy and IT strategy of the firms play a major role. Many large industries have already adopted SCM. However, their connection to the suppliers who are in varying sizes and relationships are not complete. The suppliers are yet to connect to their buyers through SCM. Therefore the question that arises is:

“What are the factors that influence the adoption of SCM in the supplier industry to their buyers in B2B relationship and does it vary between the type of industry and the place of business?”

To answer the research question, further questions are raised such as:

- How to examine the effect of E-Commerce application on industrial supply chain management?
- How to analyze the efficiency of E-Commerce application on industrial supply chain management?
- What are the methods to examine the present and future context of technology to support E-Commerce servers?
- What are developments to understand the structure, profitability and dynamics of industrial supply chain management?
What are the types of problems and prospects of E-Commerce application on industrial supply chain management?

1.9 OBJECTIVES OF THE STUDY

To answer the research question the following objectives are framed for the study:

- To study the application of SCM technology in E-Commerce activities among Indian industries.
- To study the factors that influences the adoption of SCM in Indian industries.
- To investigate the information intensity in the supply chain that influences the SCM adoption.
- To explore the environmental factors that influences the adoption of SCM.
- To understand the business strategies of Indian firms that encourages them to adopt SCM.
- To identify the problems and challenges faced by the industry in adopting SCM.
- To analyze whether if the place of business influence the adoption of SCM among the industries in Coimbatore, Chennai and Bengaluru.
- To analyze the difference in adoption of SCM among the various industries such as electronic goods manufacturing, Auto component manufacturing and textile manufacturing industries.
1.10 SCOPE OF THE STUDY

The leading scope of this research study is to know the importance of the application of E-Commerce in industrial supply chain management and to analyze the impact of its application and effects on business performance. The study tries to find out the purpose of E-Commerce to supply chain management and how its profitability shows in the business environment and to the customers. Almost all of the theory and evidence about the relationship between E-Commerce and supply chain management and performance is based on in the United States, Europe and the East Asian countries. Because very little research has been done in the area of E-Commerce and supply chain management and performance in a developing country context, this study is an attempt to represent practice in a different part of the world and to hope that the findings in India will be more applicable to experience of other developing countries than the research conducts in developed market economies. This study analyses practice and learning in a sample establishments in Coimbatore, Bengaluru and Chennai over a two-year period.

1.11 HYPOTHESES

The following hypotheses are proposed for the study:

- Environment factors, Industry Pressure, Information Intensity, and Customers will not influence the Business Strategy of the firm towards SCM adoption.

- Environment factors, Industry Pressure, Information Intensity, and Customers will not influence the IT Strategic value of the firm.

- E-Commerce challenges will not influence the SCM adoption.
- E-Commerce benefits will not influence the SCM adoption.

- Business Strategy, IT Strategic Value, E-Commerce Challenges and E-Commerce benefits will not influence the SCM Adoption.

- The SCM adoption does not vary with the demographic factors such as market served, size, operation, ownership type, nature of business and city.

- Supply Chain characteristics of the firms do not vary with the demographic factors.

- IT infrastructure characteristics do not vary with the demographic factors.

1.12 METHODOLOGY

The research methodology adopted for the study is of a descriptive type. This method is suitable for answering the type of research questions posed for this study. In a descriptive research phenomenon of the study, are not controlled or modified and are just measured and reported. In addition, the association between the studied variable can be tested and the relationships or causal effects can also be described. To measure the phenomenon of the study appropriate observation technique has to be chosen. Interview or survey technique is the widely used technique for data collection when many number of samples are include. The instrument for the survey will be a printed questionnaire. The questionnaire is developed out of an extensive literature review and standard measures were adopted. Series of interviews with academicians and industry experts were done to validate the instrument. A
pre-test of the instrument is also done with potential respondents and fine tuning on language and structure done. The instrument is designed as a self-administered type with briefing of the concepts and instruction to filling the questionnaire. Multi item constructs that measures the phenomenon are framed. Likert Techniques of five point scale is adopted for the study.

The data source is divided into two category; primary and secondary. Answer for certain research questions are explored through secondary sources. Where ever the information available in the secondary data sources is not adequate to answer the research question, then the primary data are collected. The primary data is taken from the survey responses from the industry. The secondary sources of information include Annual reports of the company, industry and the Government. Concepts and theories are referred from Text books and research journals. Current industry scenario and trends are collected from Magazines, Websites, and Newspapers.

1.13 SAMPLE

The population taken for study are the manufacturing industries that are operating at the business to business (B2B) levels. However, considering the infinite size of the population, the population was limited only to Electronic goods, Auto components and Textile Machineries manufacturing companies in Coimbatore, Chennai and Bengaluru. A pre study revealed that in Coimbatore there were 66 Electronic goods manufacturing companies that were registered. There were 159 Auto components manufacturing companies and 255 Textile machineries manufacturing companies listed. Similarly in Bengaluru there were 662 companies in electronic goods manufacturing, 218 companies in auto components manufacturing companies and 301 textile machineries manufacturing companies for which information was available. In Chennai region, the secondary data revealed that there were 133 companies
manufacturing electronic goods, 173 companies in Auto components manufacturing and 367 companies of textile machineries manufacturing. For the sample framework, 10% representing each industry and from each city are selected. The sample framework is presented in the Table 1.1.

### Table 1.1 The sample framework for the study

<table>
<thead>
<tr>
<th>Industry</th>
<th>City</th>
<th>Coimbatore</th>
<th>Bengaluru</th>
<th>Chennai</th>
<th>Industry Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic goods</td>
<td>Coimbatore</td>
<td>7 (out of 66)</td>
<td>66 (out of 662)</td>
<td>13 (out of 133)</td>
<td>86</td>
</tr>
<tr>
<td>Auto components</td>
<td>Coimbatore</td>
<td>16 (out of 159)</td>
<td>22 (out of 218)</td>
<td>17 (out of 173)</td>
<td>55</td>
</tr>
<tr>
<td>Textile machineries</td>
<td>Coimbatore</td>
<td>26 (out of 255)</td>
<td>30 (out of 301)</td>
<td>37 (out of 367)</td>
<td>93</td>
</tr>
<tr>
<td>City total</td>
<td></td>
<td>49</td>
<td>118</td>
<td>67</td>
<td>234</td>
</tr>
</tbody>
</table>

### 1.14 LIMITATIONS OF THE STUDY

The limitations of the study are:

- The study is confined only to Electronic goods manufacturing, auto component manufacturing and textile machinery manufacturing industry prominently situated in the Coimbatore, Chennai and Bengaluru city only.

- Data is collected using a self-administered questionnaire from one person representing the company. As it is only voluntary for the company to participate in the study, the response rates are limited.
• Some companies are not ready to give complete information such as their market, competitor or financial data.

1.15 CONCLUSION

In the Competitive era E-Commerce and Supply Chain Management in the components of Electronic Goods, Auto Components and Textile Machinery in Chennai, Coimbatore and Bengaluru cities is been explained in the fore coming chapters and it is strongly supported with the data and analysis is been made through various statistical tools and the necessity of the research is highlighted.

1.16 CHAPTERIZATION SCHEMES

This chapter provides an introduction to the study by describing the E-Commerce activities adopted by the businesses especially the application of supply chain management between the business partners along the supply chain. This chapter also introduces the problems faced by the industry and need for adoption of SCM technologies. The study is initiated by defining the research problem and setting the objectives to direct the study. This chapter also proposed some hypotheses and explained the methodology of research.

Chapter 2 presents a review of the literature on the areas of ecommerce technologies used by the industry such as ERP, SCM, CRM etc. Research studies from Indian and foreign contexts are analyzed and various studies that discuss the benefits, challenges of technology adoption are presented.

Chapter 3 presents the basic concepts of the study area. Various theories, concepts and terminologies related to the research area are explained. This chapter explains the E-Commerce applications in industrial
supply chain management and how it helps the business partners to create a strategic advantage by information integration.

Chapter 4 presents the basic concepts of another related study area. Various theories, concepts and terminologies related to the research area are explained. This chapter explains the Overview about Enterprise Resource Planning and Supply Chain Management towards selected industrial Scenario and how it helps the business partners to create a strategic advantage by information integration.

Chapter 5 presents the results of data analysis. First, the characteristics of the respondents are described. Then the study variables are described. The results of data validation are then presented. Finally, inferential statistics for hypotheses testing are presented.

In the Chapter 6, the findings from the primary data are consolidated and the summary of the results of the hypotheses test are presented. The recommendations to various stakeholders based on the study findings are made and finally the thesis is concluded with a summary.

The additional materials of the research such as the instrument used for data collection are presented in the appendices.