CHAPTER 1

INTRODUCTION AND DESIGN OF THE STUDY

Global business is a term used to collectively describe all commercial transactions (private and governmental, sales, investments, logistics and transportation) that take place between two or more regions and nations beyond their political boundary. Global business consists of transactions that are devised and carried out across national borders to satisfy the objectives of individuals, companies and organizations. These transactions take place on various forms which are often interrelated. Primary types of international business are import-export trade and Foreign Direct Investment (FDI). The latter is carried out in varied forms, including wholly owned subsidiaries and joint ventures. Additional types of global business include licensing, franchising and management contracts.

Every business enhanced anywhere in the world can generate an opportunity of business creating a customer despite time, place and people. The textile and apparel industry is one of the leading segments of the Indian economy and the largest source of foreign exchange earnings for India. Shanmugasundram & Panchanatham (2011) say that this industry accounts for 4 percent of the Gross Domestic Product (GDP), 20 percent of industrial output and slightly more than 30 percent of export earnings. The textile and apparel industry employs about 38 million people, making it the largest source of industrial employment in India. It has the second largest yarn spinning capacity in the world, accounting for roughly
20 percent of the world’s spindle capacity. India's spinning segment is fairly modernized; approximately 35 to 40 percent of India’s spindles are less than 10 years old. During 1989-98, India was the leading buyer of spinning machinery, accounting for 28 percent of world shipments. India’s production of spun yarn is almost accounted entirely by the “organized mill sector”, which includes 285 large vertically-integrated “composite mills” and nearly 2,500 spinning mills. India has the largest number of looms in place to weave fabrics accounting for 64 percent of the world’s installed looms. However, 98 percent of the looms are accounted by India’s power-loom and handloom sectors. Composite mills account for 2 percent of India’s installed looms and 4 percent of India’s fabric output.

The handloom and power-loom sectors were established with government support mainly to enhance business opportunities. These sectors benefit from various tax exemptions and other favorable government policies also. The production of apparel in India was, until recently, reserved for the Small Scale Industry (SSI) sector, which is now a unit enhancing global business with IT exploration and system reinforcement in every part and step of its processes and functions. Additionally, apparel units with larger investments were allowed to operate precisely as Export-Oriented Units. As a result, India’s apparel sector is highly growing with an aid of information systems applications.

A key requirement in today’s business environment is the ability to communicate in a more effective manner internally with the employees and externally with trading partners and customers. An intranet is a private internal business network that enables employees to share information, collaborate and improve their communications. An extranet enables business to communicate and collaborate more effectively with selected business partners, suppliers and customers. An extranet can play an
important role in enhancing business relationships and supply chain management.

This research identifies influence of information system in business processes in Tirupur garment export industry, Tamil Nadu, India. It will also explain the benefits of intranets and extranets, bringing the global business effectively and efficiently along with the review of some contemporary key issues of the process. Additionally, this research will enable suggestions for every garment industry of Tirupur, to revamp their strategies for better global business. Tirupur is known for its export earnings because it is one of the largest foreign exchange earning towns in India hence can be called “Textile Valley” similar to that Bangalore being called as ‘India’s Silicon Valley’, Last year, the export turnover from this town was more than Rs. 5,000 crores. There are almost 7,000 garment units in the town which provide employment opportunity close to one million people. The first spot of any international buyer for Indian garments is Tirupur and buyers from 35 countries frequently visit Tirupur.

Tirupur can deliver huge order even in one or two days which attracts the buyers to a great extent. Fifty-six percent of India’s total knitwear exports are from Tirupur. The export import policy of 2002-2007 makes laudable tribute to Tirupur for its contribution to the export efforts and calls it a ‘Town of Export Excellence’. Because of these highlights or peculiarity of the sector the Indian textile industry is booming as the leading market in the world. The current domestic market of textile in India is expected to increase to US$ 60 billion by 2012 from the current US$ 34.6 billion. The textile export of the country was around US$ 19.14 billion in 2010, which saw a stiff rise to reach US$ 22.13 billion in 2010-2012. The share of exports is also expected to increase from 4 percent to 7 percent within 2013.
1.1 ROLE OF INFORMATION TECHNOLOGY IN GARMENT INDUSTRY

With the integration of information and communication technology a substantial revolution arises there by establishing a fair relation within and between the organization and the individual. As a result of this amalgamation, the cost is reduced, productivity shoots up and participation of the customer is high. When the Information Communication Technology (ICT) is coupled with prompt strategy and policy it will help the small and medium enterprises to compete equally with the large capital firms. Today, the focus is on how to gain more profit by not only increasing revenues but also increasing gross margins with the help of emerging technology. This phase is called e-business and it comprises all the applications and processes which aids a company to service a business transaction. In addition to e-commerce, e-business includes both front-office and back-office relevance that act as a heart for modern business.

Thus, e-business is reframing the overall strategy, procedures and model thereby enhancing the relation with customers for maximizing the profit. International business has to be carried over with extreme care these days. When business is extended beyond the borders, few port authorities impose charge on every consigner who uses the traditional old paper. So in order to avoid this, electronic data interchange procedures are used and thereby it aids in carrying over electronic form of business with a combination of technology and services that foster the automatic transaction of business and related information with the help of the following three levels which are depicted in Figure 1.
- Within a business (INTRANET)
- Between two business, one of whom could be a supplier (EXTRANET)
- Between a business and its customers (INTERNET)

![Diagram of ICT levels in business](image)

Source: Adapted from Chaffey et al. (2003, p. 26)

**Figure 1.1** Levels of ICT application in business

### 1.1.1 Internet and Intranet

The internet is a global system of interconnected computer networks that use the standard internet protocol suite (TCP/IP) to serve several billion users worldwide. It is a network of networks that consists of millions of private, public, academic, business and government networks from local to global scope that are linked by a broad array of electronic,
wireless and optical networking technologies. The internet carries an extensive range of information resources and services, such as the interlinked hypertext documents of the World Wide Web (WWW), the infrastructure to support email and peer-to-peer networks. Electronic business involves business processes spanning the entire value chain electronic purchasing and supply chain management, processing orders electronically, handling customer service and cooperating with business partners. E-commerce seeks to add revenue streams using the internet to build and enhance relationships among clients and partners. According to research firm IDC, the size of total worldwide e-commerce, when global business-to-business and consumer transactions are added together, will equate to $16 trillion in 2013. IDate, another research firm, estimates the global market for digital products and services at $4.4 trillion in 2013. A report by Oxford Economics adds those two together to estimate the total size of the digital economy at $20.4 trillion which is equivalent to roughly 13.8 percent of global sales.

While much has been written on the economic advantages of internet enabled commerce, there is also evidence that some aspects of the internet such as maps and location-aware services may serve to reinforce economic inequality and the digital divide. Online shopping has boomed both for major retail outlets and small artisans and traders. Business-to-business and financial services on the internet affect supply chains across entire industries. For the purpose of communication, collaboration, information sharing and business support, like an internet environment, intranet is established within the organization. Intranets are the websites that are accessible and available for the employees within the company.

With the help of an intranet, the different units of the organization can communicate easily and effectively among themselves.
For example, if the production department is in requirement of some raw materials, report of the stores department can be accessed and can also check whether the required material is in the stock. If it is, the production manager can send the requirement list to the stores department. The stores manager, who in turn makes arrangement for the materials to be delivered and update the same in the report and send delivery note for the same, thus each and every department is connected for all operations or activities thereby saving time.

A company’s intranet can also be accessed through the internet by customers, suppliers, and other business partners through extranet links. Intranet applications were first applied at universities followed by industries and commerce fields. Then company’s growth, development, managerial or commercial purposes to non commercial uses such as chat rooms are due to the major applications of intranet. Developing home pages, newsletters, technical documents, product catalogues and employee directories became simple task with the use of internet. Communication between individuals and groups, transaction with other organizations, computer-based information system, organization wide information search and recording best practices and business processes on the intranet are possible in support of knowledge management. The intranet has wide range of application by enhancing the flow of data in the organization, timely access of vast data base and predominantly it replaces traditional paper based work with web applications and thus increasing the accuracy of information.

Intranets are also being used as a platform for developing and deploying applications to support business operations and decisions across the internetworked enterprise. Many organizations understand an intranet’s benefits and invest in these projects. Increasingly, intranets are being used
to deliver tools, for example collaboration (to facilitate working in groups and teleconferencing) or sophisticated corporate directories, sales, customer relationship management tools and project management etc., to have advance productivity. Intranets are also being used as corporate culture-change platforms. For example, large numbers of employees discussing key issues in an intranet forum application could lead to new ideas in management, productivity, quality and other corporate issues. In large intranets, website traffic is often similar to public website traffic and can be better understood by using web metrics software to track overall activity. User surveys also improve intranet website effectiveness. Larger businesses allow users within their intranet to access public internet through firewall servers. Users will have the ability to screen received and sent messages keeping security intact. When part of an intranet is made accessible to the customers and other participants of the business then that will become an extranet. Organizations can send private messages through the public network, using special encryption/decryption and other security safeguards to connect one part of their intranet to another.

Experienced intranet user, editorial and technology team work together to produce in-house sites. Most commonly, intranets are managed by the communications, HR or CIO departments or combination of these in most of the organizations. Because of the scope and variety of content and the number of system interfaces, intranets of many organizations are much more complex than their respective public websites. Intranets can help users to locate and view information faster and use applications relevant to their roles and responsibilities. With the help of a web browser interface, users can access data held in any database of the organization. It can be available anytime subject to security provisions from anywhere within the company workstations, increasing employee’s ability to perform their jobs
effectively, more accurately with the confidence that they have the right information. It also helps to improve the services provided to the users. It allows organizations to distribute information to employees on required basis; employees may link to relevant information at their convenience, rather than being distracted indiscriminately by email.

1.1.2 Extranet

Business continues to use open internet technologies (extranets) to improve communication with customers and partners, agents and buyers. It helps in gaining many competitive advantages along the way in product development, cost swings, marketing, distribution and leveraging their partnerships. Extranets are network links that use internet technologies to interconnect the intranet of a business with the intranets of its customers, suppliers and other participants of export. Companies can establish direct private network links between themselves or create private secure internet links between them called virtual private networks. Thus extranet enables buyers, suppliers, consultants, subcontractors, business prospects and others to access selected intranet websites and other company’s databases.

1.1.2.1 Extranet applications

The series of possible extranet applications is almost countless. Examples of extranet applications are clustered into several categories according to their corporate functions and disciplines are as follows:

1.1.2.2 Sales and promotion

The sales sector faces a continuous challenge delivering upto date reference data to customers, often detached over a large area. Sales representatives know that having the exact information accessible at a
critical moment can be the variance between making and losing a sale. Marketing people, in the meantime, need access to database-type information on existing and impending customers. An extranet can be used for all these circumstances to provide information regarding product provisions and prices, sales leads, competitive information gleaned from a competitor’s web site, sales activities, just-in-time training and real-time sales presentations.

1.1.2.3  **Product expansion**

In today’s developing environment, apt information becomes decisive to product development groups as product development activities often depend on efficient project management. Therefore, team members need virtuous communication channels to update project schedules, to report and organize their progress, and to receive and evaluate customer’s feedback. An extranet claim can prove useful by providing information such as product provisions and designs, schedule changes, team schedules and individual areas of charge, customer comments and requirements as well as features of key competing products.

1.1.2.4  **Customer service and sustenance**

Extranet applications in this category can have a much comprehensive impact on the quality of internal and external communication. For example, communal applications let the service and support staff digs systematically to investigate a particular issue. Newsgroups with negotiated discussions provide opportunities for detailed analysis of frequent customer problems and their causes.
1.1.2.5 Human resources solicitations

An extranet can be an imperative tool for human resources to recruit employees. The company can post job preambles on the extranet and use e-mail to receive applications and resumes. Furthermore, HTML forms are fetching popular for storing data. Extranet applications can also allow access to discretionary benefit packages in addition to provide value information, policy statements and instructions, mission and goal statements, searchable core telephone manuals, employee surveys and personal needs of employees.

1.1.2.6 Financial applications

Procuring departments can maintain online catalogs of agreed supplies and equipment. Client departments then just need to visit the firm’s extranet to place their orders. At the same time, the link can simplify the billing and purchasing from peripheral vendors. In this particular occasion, the web application is often denoted as a form of Electronic Data Interchange (EDI). Investment firms have also started to use extranets to provide information to their customers and if security anxieties can be overcome, to handle customer transactions over the web.

1.2 NEED FOR THE STUDY

Integration of information and usage of latest technology creates a tremendous change in the growth of relation within and between the organizations and the individuals. This binding when applied with apt strategy will certainly help the small and medium scale industries to compete equally with the established firms. Many emerging technologies such as intranet, internet, extranet aid in the enhancement of business and
they act as a key aspect for the development of emerging countries because they give opportunities for communication, storage and retrieval of large amount of data. In developing countries like India, the small and medium firms find it difficult to access the internet due to overwhelming cost. E-commerce is an improved version of the existing traditional business without the involvement of human beings as it only uses the electronic media. Some firms use e-commerce and e-business interchangeably as distinct concepts. In e-commerce, ICT is used in inter organizations or intra organizational transactions and in business for consumer transactions and to gain potential benefits from the business.

1.3 RESEARCH GAP

A research gap is the missing element in the existing research literature, from the literature survey it is been found that researches have been done related to intranet, extranet, supply chain management pertaining to Textile industries and they are in generalized manner. However none of the studies provide insight into developing a customized model for the Tirupur Garment export industries thereby enabling system oriented global business.

1.4 STATEMENT OF THE RESEARCH PROBLEM

Recently Information Technology and Information Technology Enabled Services (ITES) are the major sources of Indian economy placing the garment export industries in second position which was a major source of income from long back. In the world, India is known for both of these industries. When these two sectors go hand in hand the new revolution will be fruitful. The application of IT in textile and garment industry can help them in improving the overall performance. In a country like India, it is
very important that textile industry remain strong and growing continuously as it is the provider of abundant job opportunities after agriculture. Competing in today’s business scenario is not an easy task, although the apparel industry is one of the major contributor in today’s economy and it has its own deficiencies in accessing unexplored global market due to lack of deployment of information system application and thus without a systematic procedure to retain customers thereby affecting factor of time and profit maximization.

Communicating effectively both at the customer and supplier end is the major requisite of the business which is possible only with the help of usage of technology. But the cost of implementation of the software with updated technology is not feasible for small and medium scale industries. The industries with the age of more than ten years have the practice of usage of information system but the budding industries till have the practice of traditional paper works which will ultimately lead to waste of time and non availability of timely access of data which are the major barriers for successful production. The Tirupur garment industries thus lag in the usage of system thereby loosing the place in global market competition.

1.5 OBJECTIVES OF THE STUDY

India’s textile industries largely depend upon the textile manufacturing and export of textiles which is a major role in the economy of the country. India earns about 27 percent of its total foreign exchange through textile exports. Further, the textile industry of India also contributes nearly 14 percent of the total industrial production of the country. It also contributes around 4 percent to the GDP of the country. Indian textile industry is also the largest among the other countries in terms
To study the urge of Tirupur garment export industry to expand their market globally

To elucidate the potentiality of Tirupur garment export industry to expand their market globally

To study the awareness of information system interface in global business in Tirupur garment export industry to expand their market globally

To enumerate the problems faced due to deficiency of information system orientation for garment exporters in Tirupur garment export sectors face currently. The objectives of this study are:

- With abundant human resources the garment sector in this region now faces problems to compete in the global market because of the usage of outdated technology with huge unorganized and decentralized system that had overseen export garment production since 1974 and relentlessly reduced India's shipping capacity.

- India's textile industry currently generates employment to more than 35 million people. It is also estimated that, the industry will generate 16 million new jobs by the year 2013. India has large desire as a provider in the international market

- The prospect of grasping these determinations became a certainty with the termination, in large part, of the proportion system that had overseen export garment production since 1974 and unrelentingly reduced India's shipping capacity.

- Indian textile sector is also likely to provide additional employment in the future, as it also provides scope for the other ancillary sectors. Indian textile

- It not only generates jobs in its own industry, but also provides scope for the other ancillary sectors. Indian textile
1.6 HYPOTHESIS OF THE STUDY

The main function of hypothesis is to suggest new experiments and observations. Many experiments are carried out with the objective of testing hypothesis. Decision makers often face situation wherein they are interested in testing hypothesis on the basis of available information and then take decisions on the basis of such testing. In this study the hypothesis are as follows:

- Whether the deficiency of usage of information system will itemize problems in garment export industry?
- Whether the information system interface will create any awareness among the Tirupur exporters to expand their market globally?
- What are all the factors which insist Tirupur exporters to expand their market globally?
- What are the opportunities these garment exporters have when they incorporate information system orientation?

1.7 RESEARCH METHODOLOGY

1.7.1 Research Design

The research methodology adopted for this study is of a descriptive research. The major purpose of this research is description of
the state of affairs as it exists at present. The method of research included in descriptive research is survey method of all kinds, including comparative and correlation methods. In a descriptive research, phenomenon study is not controlled or modified and is just measured and reported. In addition, the association between the studied variables 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 numbers of samples are included. The instrument for the survey will be a questionnaire and standard measures are adopted for series of interviews with industry experts to validate the instrument. Five point Likert Techniques are used for the analysis of the study.

A pilot survey is a methodological test intended to ensure that proposed methods and procedures will work in practice before being applied in a large and expensive investigation. Pilot study provided an opportunity to make adjustments and revisions before investing in and incurring the heavy costs associated with a large study. The pilot study is carried over for a sample of 50 respondents and this survey helped to reconstruct the questionnaire with slight changes. As the respondents couldn’t understand few questions clearly, those questions were reframed for easy understanding. Thus after the pilot survey, the final questionnaire was designed which comprises of six subsections with reference to objectives with a procedural flow.

1.7.2 Sampling Design

The population taken for the study are Tirupur garment exporters who are registered under AEPC (Apparel Export Promotion
Council). As per the statistics, there are 1909 garment exporters registered with AEPC as on 31.09.2012. Sample sizes of 500 garment exporters were chosen for the study which is not less than 25 percent of the firms under AEPC.

1.7.3 Sampling Method

The study aims to find out the availability of system resources and the benefits gained by implementation of such systems in Tirupur garment exporters registered under AEPC as on 31.09.2012. Probability random method is used as a sampling technique in this study.

1.7.4 Sampling Unit

The e-mail addresses of all the exporters were obtained from the AEPC and the response is obtained by mailing the questionnaire to the respective mail ids. Respondents of the garment export company are the sampling unit for the study.

1.7.5 Universe / Population

The list of garment exporters in Tirupur have been obtained from the Apparel Export Promotion Council (AEPC) which comprises a total population of 1909 garment export companies. From the whole population of 1909, authorized people of the garment export industries are communicated for the survey process on a random basis.

1.7.6 Sample Size

The sample size is the number of respondents who reply back to the questionnaire. In this research the population size is known (1909) and
hence the following formula has been used for finding the sample size with
a standard deviation of 0.5 with 95 percent of confidence level (Z = 1.96)
and 3.77 percent as margin of error (Margin of Error is computed using
sample size calculator from the following link, http://www.raosoft.com/samplesize.html) and thus the sample size is
computed to be 500 as follows.

\[
\text{Sample Size (n)} = \frac{Z^2 \times p \times q \times N}{e^2 \times (N-1) + Z^2 \times p \times q} \quad (1.1)
\]

where

\[Z = \text{corresponding Z score for 95 percent of confidence level (1.96)}\]

\[P = \text{Sample Defective Population (0.5)}\]

\[q = 1-p (0.5)\]

\[N = \text{No. of sample (1909)}\]

\[e = \text{Margin of Error (0.03766)}\]

The required Sample Size (n)

\[
n = \frac{(1.96)^2 \times 0.5 \times 0.5 \times 1909}{(0.0377)^2 \times (1909-1) + (1.96)^2 \times 0.5 \times 0.5} = 500
\]

1.7.7 Data Collection Method

The data collection is divided into two types as primary and
secondary. Answer for certain research questions were explored through
secondary sources which were already available in the form of annual reports were obtained from the companies, industries and the government. Concepts and theories were referred from text books and research journals. Current industrial scenario and trends were collected from magazines, websites and newspapers. There arises certain situation where secondary data alone is not sufficient to handle the study. At this juncture the primary data gave a helping hand. Primary data regarding the opinion and the views of the garment exporters were collected through the questionnaire. Thus the study is carried over with the collected primary data and secondary data and was analysed using appropriate techniques to fill the existing research gap.

1.7.8 Tools for Data Collection

The primary tool for data collection is questionnaire in which the questions are of open ended, closed ended, ranking method, factor analysis etc. The questionnaire is broadly classified into six sections, in which the first section is about personal information that investigate details about the respondent’s company name, designation and educational qualification. The next section is named as organizational information which consists of questions to get information like company ownership, annual sales, number of branches possessed, export volume, usage of ERP systems etc., The questionnaire also comprises of information like deficiency in system usage and awareness among exporters in the usage of system. The main part of the questionnaire is the integration of information system for business related factors i.e. the information like supplier, customer relationship, increase/ decrease in profit proportion, adaptability to change to new environment, effective usage of e-commerce and e-business. The final section of the questionnaire enquires about the
availability of global market opportunity, their channel of transportation and factors which are influencing buyer’s decision.

1.7.9 Tools for Data Analysis

The data collected through the questionnaire were checked for its reliability and validity and then they were analyzed using SPSS (Statistical software Package for Social Sciences) and VPLS (Visual Partial Least Square). The analysis of the data is carried over with various tools like percentage analysis, chi-square test, partial least square regression, confirmative factor analysis, ANOVA, Jackknife bootstrapping technique and path analysis.

1.8 SCOPE AND LIMITATIONS OF THE STUDY

1.8.1 Scope of the Study

The leading scope of this research study is to emphasis the importance of enabling information system oriented global business with respect to Tirupur garment export industries and to analyze the developed effects of business performance. This study will also find out the opportunities available to Tirupur garment industry in global business market influencing market expansion with respect to the competition in the business environment. The researcher developed Garment Export Management Model for easy access of information and the developed system is robust and secure. The same model can be used for other export industries like spare parts, spices, knitwear and spinning according to their product varieties and usage.
1.8.2 Limitations of the Study

The Limitations of the study is confined to garment exporters located in Tirupur and particularly registered under AEPC (Apparel Export Promotion Council) only. The researcher can’t bring the entire idea of the study under the questionnaire since the data collection was through the questionnaire and the response rates were also limited. Few companies hesitated to give data relevant to sales turn over, their export volume and other financial data.

1.9 CHAPTER SCHEME

Chapter 1 gives an introduction about the Tirupur garment export industry and their need for implementing the information system applications particularly intranet and extranet. It also enumerates the problems faced by the garment exporter due to insufficient resources for system access. It also gives brief explanation about the objectives and hypothesis of the study, research design adopted and also explains about the chosen sampling design.

Chapter 2 depicts the review of literature in the field of garment exports, e-business, ERP, intranet, extranet etc. The chapter comprises of both Indian and foreign studies which analyzes about the advantages of technology adoption, problems in reinforcing the information system and the opportunity for global market.

Chapter 3 comprises of the theoretical explanation about the study, the concepts and terminologies related to the topic, importance of export / import business, their effect on economy and biography of Tirupur.
The chapter also explains the potentiality of Tirupur garment industries and the importance of integrating the information system with business processes.

Chapter 4 explains in detail about the GEM (Garment Export Management) model developed based on the study. The chapter distinguishes between the existing system and the proposed developed system with the appropriate software suit. The implementation of the system and online web hoisting is being done and the screen shots of the models are also given.

Chapter 5 represents the results of data analysis. Initially the analysis starts with the personal information followed by organizational information followed by the deficiency of information system resources and then the awareness of system usage among the garment exporters of Tirupur and the most important part of analysis is the integration of information system usage with business process followed by the opportunity for global business market by reinforcing this system.

Chapter 6 begins with the findings for the primary data collected and the corresponding suggestions were given to the garment exporters to revamp their business thereby improving the economy of the nation. The chapter ends with the conclusion and future enhancements of the study.

Appendix comprises of list of garment exporters who have registered under AEPC and the questionnaire used for primary data collection and the source code for proposed model.