CHAPTER 9

CONCLUSIONS, LIMITATIONS AND SCOPE FOR FUTURE WORK

9.1 CONCLUSIONS AND OBSERVATIONS

This research highlights the level of influence of e-business on various SC component factors. While earlier studies mainly concentrated on the influence of internet in supply chain of MSMEs dealing with one or two specific aspects, the emphasis of the present research work is to investigate the influence of e-business on supply chain in MSMEs in a holistic manner. Arising out of the analysis, findings as discussed in earlier chapter, major conclusion are briefly summarized.

- The usage of e-business systems like ERP, MRPs, CRM and SRM was found to be quite high. As high as 72.5% of MSMEs were found using some form of ERP. This can be attributed to their perception about advantages of using such packages in enhancing organizational efficiency. However the use of e-business systems like JIT is at a lower level i.e, 30.5 % only. Perhaps greater awareness about usage of such advanced systems will provide substantial value addition in MSMEs.

- By their own admission about 40% of MSMEs are not happy about the way their supply chains are managed. The use of e-business systems are not the only aspect for the success of
SCM, nevertheless, it continues to remain as an important aspect. The MSMEs should concentrate on making use of the Institutional support provided by the government and adopt a better and appropriate strategy.

- It is interesting to note that all of the MSMEs are using one form of the e-business systems or the other. This shows the penetration of ICT tools in Indian manufacturing industry. But, as indicated earlier, it is imperative that adoption of high value adding e-business systems will help MSMEs for their sustenance and growth.

- It is pertinent to note that 69.5% of the MSMEs are not ready to practice EDI, even though, on an average 49.03% of the MSMEs started using e-business enablers. MSMEs can have better trust with partners and develop secured infrastructure for installing EDI. This will ensure attaining necessary synergy which can help to overcome the inherently limiting size effect characteristic of MSMEs.

- Only 27.5% of the MSMEs are using the enabler e-procurement, despite the fact that this enabler provides significant decrease in cost and time. Appreciation of this will enhance the MSMEs usage of other enablers e-auction for better negotiation, e-payments besides use of common facilities available. The MSMEs should improve their process of practicing these enablers with the support of government institutions.

- The influence of usage e-business in SC enabler third-party logistics is only average as evidenced form the mean rank values (2.6). 3PL helps in small batch replenishments in an
economical way by consolidating loads from multiple suppliers. As it has the potential for major cost reduction and performance, the MSMEs need to supplement this enabler in coordination with e-business system for the flexibility in their operation.

- All benefits resulting from the usage of SC enablers are due to adoption of the SC enablers strategic planning especially in procurement and distribution and maintenance of close partnership with suppliers. Focus on the usage of SC enablers will provide adequate opportunity for MSMEs to foster SC alliances.

- Team work and reduced inventory level are the two important attributes influenced greatly with the usage of e-business as evidenced by the mean rank value 3.99 and 3.56 respectively. A multi-speciality small team in MSMEs can concentrate on improvement of interaction at all levels of SC with the focus on process instead of function. Reduced inventory level ensure optimal utilization of the store space and reduction in inventory cost. Concentrating on these attributes will definitely enhance the performance of SC.

- It is imperative that the entire activities of MSMEs be linked electronically with appropriate e-business systems and that they should be updated periodically as evidenced form the analysis. As the development of infrastructure for e-business system ensures the benefit of connecting all the facets of business, the top management should view these as leverage for productivity and performance. The Government of India, Ministry of MSMEs has developed infrastructure facilities for
the flow of information to MSMEs. They provide a networking system to the MSME sector, called SENET (SMALL ENTERPRISE NETWORK). This facilitates creation of database and provide access to useful information to the target group of small enterprises in electronic form over a network.

- Benchmarking of customer focus, manufacturing operations and employee training activities are greatly influenced by the use of e-business in MSMEs. This is evident from the mean rank values of 3.7, 3.64, 3.6 respectively for the three aspects. By paying proper attention to these factors, the MSMEs can develop agile organization to improve the versatility and standard in products.

- Influence of e-business factors in performance of SC is only average. The major factors and their mean rank as evidenced from the analysis include responsiveness to urgent deliveries (3.37), quality of delivered goods (3.31), flexibility of service systems to meet particular customer needs (3.31), improved buyer-supplier partnership level (3.27) and improvement in delivery performance (3.27). Attention on these factors and streamlining the development continuously will guarantee improvement in performance. This will result in the availability of better products and services thereby facing the competition effectively.

- Factor analysis was performed to identify important aspects that must be focused on, to enhance MSMEs SC performance. As per the study, Supplier - MSME relationship and Supplier involvement are the two significant factors. By addressing
these twin factors the MSMEs can go a long way in enhancing the SC performance.

- The financial performance of MSMEs can be addressed in terms of increase in profitability (3.51), increase in market share (3.37), increase in return on investment (3.23) and decrease in cash to cash cycle time (3.13) as indicated by the result of the analysis. Bestowing more focus on these factors with the aim of design activities of SC, will consistently deliver to each customer the values they desire the most.

- As per the study factors that have average influence by e-business on business performance of SC are; decrease in order fulfilment lead time (3.24), production lead time (3.22), inventory days of supply (3.06) and new product development time (2.98). MSMEs can have a trade-off between forecasting accuracy and maintaining inventory level which help them to reduce the time in all aspects mentioned above.

- Holding Inventories (0.902), using third party logistics (0.847) and practicing JIT supply (0.615) were identified as the prominent SC enablers based on regression analysis. There is an apparent contradiction of significance attached to holding inventory and JIT practice. Actually it shows the practice of JIT gaining slowly but with definite ascendance.

- This study confirms that maintenance of long term relationship with suppliers is an important aspect for procurement decisions. This is confirmed by the high R² value of 0.291 in the regression analysis. Further, this can be improved by enhanced sharing of information with the
partners and by involving them at various stages of manufacturing decision making process.

- A relatively low goodness-of-fit with 18.9% variation indicate the relationship between inventory management decision in MSMEs and measure of performance. To achieve better inventory management and to enhance their performance, the MSMEs need to improve communication with all the links of the supply chain.

- Influence of e-business is average in transportation management with factors as mode of transportation (3.41), monitoring on time arrivals of carriers (3.29), scheduling pickups at regional distribution centers (3.27) and transportation cost (3.11). These factors have to be addressed seriously to automate the transportation solution including the routing and cost analysis.

- An Interpretive Structural Modelling (ISM) was built to provide a framework for identification of the most significant e-business factors driving the performance of MSMEs.

- According to the ISM, e-SCM attributes, e-SCM infrastructure, e-inventory management in SC, firm’s strategy on SC and SCM benchmarking are the six major e-business factors that drive the immediate improvement in SC performance.
9.2 LIMITATIONS OF THE STUDY

Though every effort has been made by the researcher to carry out this exploratory study properly, certain limitations are unavoidable. The limitations of the study is summarized below:

i) This is an exploratory research study, primarily aimed at examining the influence of e-business system in supply chain components and performance of MSMEs. The respondents mainly comprise micro, small and medium enterprises (MSMEs) in and around Chennai. The results are based on the analysis of the scheduled survey data with a sample of 131 respondents. Hence with limited sample size and firms located within a geographically small area, it may be difficult to generalize the findings.

ii) As India is vast country with different cultures, states with divergent industrial policies, there are bound to be variations in the findings if a survey is conducted at an all India level.

iii) The study primarily concerned with examining the influence of the available e-business systems in SC components mentioned and performance aspect, no other management aspects have been considered.

iv) The findings of the study are based on primary data. The primary data was collected through responses received from owner or manager or the key person of the organization. It is quite likely that in some cases their views are biased.
v) The study is limited to MSMEs engaged in manufacturing activities, from other fields viz, service sector are not taken in consideration.

9.3 SCOPE FOR FUTURE RESEARCH

This research work is an exploratory one aimed to find out the level of status of e-business application system besides investigation of influence of e-business on SC performance and measure the influence of e-business in MSMEs, thereby contributing to the existing literature in this area. The uniqueness of this work is adoption of a holistic approach to the study instead of addressing one or two aspects as many research studies in the past have addressed. Taking into account the framework and objective of the present study and limitations, the scope for further research study is detailed below:

i) In this research study it has been established that long term relationship with suppliers shows association with holding inventories and JIT supply. This relationship provides scope for future research in this aspect.

ii) Future research could extend the present study to different segments of the MSMEs so as to ensure better generalizability of the result to the whole sector. The service MSMEs could also be considered for studying the influence of e-business, since it is emerging very rapidly.

iii) There is ample scope to undertake research to compare the influence of e-business in different segments of MSMEs and also with LEs to get better comprehension of the level of influence of the e-business systems.
iv) It is possible that a researcher can concentrate on any one of the components of SC particularly the supplier management side and establish detailed relationship with the e-business.

v) Penetration of e-business in customers service management area of MSMEs to identify the amount of peer pressure for implementation of e-business systems is another aspect that provide scope for research.

vi) Future researcher can address the reasons behind as why some of the MSMEs are not using the value added e-business systems in various perspectives.

vii) The ISM model developed can be validated in some other segments, for instance in service industries, some other industrial city with in the country to find its output in terms of performance to establish a common framework.

viii) The relationship between specific e-business systems and the supply chain performance in MSMEs can also be evaluated to measure the efficiency and utilization of the e-business system.

ix) A critical examination of available government schemes and support to MSMEs and how far it is utilized by the MSMEs in India, is yet another aspect worthy of research study to create awareness and also to find the gaps between the schemes and MSMEs