CHAPTER VIII

CONCLUSION

This study has examined the origins of the Internet and has described the process by which this network of computers was set up. It has examined its growth in size and complexity, its use domain name servers for identification of sites and the establishment, and functioning of the World Wide Web. It has also defined E-Commerce, described the ranges and types of E-Commerce transactions and explained the significance of each type of transaction.

An assessment of the current level of use of E-Commerce in the U.S. and West Europe was given thereafter. This included major developments in this field, their impact on business strategies, their categories, a description of business processes that can conducted electronically and the advantages and disadvantages of using such business processes.

A perspective was also given on the economic and business implications of changes that were generated by information technology and the Internet, on the consequences of moving commerce to the Internet and in the matter of the availability of global presence and global choice available for the consumer. The resultant effects on costs, value, delivery, limitations and the overall competitiveness of business processes were also arrived at and illustrative examples given of E-Commerce sites and applications with specific focus on the South Asian region.

In the Indian context, the study described the main features of the IT Act, the provisions for the use of digital signatures in electronic transactions and provided an illustrative list of examples on the use of E-governance in the various States in India. The study also
identified some of the applications of E-Commerce based techniques in Indian enterprises and examined their impact on costs, efficiency and productivity.

It further noted that the Indian industry, the Central and the various State governments introduce new and innovative applications in this field on a regular basis. In addition the study observed that although some States in India tended to be a marginally ahead of the others in such applications, the differences between them appeared to be on the decrease.

In the context of Bangladesh, the study described the state of the information technology sector there and identified future areas of growth. It examined the level of human resources available in the IT sector and evaluated the extent of computer and internet usage in cities and in rural areas. It also described the steps taken by the government to support the IT sector and the resultant activities that were generated.

Furthermore, the study assessed the state of E-Commerce in Bangladesh, identified constraints and evaluated its potential for growth. In addition the study examined the regulatory and legal environment for E-Commerce including areas such as dispute settlement, consumer protection, infrastructure, investments, finance, trade and intellectual property rights.

Thereafter examples of E-Commerce initiatives taken in Bangladesh were identified and it was emphasized that the list of examples given was for illustrative purposes only and was not exhaustive. It was concluded that despite the relative state of overall economic development, enterprising entrepreneurs and organizations in Bangladesh were active in introducing new and innovative applications in this field on a fairly regular basis.
To have an overview of India and Bangladesh in the area of regulation and in order to provide a relative picture, a brief comparison of the IT Acts of India and Bangladesh was given. This comparison also served to provide a background and perspective of the stages of development and the levels of progress in this area in India and Bangladesh. While providing the two Acts for reference and comparison, it was noted that so far only the Bengali version of the IT Act of Bangladesh was available.

After providing this background and environment of E-Commerce in the two countries and drawing conclusions on future prospects, the study closely examined some of the specific initiatives taken by selected enterprises in the use of E-Commerce based applications in India and Bangladesh in the export and commercial transactions of castor oil, cashew, jute and steel and in the manufacture and assembly of motor vehicles and paper.

Each case study was based on actual situations in the industry and data was received directly from the source.

The findings in each case are as follows:

8.1 Castor oil

The study of castor oil exports indicates that in India in the B2B sector backward linkages based on close telecommunication with processors of agricultural commodities and transporters are effective in considerably increasing efficiencies in export operations and in the improvement of export prices. E-Commerce based applications were found to augment efficiency in the B2B interface between the convergent organized sector like established exporters and the relatively less organized, individually smaller and
numerically divergent groups on the supply side like farmers, processors, dealers, brokers and transporters.

The basic nature of communication between the exporter and the supply side was impersonal. The product was essentially unbranded. The E-Commerce based applications were also found to partially compensate for many of the difficulties arising out of infrastructure issues in exports such as the lack of adequate storage at collection points, insufficient and uncertain road networks and need for warehousing at short notice at port.

8.2 Cashew

In the case of cashew an injection of E-Commerce based application was made in the forward linkages between the exporter and divergent and numerous foreign buyers to try and improve export prices. Here the increase in the efficiency of export prices was found to be both marginal and transient. The supplier formed the convergent side and the buyers, the divergent side.

The divergent side of the transaction was numerous but organized; the relationship between the sides was essentially personal; the system did not bring in any element of compensation for infrastructure shortcomings. Furthermore the entities in the divergent side were not necessarily smaller than the suppliers.

The conclusion that can be drawn is that though a product is unbranded, an E-Commerce based approach can improve export prices in a B2B interface between a convergent side and a divergent side, where the relationship between the sides is not personal and usually where there is an element of compensation of infrastructure shortcomings.
8.3 Steel

In the case of the disposal of steel items in the B2B category all the ingredients for efficiency improvement using E-Commerce are there. In the two sides involved in the transaction the seller is convergent and organized while the other, the buyers, is divergent, disorganized and numerous. The individual entities in the divergent side were smaller. The relationship between the sides is impersonal and the product is unbranded.

There is an element of the E-Commerce applications partially compensating for difficulties arising out of infrastructure related issues such as distances to be covered over difficult roads, timely deliveries of physical bids and bid bonds and the possibility of making unfruitful and costly journeys.

In addition to improvement in price realizations, the E-Auctions brought about effective competitive bidding at low cost to the bidders across the various geographical segments of the markets, allowed penetration down the value chain with more actual user participation. Auctions of smaller lot sizes were also possible without increased transaction time and costs.

8.4 Jute

The survey results and discussions show that in Bangladesh in the case of backward linkages based on close telecommunication links with jute producers were effective in increasing efficiencies in purchase operations.

The ingredients found in the cases of castor oil, cashew and steel were equally applicable here. The transactions in the B2B category involved an unbranded product between a convergent side in the form of the buyer and a divergent numerous, relatively
disorganized side in the form of sellers where the relationship between the sides was impersonal. The individual entities in the divergent side were smaller. Compensation for lack of infrastructure was inbuilt in the transaction process where direct communication from the village selling points was possible without having to negotiate difficult roads.

However in the case of forward linkages with foreign buyers there was no discernible increase in price realization. Although the product jute is unbranded, the divergent and numerous side in the form of foreign buyers was highly organized, had built up personal relations with the sellers over many years and the transaction did not serve to overcome infrastructure difficulties in Bangladesh. The individual entities in the divergent side were not necessarily smaller. This result is similar to the one in the case of cashew exports from India.

In the operation of jute enterprises in India and Bangladesh, the use of E-based applications has resulted in reduction of inventory by 4%-5%. This is similar to the benefits recorded by individual Indian jute mills, although no detailed quantification exercises appear to have been carried out either by the Indian or the Bangladesh mills.

8.5 Vehicles-India

In India the case study of Maruti covers the following broad B2B interfaces:

(a) Maruti and the numerous and diverse group of dealers and component suppliers who are linked by advanced Extranets, a Demand Planner and an Unified Messaging System to operate on real time basis round the clock, and
(b) Maruti and diverse groups such as suppliers of consumables, providers of civil works, freight forwarders, office material suppliers, raw material suppliers and others connected through E-Auction exercises.

In both these interfaces the ingredients identified earlier and found to be necessary for achieving success in efficiency improvements in price realizations and operations existed. Their presence accounted for the gains recorded.

Except raw materials in the form of steel, many of the components, consumables, civil works office supplies, freight originated from numerous, smaller and diverse groups of organizations. Their products and services were often be in the unbranded or less strongly branded category; their relationships with Maruti in (a) above were mostly official. At (b) above the relationships were impersonal.

Of the two sides involved Maruti was convergent highly organized whereas the supply side was divergent, smaller, numerous and relatively less organized. The element of compensating for lack of infrastructure existed in both groups of B2B transactions at (a) and (b). The Extranets, planner and messaging facility served to avoid physical movements over uncertain and inefficient infrastructure of roads, avoidable warehousing, avoidable physical appearances at auctions and submission of physical bids and bid bonds.

8.6 Paper

The case study of HNL showed that on the operational side of enterprises, a well implemented ERP package was effective for efficiency improvement and overall cost reduction. In addition to the improvement of order and discipline into the manufacturing process, the E-techniques could automatically provide real time information on customer
credits, inventory and stocks, the status of processing of each order and on movement of goods for deliveries.

Furthermore by fully integrating manufacturing with finance real time financial status of the enterprise was available for management decision making. The ERP enabled a part of the mundane jobs to be eliminated, which resulted in rationalization of manpower in all departments of the enterprise.

The departments where the system was found to have reduced the most manpower and thus achieved the highest direct savings on this account were the log yard, stores, purchase and contracting. These are departments that mostly interface with a divergent, group of numerous small enterprises, the majority of whom supply unbranded goods and services.

As in the case of Maruti where substantial savings were achieved in E-Auctions for purchases from such groups of enterprises, the HNL case further strengthens the conclusion that in India and Bangladesh one of the highest efficiency gains from the application of E-Techniques can be made from the B2B interface with numerous smaller enterprises.

As in the other cases studied, these enterprises did not have personal relations with HNL and were relatively less organized. In the case of HNL, however, because the ERP package was largely enterprise-centric, the element of compensation of difficulties associated with outside infrastructure was limited.

It may be in order to mention here that some of the employees handling the ERP powered operations felt that such systems tended to make their jobs mechanical and somewhat over simplified. This, it was felt, led to lowering of skill acquisition levels in the long
term for individual employees. Besides, skill development tended to get segregated into those who handled the system but had limited knowledge of hands on operations, and those who had hands on knowledge of operations but had limited knowledge of the system. This pattern of skill development has long term implications for organizations.

8.7 Vehicles-Bangladesh

The case of Nitol Motors indicated that on the service side the introduction and use of E-Commerce based systems had increased productivity by 100% in its vehicle service operations at Tongi, Gazipur and at the other satellite centres, decreased manpower at each centre and achieved greater overall levels of customer satisfaction. At the Corporate level Nitol Motors was able to meet market demand with an inventory of 300 numbers of TATA trucks instead of the 600 numbers that was required earlier.

In addition complete control was achieved over the physical delivery process of vehicles from India. This was another case of reduction of inventory, improvement in operational order and discipline, availability of real time information on demand, status of payments, delivery of goods and financial information for decision making.

The element of compensation for infrastructure based difficulties was there in the reduction of physical movements of personnel using inefficient transportation and roads and the avoidance of physical verification of the conditions of the trucks at the Benapole/Petrapole land border.

Except for the backward linkage with Telco for supplies of trucks, Nitol interacted mostly with smaller entities like truck owning companies, local suppliers and transporters. They were a divergent group of small organizations, which were relatively less organized. They had little personal relations with Nitol Motors and they often transacted unbranded
goods and services. E-Techniques were effective under these conditions as in the other cases studied earlier.

8.8 Overall findings

This study accepts that India and Bangladesh are at different stages of development in trade and industry and also at different stages of the use of E-Commerce based applications. As a result, many of the efficiency enhancing practices, which are considered standard in many enterprises in India, are relatively new in Bangladesh. It can be expected that as enterprises in Bangladesh develop further they will stand to gain from the Indian experience in this field and make more use of these applications.

However it is clear that whatever the stage of overall development, E-Commerce based applications increase efficiency and control in trading activities, commercial transactions, manufacturing operations and services. Such applications also partially compensate for the relative inefficiency of physical infrastructure in India and Bangladesh.

These applications are particularly effective in the B2B interface:

- between a convergent organized entity and a divergent group of numerous smaller relatively less organized entities,
- involving unbranded or less strongly branded goods and services, and
- where there are little or no personal relations between the two sides.

There are no negative effects of the use of these applications. Only in certain enterprise-centric cases such as the application of ERP in process industries can these applications lead towards an uneven pattern of skill development among employees, but even there the efficiency benefits tend to greatly outweigh this concern.
This set of conclusions has been verified in each of the cases studied and they successfully test the hypotheses that:

(a) The application of E-Commerce based applications will improve the overall efficiency levels of export, commercial and manufacturing activities in manufacturing and trading enterprises and will compensate to an extent for shortcomings of supportive infrastructure for such enterprises in India and Bangladesh.

(b) The levels of efficiency improvements will be more for unbranded products particularly in the B2B interface especially between the organized sector and the relatively less organized sectors comprising smaller enterprises (like farmers, dealers, brokers, small enterprises and small buyers). The B2B interface needs to be impersonal. The negative effects of the use of such E-Commerce based applications are minimal.