CHAPTER II
SURVEY OF LITERATURE

Mahadevan\(^1\) in his study generally divided the electronic market space into three: portals, market makers and product/service providers. However no particular effort was devoted to relating these with prevailing B2B market structures. There were so many limitations in the existing taxonomies. Most of the study did not address the requirements of market users, and they were mostly descriptive in nature.

There was a greater need for organisations to know how to benefit from a B2B market place offering multiple market mechanisms. It was practical to enumerate the alternative market structures in operation today and develop a robust taxonomy to classify them. The classification scheme proposed by Mahadevan seeked to overcome the above limitations in several ways. The scheme was developed based on a 200 B2B sites in operation. There were several types of markets structures operating in the B2B electronic market with each site typically operated multiple market structures. This provided multiple reverse streams and ensured viable operation of these sites.

These market structures could be reduced to a set of twelve dominant market structures which fall under three distinctive categories: collaborative mechanisms, quasi-market mechanisms and neutral market mechanisms. The B2B sites invariably offered dramatically increased reach reduction in transaction cost, and deep customisation capabilities.

Collaborative mechanisms consisted of market structures that enabled the market participants to exploit electronic integration. These market structures increased the

collaboration capability of the network members and improve the speed of business processes. They also helped to eliminate duplication of resources, costs, and improve responsiveness of the supply chain.

In quasi-market mechanisms, one or a small group of either the buyers or the sellers would initiate the market place, host and monitor, enroll market participants and moderate the market behavior if required. Based on the rules governing the market place, the ownership and market participant initiative, the market structures had an inherent bias towards one of the market participant, namely the buyer or the supplier.

A large number of both buyers and suppliers participated in neutral market which include exchanges, catalogue aggregators and online community. These markets were neutral and well understood. Electronic market reduced the customer's cost of obtaining information about prices and product offerings, reduced market transaction costs by providing test-effective means to access market information and process transactions.

The study of B2B sites indicated that dramatically increased reach, reduced transaction costs and deep customisation capabilities were the three distinctive factors of operational features of B2B sites. In addition to the above value propositions B2B sites had deep customisation the feature of pre-configuring the virtual ambience for the market participants to deal with the organisation. It also allowed an organisation to built a product from an assortment of basic components available in module. These B2B sites enabled business customers to interact with the organisation through a highly customised environment for all pre and post-order transactions and after-sales support.

The dramatically increased reach ensures high liquidity, reduction in transaction cost translates into new cost-reduction opportunities, deep customisation capabilities
leading to improved operational velocity because of reduced lead-time. This study focussed on understanding alternative appropriate market structure. The choice of factors classified the market structure mainly based on linking the operational features and key value propositions of B2B sites. The study identified fragmentation, asset specificity, complexity of product assortment and complexity of value assessment as the factors for classification. The key motivation behind the degree of fragmentation was the degree of control or influence the buyers or the suppliers could exert on the market place. Asset specificity was a function of the costs of setting up a relationship between two market participants in order to manage business transactions in a cost-effective manner. Complexity of product description related to the amount of information a buyer needs to understand the functional and technical specifications of the product or service. Complexities of value assessment referred to the amount of information needed to estimate accurately the worth of an item and to either arrive at a price or select items offered at a price. The complexity arised because of several factors like price setting mechanism, the amount of information and pre-assessment required before making a choice and information asymmetry problems.

The frame work developed by Mahadevan suggested that online communities could play an important role in improving the market liquidity in situations involving very complex product-description and value-assessment characteristics. The frame work also suggested that consort market place were relevant only in the case of items with low asset specificity. Product characteristics were fairly complex and value assessment was difficult. But the framework dispels the notion that every organisation could find only
one or two market structures useful. Organisations had to strategically draw blueprint on how they would derive value by exploiting all these market structures.

Pauline Ratnasingam and Dien D. Pham\(^2\) in their case on trading partner trust in B2B e-commerce examined the importance of inter-organisational trust in Business to Business e-commerce. Participation by examining Cisco's relationships with a trading partner in the supply chain via Cisco connection online from a behavioral perspective. The study also aimed to provide an awareness and importance of inter-organisational trust in B2B relationships.

This case study was originated by making initial telephone calls to key partner representatives in the supply chain of Cisco between Cisco New Zealand and Compaq New Zealand. The Compaq NewZealand was selected because of location convenience for the first author, global aspect of the trust relationship and the large volume between Cisco and Compaq New Zealand. The telephone conversations were followed by e-mail, including an attached file describing the purpose of the study.

Cisco New Zealand claimed that 70 to 80 percent of Cisco's business involves E-commerce. Chief Information Officer (CIO) Slovak estimated that as of January 2001, E-commerce based B2B at Cisco represented 92 percent of total revenue, at about $25 billion annually. Cisco's statistics showed that up to 70 percent of all inquiries using Cisco Connection Online (CCO) resulted in users finding an answer. Cisco also reported that it saves up to $400 million in costs per year from online ordering. The error rate for Cisco New Zealand orders reduced to less than 15 percent in 2000 from 80 percent in 1997. The real-time online tracking information to that trading partners contributed to

additional savings in time and costs. These benefits further contributed to an increase in inter-organisational trust among Cisco and its trading partners.

At the beginning of the partnership, Cisco participants indicated that the competence and trust of their company staff was low. The B2B partnership begun when Cisco provides Compaq staff with necessary training. Competence and trust improved in communication and cooperation between Compaq staff and Cisco’s IT call.

Compaq staff had seen the economic benefit through CCO from reduced operations, transaction and administrative costs. Compaq staff was able to say that trading with Cisco was better than trading with most of Cisco’s competitors. With adequate training, 80 percent of order configuration errors were discovered by CCO’s automated error checking mechanism, thus saving time and costs in re-sending the order. CCO also reduced the costs of sales, distribution, marketing and administration. The improved accuracy of information exchanged, faster responses to orders and reduced lead time.

There were many reasons for the presence of a strong predictability trust between Compaq New Zealand and Cisco New Zealand. The first reason was that, the consistent behaviors from Compaq New Zealand staff in their ability to use CCO in many complex tasks gave an indicators of their performance capability and confidence. Second reason was that for strategic planning purposes by sharing the inventory and production information including yet to be announced new product information many weeks or months in advance. And the third reason was Cisco’s business and technical reputation.

By engaging in long-term trading partner relationship with Cisco, Compaq New Zealand was able to control the quality of service and products and maintain its trust with
Cisco. Communicating with partners in B2B transactions were not the issue here, but honoring trading agreements with trading partners regarding roles and responsibilities, especially in the area of handling classified trading partners information.

The findings showed that E-commerce success depend on both efficient technologies and well developed partnerships with mutual goals and trust. For most organisations, the biggest challenge was not only to consider an E-Business solution but also how to best integrate Internet technology to develop trust and sustain competitive advantage across national, cultural and social barriers. In addition to this effective trust and security based mechanisms were achieved with a high degree of confidentiality, integrity, authenticity, nonrepudiation and availability of B2B transactions. By automating many of the routine and administrative sales order and customer service functions, trading partner employees were able to improve their productivity and focused on more challenging and forwarding interactions. Cisco New Zealand also had competent employees with soft capabilities in relationships such as a company's financial strength, a partner's honesty, and reliable information, having a call centre when problems arise. Cisco New Zealand shared its commitment with strategic alliances to deliver solutions and services to its trading partners. They planned B2B collaboration with commitment from top management.

Qizhi and Dai and Robert I. Kauffman described the electronic procurement and electronic catalogue management systems used by corporate world to move the purchase and selling processes online. Although there were success stories about the application of internet technologies B2B e-commerce had been hindered by many unanticipated

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technical, organisational economic and legal challenges that diminish value. The study on the leading perspectives on the key issues in B2B e-commerce was conducted by interviewing one-dozen people, including university based senior faculty, noted authors, research centre directors, E-commerce journal editors and visionary senior managers whose firms deal with the leading-edge issues in B2B e-commerce on a daily basis. The data was collected by administering three to five questions during the 15 to 20 telephonic or face to face interview. The study covered regional characteristics in the deployment and adoption of B2B e-commerce. Number of possible developments trends and potential issues and the range of B2B e-commerce solutions that could be applied in various context.

There were only a few number of business models specific to B2B e-commerce. The first one virtual market place, next was virtual alliance and virtual community business model. B2B e-commerce had been in existence from the first implementation of inter-organisational systems. Some B2B exchanges emphasised the need for liquidity. But liquidity alone ensured success because inter firm coordination lay at the heart. Potentially high levels of value could be created through shared infrastructure model. Vertical collaboration resulted return on investment from rapid communication, whereas horizontal collaboration, the companies were working on some basic problems. The problems that the firms were sharing the hidden cost and the asset repositioning cost.

There were so many road blocks to B2B e-commerce technology adoption. The progress of technology, the misalignment of E-commerce solution with existing industry structures were some factors. Many solutions were developed by nascent startups that marketed into established enterprises. B2B e-commerce took Information Technology out
of the back office and put it into the front office. Adoption of B2B not only included Information Technology within an enterprise, but also firms have to think about adoption of IT solutions that involved multiple enterprise. In addition to the above reason the system need trust, market preparedness and single points of contact for customers from multi-business unit firms.

The value of B2B was recognised in the ways of business operation. B2B e-markets enabled firms to find new suppliers, provide external IT services and valuable IT skills and expertise that would drive the adoption of B2B e-commerce. Firms believed they were increasing return on investment by taking cost out of the distribution channel. Both the retailers and suppliers were able to reduce inventory costs through just-in-time delivery information. The predictability and reliability of the collaborative B2B networks had significant value.

The strategic planning for B2B e-commerce was the innovation value and the financial return that the technology provided through the customer interface. What this type of exchanges could do is to make sure that they were targeting a product or service and a market to which an exchange make sense. And it was better to find a market value, that was not already a successful exchange. The main function of such exchange was not limited to the transparent transaction prices but timely delivery, quality and supplier reliability. For a successful implementation of B2B projects, it was very adamant about the not letting the scope expand beyond the agreed upon parameters because that will destroy the project.

By considering the regional and global aspects, B2B software solution vendors appeared to be preferred by firms in European countries. In Hong Kong the business
establishments were very small. They had low levels of IT sophistication and a small amount of available resources for implementing B2B e-commerce. The level of systematisations of information and knowledge was low, the companies had less trust in employees and its business partners, which hindered the use of IT. Even in this situation there were successful story of Hibaba.com, lifung.com.

The intermediary role of B2B e-markets for sharing information among the multiple players in a common business process was the future trend. There was also a definite trend towards collaborative types of transaction and supply-chain coordination arrangements in B2B e-commerce. In addition to the collaborating around delivery of the product, the suppliers and carriers in future might be co-loading products through shared warehouse space.

Qizhi Dai and Robert J. Kauffanan⁴ analysed the role of electronic markets to facilitate product and information exchange and support business transactions initial contacts to negotiation to settlement. These electronic markets played the role of digital intermediaries to bring the buyers and sellers together. The electronic market hypothesis formulated by Malove, Yates and Benjamin predicted that to reduce the coordination costs between firms involved in supplier selection, price discovery, delivery scheduling and other activities associated with business transactions, enabled buyers to compare purchase alternatives at lower season costs and to transact with business partners more efficiently.

When a firms consider to adopt any two technology the compatibility with the order technology would determine the success of new technology. This compatibility

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could be achieved through standardisation and adaptation. But the point here was to find out how technology could be fully exploited to enable innovations in the ways firms did business online. Here the B2B e-market had to integrate different players with their market places standardised data formats and business processes and to provide IT servicing services which would affected the size, efficiency and effectiveness by the trading network. Ultimately all these processes determined the value to the firms.

This study consisted of compiling a list of B2B electronic markets from trade journal publications, and an on-line portal www.nmm.com. The information posted in the web and articles were then studied. During the data collection process, the content delivery of products and services were continually changing. The study conceptualised the basic market functions on aggregation matching and facilitation. The product offered were mostly aggregated by electronic cataloging. When market was fragmented, demand has low predictability and purchases were made on infrequent basis. It was better to do public e-cataloging. But when there was a long-term interaction for company and supplier relationship, private cataloging retain the preferred one.

The second major function matching supply and demand enabled the firm to negotiate more efficiently when uncertain prices and product demand information were available. It could happened through public and private negation bidding mechanisms. The public bidding may be beneficial for buyers who were seeking hard to find products. It created great reach for seller to potential buyers. But in private negotiation mechanism firms benefitted by being able to maintain the privacy while negotiating electronically with various partners. Here the buyers usually identified qualified suppliers based on their previous purchasing experiences.
The third major functions transaction facilitation like payment delivery and other kinds of assistance could be provided by specialised institutions. The independent on-line logistical services unlike financial services targeted shippers and transport carriers as customers.

B2B e-markets used three kinds of mechanisms. First it provided tools and reports that leverage the large quantity of data to analyse procurement costs and trends. In addition to this industry specific knowledge would add value to on-line markets. The knowledge and expertise that helped purchase decisions from traditional intermediaries could also be made available through partnering and joint ventures.

The Information Technology reduced costs of coordinating interdependent tasks among multiple players and encouraged the use of coordination intensive structures. In addition to streamlining workflow, the collaborative project management emphasised the use of internet technologies for informing multiple parties whose shared resources in a task or process. The IT also improved the efficiency of supply claim by synchronising their planning and scheduling activities. All these functions were built upon technology infrastructure enabled by the Internet. B2B electronic markets turned their value proposition by playing the role of technology adapters.

The above exploratory study found that the private aggregating and, matching networks were not predicted by the theory of E-markets. The alliances between market makers, specialised service providers and the emergence of new digital intermediaries resulted because of the need for streamlined on line transaction settlement and logistics service. These E-markets could differentiate only by providing valuable knowledge and expertise to customers based on the structure of the industry and the complexity of the
product B2B markets would foster a higher level of inter-organisational integration by providing collaboration platforms. The network externalities associated in B2B e-market would make it increasingly attractive for firms to consolidate their purchases of direct and indirect products. Overall, the present analysis indicated that adoption of B2B e-market ultimately would be of strategic significance to all market participants in the digital economy.

Chandrasekhar Subrahmanian and Michael J. Shaw5 said that transaction cost savings and competitive sourcing opportunities were the potential benefits of B2B procurement. They presented a framework for determining the value of web-based systems. Many organisations spent 50 to 60 percent of their revenue in the procurement of goods and services. It involved both direct and indirect purchases. The framework identified process, organisation of business units and extended enterprise which affect the value of web-based procurement.

The framework described four major categories of B2B operation like search, order processing, monitoring and control, and coordination. The search cost could be reduced using web-based system which used multiple methods to find right product and locate the appropriate seller. The web-based system reduced the transaction cycle time, errors and processing costs. The centralised control with wide range of items through web-based system, the users could identify the most cost-effective supplier and place their orders. The web-based system provided a real-time information flow and thereby the cost of coordination with suppliers and users was less which led to shorter order cycle time.

The visible performance impacts was the lower total procurement cost. The reduction in transaction cycle reduced the labor time and labor cost of the transaction cost. The quality of procurement process could be measured through the proportion of B2B orders rejected or returned by the user. Through the access to required information with minimum effort, faster resolution of complaints, and the use of the system interface were the ways to improve the user satisfaction in the system. A responsive system reduced the time to help search the internal and external locations in the best way.

The realised value of web-based system was based on several conditions of the organisation. This contingencies vary from organisation to organisation and even from unit to unit. If each transaction undergo supplier search, approvals, processing, and ordering, the transaction cost is high. But when the demand was regular and product specifications did not change over time, organisations could reduce transaction cost through structured procurement system. But it was difficult to set up meaningful replenishment product for unstructured procurement. More time was spent in search, input and processing in the form of labor. The higher human intervention increased the error, the staff time was spent in error resolution. So the unstructured web-based procurement resulted in greater value than structured procurement. With the complexity and the transaction volume of the process increased the value of web-based procurement system. But usually larger business unit realised higher value even with similar distributions of different types of B2B processes. The higher value could be derived only when the dominant type of procurement process was web-enabled with greater increase in centralisation.
It was very clear that the web-based procurement system had greater integration with closely related enterprise, systems yield higher value. The potential value could not be judged unless both users and suppliers participated in the transactions. The characteristics of the concerned industry also played a major role here.

The empirical study described the implementation of B2B e-commerce was not simple yes or no decision but involved around the differences in value system and the cost of implementation. The process type and complexity played a critical role in identifying which purchases to be web-enabled.

Mahadevan developed framework for practicing managers to understand the notion of a business model in an internet economy. This had been developed based on E-commerce where the organisations that conduct commercial transactions with their business partners and buyers over the net. As per the emerging market structure, the internet economy divided the market space into portals, market makers, and product/service providers. The portals emerged as the most attractive points influenced the channel traffic into websites and intermediaries. The market makers played a similar role as that of a portal but participated in a variety of ways to facilitate the business transactions between the buyer and the supplier. The product/service provided dealt directly with the customer. This made extensive customisation of the information system and business processes. These structures revealed a key constituent in internet business, they existed in both B2B and B2C categories and a high level of overlap and interdependency among the players. In addition to this, they had different approaches to the value to the business and the manner in which they organise their revenue.

This business model was a blend of value stream, revenue stream and logistical stream. Buyers perceived value out of reduced product search cost and transaction cost. And for suppliers it was reduced customer search costs, product promotion cost, business transaction cost, and lead time for business transactions. These benefits were substantial in B2B segment. The value streams were virtual communities, reduction in search cost, gainful exploitation of information assymmetry and market making process.

The revenue streams were increased margin, online seller communities, advertising and variable pricing strategies. The logistical streams were disintermediation, infomediaition, and meta-mediation. The disintermediation shrink the supply chain which ultimately reduced the transaction cost and improved responsiveness to customer requirements. The infomediaition involved storage and dissemination of meta-information. The meta-mediation aggregated vendors, products and add services for facilitating transactions.

Based on the above alternatives, the author arrived at an appropriate business model. The author choose the right mix alternatives for a business model. The first factor which affected was the role in the market structure followed by physical attribute of the goods traded and the personal involvement required in buying/selling process.

Sunil Chopra, Darren Dougan and Gareth Taylor said that the value of B2B e-commerce vary depending upon the supply chain strategy and competitive environment. Successful companies extracted maximum value through their E-commerce initiatives. The three distinct categories extracted value through B2B e-commerce were reduced transaction charges, improved market efficiencies and enhanced supply chain benefits.

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The transaction charges were costs associated with handling proposals and quotations, processing orders, staffing the procurement function and operating the call centres. The fare and phone communication required high staffing levels and high error rates. In B2B e-commerce the visibility and collaboration of the supply chain created value. Wal-Mart and Procter Gamble (P&G) increased visibility and realised full value when they used point of sale-data along with capacity information at P&G, to decide the best timing for promotions and resulting production plans.

The E-commerce reduced transaction charge by giving the customers the ability to search for products, identified product availability and pricing, identified substitutes, perform credit check and financing, place and track the order until delivery and timing process payment. But the magnitude of savings through E-commerce would vary to company to company. When there were limited buyer/seller qualification, fragmented market and large number buyers/sellers, online B2B e-commerce provided significant value. B2B e-commerce also provided significant value by matching supply surplus and market demand in industries where capacity was expensive and mismatches of surplus supply and unmet demand were common.

A road map for B2B e-commerce implementations was based on the potential value for the company, the key success factors to extract value and the current market options. The potential value could be identified from reduced transaction charges, market efficiency through reduced prices or better match of supply and demand. The success factors could be classified as supply chain strategy, IT requirements and organisational requirements. The supply chain strategy defined the existing supply chain relationships and determined the efficiency and responsiveness in the market. The Information
Technology requirements defined the technical efficiency to transfer its business processes to an Internet based system. The IT requirements forced on simplifying the task of order placement, fulfillment and tracking by integrating systems for pricing, product availability and ordering across different channels. Organisational requirements defined the structure depending on the type of company to extract value.

The market option could be the developments software, legacy systems and the companies participation either in the public market places or in the private market places. The legacy system which lacks standardisation properly implemented provided close integration with existing supply chain partners. The off-the-shelf solutions which provided most standardised capabilities were easier to implement but come with pre-existing processes. It was better to start with a legacy system and switchover to off-the-shelf solutions. The public market places lowered the individual cost for all participants. It was set up by third parties or consortium companies. Whereas private market places were set up by large companies. It focussed on reduction in transaction charges, matching surplus capacity with demands and gaining supply chain benefits. The effectiveness depends on volume of transactions. The supply chain benefits were greatest in complex transportation chains, long delivery lead time, low inventory turns, low supplier visibility, little collaboration, or short product life cycles. So based on this a company designed E-commerce strategy by carefully developing the value provided.

Jinwoo Kim\(^8\) said that successful Internet stores must entice customers for the initial visit which gradually increased the customer loyalty. Customer loyalty was created based on their previous experiences as well as future expectations. An Internet store value

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was determined by the number of loyal customers. These loyal customers made hefty purchases with sites proven reliable. They were willing to share their opinion with others which had a tremendous impact. So most Internet stores invested high amount of money and efforts for providing various functions and services inorder to secure loyal customers. This looks into the important factors that affected internet shopping. Jinwoo Kim proposed a multi phased model of Internet customer loyalty. The multiphased model was validated through a web-based survey administered to the customers of various internet stores. A multiphased model of customer loyalty suggested nine various factors selected include “trust” and “transaction cost”. Three variables that hypothesised as important precursors of trust were comprehensive information, shared value and communication. Multi-phased model of customer loyalty hypothesised three variables related to transaction cost were uncertainty, number of competitors and Internet store specificity. The survey conducted among the respondents were 80 percent male, 20 percent female. Out of the 289 people responded 196.68 percent were in their twenties followed by 77.26 percent in their thirties, 12.4 percent in their twenties followed by 4.25 were younger than twenties.

The first three questions aimed at the involvement level by asking people to have product in their mind. Cluster analysis ensured that the members of each cluster were as different as possible: 56 percent among the 289 respondents were classified as the high involvement group (HIGH) while the rest 44 percent were classified as the low involvement group (LOW) and the survey resulted that among the three variables that were hypothesised to be related to trust, all of them were found to have significant relations with trust. The three variables that were expected to be related to transaction
costs, only two of them were found to have significant relations with transaction costs, uncertainty and specificity. In addition, trust was found to be negatively related to the transaction cost. Among the two variables that were hypothesised to be related to customer loyalty, only trust was found to have a strong impact on customer loyalty. Therefore more comprehensive information, higher shared value, and diverse communication tools led to a higher level of trust, which in turn induced a higher level of customer loyalty. Two sub LISREL model for the low and high involvement groups indicated that there were some underlying differences between the constructs depending on the level of involvement.

The difference between the two models could be classified into three categories. First, only one path belonged to the first category in which the relative importance was not different at all. The second category included two sets of paths, where the path was significant for one group but not for the other group and the third category included six set of paths. Where both paths from the two groups were significance was different from each other. This means in order to increase customer loyalty, providing comprehensive information and decreasing uncertainty were more effective for the high involvement group than for the low involvement group. The path from shared value to trust, from the number of malls to transaction cost, from the trust to customer loyalty, the more effective was to increase customer loyalty for the LOW group than for the HIGH group. The difference could be explained by the fact that for products of low involvement consumers generally tend to process peripheral information regarding the perceived expertise and emotional appeal of the message of the product. Whereas in high involvement situations, consumers were less affected by such subjective impressions as trust and shared value.
But place more value as the presentation of substantial information that helped them make their decisions. There were so many limitation for this study. The model did not conclude quality of the service in the Internet store and quality of the product purchased through Internet store. The survey was limited to Korean internet stores. The comparison by the LOW involved and HIGH involved group were based an comparison of two different structural models in which the paths were not constrained to be equal. And finally the study focused only on the level of product involvement.

Jaiswal and Anjali Sharma⁹ said that Globalisation and Liberalisation of Indian economy force the Indian enterprises to change the fundamentals business models due to emergence of Information Technology based business practices. Companies need to transform their internal businesses with deployment of ERP systems which was considered to the backbone of E-Business. Most of the large companies in India were in the process of putting ERP into their enterprise and many of them were struggling or even getting stuck due to its implication of change management. Hindustan Lever was a unique case study of how an ERP package could help in optimising the resources across supply chain of an organisation. Hindustan Lever’s E-commerce was an initiative, that used the ERP infrastructure to extend the company through the web to their partners, suppliers, vendors and customers. The system handled order processing, planning, purchasing, invoicing and financial task throughout the enterprise. Distribution Resource Planning (DRP) was accomplished through a rule-based, finite availability plan that took Hindustan Lever’s many manufacturing and transportation constraints into account.

Hindustan Lever took the initial step towards workflow of organisation of the supply chain. It handled exceptions involving dispatching, widely variables truck capacities, lead time variances and changes in both demanding and sourcing. There were also other improvements in the supply chain management, which minimised the inventory levels. In Hindustan Lever’s extended supply chain, the supplier was able to know the companies production plans and plan delivery action. With the forecasting process in place, Hindustan Lever was in a position to aggregate daily demand. The factories interact with the suppliers directly for delivery, scheduling and quality issues. Hindustan Lever was in the process of implementing VIM software at 750 of its larger stockists (50% sales) and many of major suppliers of raw material, to improve visibility, information flow and integrate the entire supply chain. Hindustan Lever also connected some of its large third party manufactures through VSAT. Hindustan Lever connected to some of its regular suppliers through VAN based EDI. This provided HL the mailbox services for passing purchase orders and invoices in a batch mode. Hindustan Lever had an extranet covering its key stockists and retailers to optimise the supply chain right up to the front end. Similarly an extranet had also being created covering the suppliers, factories and the purchases with the aim of achieving real-time vendor management inventory. The web gave any corporate the reach, but important was the capability to deliver the product to the customer. Hindustan Lever had a great advantage of its large network. HL had put in place formidable network connecting all of its suppliers and now started a project wiring up its 7500 distributors. The next step would be connecting it top retailers and using the internet as a platform for transactions.
E-Banking initiatives also being piloted to enable paperless financial settlements. Hindustan Lever had a stock replenishment cycle time of two weeks earlier. After ERP implementation it came down by three and a half days. VMI had introduced in order to overcome the inventory problem in addition to implementation of ERP. After this Hindustan Lever kept one day inventory and buffer depot instead of four to five days. Suppliers inventory levels were at three days, down from seven days earlier. HL had a negative working capital in 2001. Despite the reduction in inventory level simultaneously improved customer service. The FMCG leader Hindustan Lever strengthened its distribution networks by ERP, SCM and now CRM. This reduced lead time and minimised inventory. Due to heavy competition in all of its division, Hindustan Lever launched project millennium to retrieve the situation in year 2000. HL consolidated its operations reduced its brands from 130 to 30 brands. For its E-Retailing venture, Hindustan Lever outsourced distribution and delivery of material through Blue Dart. This completed the business cycle of E-commerce. Hindustan Lever tied up with SBI to offer its services through SBI’s ATM centres. After the E-commerce initiative caught up in a big way, the company may use the net for order procurement and use its physical distribution network for order fulfillment.

Abdul Rahim Abu Bakar\textsuperscript{10} conducted a study to identify the drivers or motivation for companies to adopt E-commerce and determine the benefits sorted by the companies adopting E-commerce in Malasia. Adoption of E-commerce based on Internet was surely helped SME’s (Small and Medium Enterprises) with a low cost gateway to global markets by helping to overcome many of the barriers to Internationalisation commonly

\footnotesize{\textsuperscript{10}\textsuperscript{}Abdul Rahim Abu Bakar, Saliiza Mohd. Salleh and Dr. Zolkifli Husin, "E-Commerce Adoption Among Companies in Malasia" International Conference on E-commerce, Multimedia University, Kualalumpur, Malasia, November 21 to 23. 2000.}
experienced by small companies. So that SME reduced their transaction cost, improved communication with actual potential customers, suppliers and partners abroad, provided latest R&D accessibility, generated information on market trends and used as a powerful marketing tools. The drivers of adoption of E-commerce were different based on the market it operate. These factors vary depend on the B2B E-commerce and B2C e-commerce. B2C e-commerce enjoyed eased and reduced cost of access, convenience and mass customisation. B2B e-commerce competitive pressures drove the adoption of E-commerce. Besides these factors some key behavioral and structural factors such as the perception of the opportunities afforded by E-commerce and their relevants and applicability to the business and the potential captured these benefits, while overcoming the obstacles to adoption, both in general and those that were specific to companies. Market feasibility in particular, awareness of potential benefitted companies affected the adoption of E-commerce. Organisation for Economic Co-operation Development (OECD) study showed that E-commerce diffusion, the heterogeneity of companies in terms of market structure, aversion to risk, location, sector, organisational structure, innovation, climate affected the scale and rate of implementation of E-commerce and in fact it’s appropriateness.

Data was collected for the study through in-depth personal interview and content analysis of the respective website. The population frame of the research was based on the Malasian E-commerce hub located at ‘http:www.ecom.my’ under the Malasian initiative of National Electronic Commerce Council (NECC). The total number of organisation listed in the directory for adopting E-commerce was 31. These companies were later reclassified based on their market focus and transaction activities of each respective
website. The in-depth interview session was participated by 5 companies. The participants were either IT managers, General Managers or designated key personnel of the company. There were two factors such as internal and external which influenced the E-commerce adoption. Increasing customers sophistication, expanding international competition, blossoming delivery channels, market liberalisation, Government IT agenda were the external factors. Whereas strong commitment from management, to be market leader, customer suggestions, to integrate existing services and to build competitive advantages constituted the internal factors for adopting E-commerce in Malaysia. There were benefits like access to new market, instant gratification flexibility, 24 hours seven days a week operation, improved customer relations and a new way of marketing through E-commerce implementation. E-mail facilities in E-commerce did wonders in customer relationship. Thus it was inevitable that the global forces of E-commerce would certainly affected the Malaysian business and economic environment. Malasian companies were in the right track of digital economy.

Yuserie Zainuddin\(^{11}\) conducted a study on E-commerce initiativeness for manufacturing companies operated in free industrial zone in the state of Kedah and Penang keeping two problems in the mind. Firstly to investigate whether Malasian companies were lagging in adopting E-commerce strategy compare to American, European and East Asian companies. Secondly to study the major factors driving decision making to adopt E-commerce strategy. The Internet was already changing the way that many companies conducted their business. This change influenced the B2B e-

commerce on the Internet greatly and became more of a routine part of commerce. Even smaller companies realised that they could conduct online business at lower cost either by replacing other network or by using Internet. Digital information, computerising business practices and the Internet resulted a significant energy to enable E-commerce.

As per the study conducted by Anderson consulting (1999), there were four forces which enabled E-commerce namely business value, technology infrastructure, customer value and co-operative regulatory environment. Anderson consulting predicted the electronic economy would overtake the traditional industrial economy by year 2003. It was about one-fourth less costly to perform direct marketing through the net than through the conventional channels (Verity and Carey, 1994). This fact became critical in the face of shortening technology and product lifecycle and increasing technological complexity in the globalisation age. The interactive nature of internet offered unprecedented opportunities to tailor communication precisely to individual customers allowing them to request as much information as desired. Banks, consumer packaged goods companies, insurance providers, educational institutions, manufacturing firms, and health care providers were cutting the value chain and enhancing business relationship by utilising the Internet and its offshoots, intranet and extranets.

B2B e-commerce speed up the delivery of product and services to the market and save millions of dollars in inventory, and distribution cost. Automation of the conventional paper based procurement of maintenance suppliers, office supplies, equipments, services and the like, companies realised substantial cost savings. Considering the investment in obtaining a new customer, it was essential to maintain a long term relationship with that customer resulted repeated purchase. This relationship
was necessary foundation for profitability in an industry. B2B electronic relationship, electronic collaboration which enhanced the overall customer experience. There was a great promise for lot of companies to jump start into E-commerce like amazon.com and Cisco.

E-commerce business model which emphasised speed efficiency and customer relationship online competitiveness and value chain management became driving factors in today’s competitive market place. But organisation need to have an appropriate culture and setting to adopt E-commerce. This study covered the manufacturing firms located in free industrial zone in the state of Penang and Kedah of Malaysia. The sample unit to have internet connectivity and other IT infrastructure setup with exposure to internet transaction. Judgemental sampling method was used in the sampling design. Data was collected through personal delivery and mail with self addressed stamped envelop administered by a complete questionnaire. Respondents were either the IT vendor or IS manager. The questionnaire was subdivided into several sections out of which section A consisted of general information, section B reveals IT infrastructure setup and section C covers online competitiveness, customer relationship management, value chain management measured on a six point likert scale. Out of 220 questionnaires distributed 115 were collected, only 85 were used for the study. The response rate was approximately 52 percent. While the overall response rate was about 39 percent. There were five levels of E-commerce readiness being measured, 47.1 percent of the responding companies were already using E-commerce to perform business transaction, 10.6 percent planned to start E-commerce in the next six months, 14.1 percent planned to implement E-commerce between 6 to 12 months 20 may adopt E-commerce in more than 12 months.
while 8.2 percent or 7 percent companies had no plan in place for E-commerce. But online competitiveness, customer relationship and value chain management were high, which influenced strongly E-commerce readiness. The test of significance indicated that equity holding was also influenced E-commerce initiative. But US based companies were much more prepared for E-commerce. The study found that online competitiveness was ranked most important factor for E-commerce initiative. Eventhough the companies studied in Malasia were up to date in IT deployment they were lagging in E-commerce adoption compared to foreign companies by par with European and Asian companies.

Sherif Kamel conducted a research in Egypt covering the implementation of E-supply chain management. The research solicited the input of 200 individuals with a remarkable effective response rate exceeding 95 percent. The result showed that 67 percent of respondents access the Internet for up to 3 hours per day, 39 percent up to 10 hours a day and 5 percent up to 15 hours a day. There were a correlation between the size of the organisation and the number of employees whom have accessed to the internet based on the fact that smaller organisations could benefitted more from the implications of the use of the Internet on their business process. As for the potential goods and services to be traded on the Internet the majority of the respondents focussed on CDs, books, food, pharmaceuticals, flowers, hotel reservations and home appliances. Egyptian community did not used credit card in their every day activities and there were only 400,000 credit card holders in 2001. However Egyptian Government was just about to announce that the first online transaction through an Egyptian bank, which would be a

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major boost to the newly planned E-supply chain management system to be installed in Lapoire.

The newly proposed system called "e-Lapoire" was mainly affected by two factors. Firstly the company was divided into two Lapoire pastry production for the production and transportation phase and Lapoire Touristy Enterprises for the sales and marketing of various products. Secondly, the opening of a new large factory to replace the four factories with the installation of the latest technologies tools that support the new phase the company was about to penetrate. The new model was based around the customer where both marketing and sales identified consumer needs and channel them to production which delivered it back to the consumer through finished products. So the new system implied a pull strategy with respect to consumer needs.

According to the new cycle, the marketing department gave the production order of each shop to the production manager and both the sales transport departments. The production manager would in turn order the raw material required. It was important to note that each production order had its own raw material order to be able to make it easier for the costing department to control the amount of raw materials and the ingredients of each other. An intranet was established connecting all departments, the factory and store together enabled a full automation of data flow, meaning that data would be transferred electronically using EDI. All internal interactions conducted using electronic posting and electronic mail exchange, included the purchase department which would send quotations with all agreed upon details to the financial dept.

When the supplier delivered the orders to the stores, each store would enter all the details of the received goods into an electronic form to be sent automatically to both
financial and costing departments. Based on the invoices issued and sent electronically to the financial department suppliers received their money. The financial department would check the invoice on the computer system with all required data sent earlier from the purchasing department, then it would proceed with payment to various suppliers. Payment could be directly transformed to the suppliers bank accounts or paid by checks making it much easier for both the financial department and various suppliers. All these transactions would be recorded directly on point of sale program and sent at the end of every shift to the sale, marketing and financial department in the head office. Then the financial department revised the point of sale files with the amount of money deposited in the bank from each shop, as to control the account of sales versus revenues. The sale and marketing dept would use the information on the point of sales files for more analysis and predication of the customers' attitude. After studying the e-supply chain management system in Lapoire, it was clear that e-supply chain management was a vehicle that helped both consumers and producer. Hence realised more consumers satisfaction and business development and growth.

Sushila Madan\textsuperscript{13} pointed out that the Security issues were critical for the long term success of E-Business. For this organisations established suitable security risk management process over last few years. It had been recognised by various security communities that a threat – based approach was not the post desirable approach. The joint security commission recognised that security decisions had been hard on risk avoidance. Any information as security risk management process should effective controls (Green stein Feiman 2000). For controls to be effective, they should be

abundant, consistent, clearly written policies, supportive of valid organizations learning, and two-way channel.

A risk-based security paradigm should not focus on risk elimination or risk avoidance but should provide a sound and logical methodology, consistent with the system. It was in this way that security risk could be managed. Once the risk was assessed and ranked by priority, they could be reduced in an E-Business system. Good risk management techniques needed to address the strategic needs of business enterprise, and these needs were constantly changing and evolving. A security survey was conducted on security risk management practices of E-Business in Indian organizations through a detailed questionnaire, which was completed and renamed by over 100 organizations. A similar study was conducted by KPMG on information risk management practices in Indian organizations in 1999. The report revealed that there was growing need for reliable and dependable systems. At the same time, the volume and complexity of information was increasing the risk exponentially.

The objective of this survey was to assess the security risk management awareness of these organizations and the strategies being adopted for risk management and the security environment being implemented in the E-commerce system. The sample of the responded companies belonged to different size groups in terms of their annual turnover. Almost two-thirds of them had an annual turnover of more than Rs.5 crores. The survey covered companies in which 38 percent were from internet and related services, 29 percent from IT (non-net) software/hardware, 9 percent from banking and finance, 11 percent from manufacturing field and 13 percent were from other fields. The responses showed that 85 percent of the organizations had a formal security policy
document to assist them in implementing information security in their organisation. This explained the awareness and concern of these companies regarding the security issues in E-Business of the organisations. With a formal security policy 46 percent had no separate policy but integrated with IT infrastructure security policy, whereas 23 percent had a separate security policy statement moreover 31 percent had no such policy statements in written form. This indicated that they were not able to place enough emphasis on the security aspect of their E-Business operations.

The survey also indicated that only 43 percent of the organisations had security risk assessment whereas majority of the organisations (57 percent) were not following this practice. About the risk determination, 23 percent of the organisation identified the business value of the information asset but did not quantified it us a part of the risk management practice. Out of the 22 percent of the organisations identified, the possible threats to the information asset, only 3 percent quantified. Thirty percent of the responded identified the threats which were most likely to occur. About 15 percent of the organisations realised the impact of threat in business and only 5 percent quantified it. Only 14 percent of the respondents performed all the above stated elements as part of risk management practice for identifying but only 3 percent identified and quantified both. In Indian companies having E-Business involvement, 53 percent of the organisations provide training on security practices whereas 47 percent did not regard the practice of information audit. Only 29 percent of the respondents indicated by an independent auditor. However, 71 percent of the respondents did not have a control mechanism to monitor and to keep track of where the information originated from.
In 1995 Jeff Bezos opened his internet book store called amazon.com, the concept was well executed and advanced to gain and keep customer attention and generating orders. Today General Electrical doing more business on internet than any non-computer manufacturer. Focus on the customer, the key driver to Business to Business e-commerce was the simple fact that purchasing online saved big bucks. But the inefficient flow of goods and services let even big ones in trouble. Amazon.com lost $585 million on revenues of $1.6 billion in 1995. More mature web organisations and web retailers including amazone.com was shifting from marketing to fulfillment logistics ie. efficient supply chain management.

Sahay B.S and Arun Gupta discussed the role of supply chain management in success of E-commerce as back end tool. Simchi-Levi and Mockley stated that there were four levels of E-commerce depending upon the sophistication of the transaction and the level of data exchange. They were one way communication, database access, data exchange and sharing process. In a survey administered by the Indian Market Research Bureau under the direction of the confederation of Indian Industry, it was found that 58 percent CEOs rated E-commerce as crucial part of their organisational stategy. Only 20 percent of the organisation responded were trying to use E-commerce at least to some extend. A total of 80 percent of the industry was in the process of gaining up for the show. Banks want to wait & watch while sectors like IT and courier/travel/transport be the forerunners.

Indian companies were adapting E-commerce business at an increasing rate. In year 2000, the market had been one side about Rs.140 crore. By the year 2005, it was

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expected to be surveyed by approximately Rs.22800 crores. The same trends could be observed with Business to Consumer (B2C) software market. In year 2000, B2C market estimated Rs 50 crores. It would be expected to rise about 3660 percent in next five years. Both B2B and B2C software market observed a tremendous growth rate in coming years. Despite the dotcom failure B2C or direct retailer market would be going to grow after dust would have been settled.

According to a recent MDI-KPMG survey (Sahay et al, 2001) in India supply chain, E-commerce and Data warehousing / mining had not been considered so far by over 30 percent of the respondents in each of the above stated categories. One of the above three IT solutions, E-commerce outsmarts the other two under active considerations in over 34.7 percent of the respondent base. Implementation time for these IT solution was a long and sequential one. Organisations graduated in a method manner to supply chain, E-commerce and finally Data warehousing/Data mining. There were quite few organisation that were unaware of data warehousing. Even though E-commerce and supply chain solution were under active usage it was necessary to know what the ways they were adopting to equip themselves. Clearly 48.6 percent of organisations were used in house IT solutions preferred not to rely on readily available supply chain solutions. But 31.5 percent of them preferred to use custom developed solution and only 25.3 percent of the solutions were packaged solutions for implementing supply chain solutions. It was better to use custom developed solutions than having in-house development capabilities for the variety of solutions to be developed for E-commerce supply chain.
Companies must re-evaluate the complete fulfillment business model promotions, merchandising, product selection, pricing, supplier relations, technical management, distribution, and post-sale service. Each of these areas demanded new processes, skills and approaches. To satisfy a consumer driven market place, companies must move beyond the singular mentality of intercompany optimisation. Instead they must focussed on how intercompany business process synchronisation could transform consumer channels into consumer satisfaction. As with single company, one competencies of each component of the supply chain must be evaluated objectively to eliminate inefficiencies and interact intelligently in order to facilitate integration of various processes.

Companies need to integrate document and sourcing, production executions, and distribution management. Most web servers had spouse connection to the Enterprise Resource Planning (ERP) system. Thus when a user wanted to know when a product would be delivered the web application often could not tell the inventory available in the ERP system or at the third party warehouse. These problems could address by utilising standard information formats communication points between trading partners. So accurate distribution but inventory, updated frequently was essential to run an effective online business. To a great extend E-commerce means effectively managing various supply chain operations and reduced cycle time by providing real-time often regards product availability, inventory level, shipment status, and production environments (eg. Radstack & Ketelkar 98) and could effectively link customer demand information to upstream supplychain functions & subsequently supply chain operation.
Christian Breu\textsuperscript{15} said that Customer Relationship Management (CRM) included relations of companies to their clients and activities for the consequent support of client and service processes. Technological world allowed clients to participate in the creative and inventive development of individual products. Since the interaction with and identification of the customer guaranteed in modern management platforms linked with the voluntary cooperation of the client and his ambition to design a customised product which made effective CRM. Office communication, groupware and workflow management comprised the basic foundation of web based approach to project management and CRM.

Office automation support increased the productivity of end users, shortened office operations, reduced media breaks, integrated and combined information of various sources. Groupware systems supported co-operation in an unstructured ad-hoc manner to provide information for all members of the group under a variety of access points to allow the possibility of simple data exchange and to allow various ways of collaboration. Work flow management systems controlled the workflow among all members of a group that were involved in certain business process.

New technologies especially Internet had broadened the possibilities of interaction and identification. This was the reason why CRM applications, next to supply chain management applications were seen as the most rapidly growing market in E-commerce software development. CRM applications could be of operational, analytical

and collaborative. But in the context of virtual based enterprises and web-based project management, collaborative CRM played the most important role. The evolution from economies of scale via economies of scope, to economies of speed and to economies of information has resulted in requirements of more flexible and more individual planning and production process. Economics of speed lead to the emergence of virtual enterprises. Clients did not buy finished products from virtual enterprises, but they trust their skills to individually create goods for the client's special needs operational. Analytical CRM became less important in this scenario.

The new collaborative CRM approach integrated the customer in the production process in addition to collaborative CRM by using a communication centre and communication bridges between company and customer. The model of collaboration among companies differed from the client integrated case in such a way that the participants were agitated with equal rights. They did not necessarily interacted in all segments of the project. At first sight a B2B collaboration setting did not require any CRM. However, if both the virtual enterprise and its customers used the same internet platform, individual companies could access CRM data both about the customers and about other participating companies.

Hierarchical B2B was characterised by precisely defined contracts with definite structures of responsibilities and dependencies. In this scenario none of the participants had full information about the entire setting even though the Internet of company client
relationships CRM was complex. Nobody had full view to the complete project structure and to the complete CRM information that was available.

Yeoh Ei Leen\(^6\) discussed the type small and medium-sized manufacturing industries in shabha from the Government to implement electronic commerce. As per the Malasian Industry Development Association (effective January 18, 1998), a company with an annual sales turnover of not more than RM 10 million and with less than 50 full time employees in small-sized industry and a company with an annual sales turnover of not exceeding RM 25 Million and with full time employees of not more than 150 were medium sized industry. This small and medium sized industry constituted only 7 percent of the total number of small industries found in Malasia.

This exploratory research data was collected through a survey administered by open-ended questionnaire. The sample size was 94 members of the federation of Sabah Manufacturers (November 1999). Face to face interview were conducted with companies who had located around the city of Kota Kinabalu, and Sabah. However, respondents located Sandkam, Hahad Datu, Tawane and other small towns, the survey questionnaire was framed, followed by telephone calls to ensure the feedback. Out of 94 respondents 50 percent were from the small scale and other 50 percent were from medium-sized, industries.

The respondents were from food and beverage fabricated metal products, machinery and equipment and wood and wood products. The survey indicated that the product positioning and competition among the small industries in Sabah were based on either price or quality. According to author's earlier exploratory research, many of the medium sized manufactures were interested in new market development but they had neither the marketing knowledge nor business contacts.

Research findings showed that most of the respondents were either exporting to Peninsular Malasia, Brunei and South East Asia or interested to export to Europe and USA. Those who were manufacturing heavy and bulk products, such as bricks or electric cranes and some of the very small industries with less than five full time employees were constraint to export. But factors like marketing and shipping cost, lack of business contact, customer knowledge and marketing resources, inadequate information absent their perspective buyers and competitors, insufficient information of the foreign markets that they want to export to, not susceptible to price competition, and the perception that products were lower in quality than other foreign products, lack of marketing knowledge and high shipping cost hinder the small manufacturers from export.

Merely 18 percent small-sized manufacturers had never heard of E-commerce and they had no intention to adopt any new technology. But the remaining 82 percent were aware of the Internet & E-commerce. These business men were willing to adopt cost
effective E-commerce. These small and medium-sized manufacturers were ready to implement E-commerce if it was cost effective and faster. They were also encouraged by the enhanced security features and reliability. Only 10 percent swap that the need to promote and to advertise their products to foreign markets, to reach out to overseas customers and the implementation of AFTA in the factors induced them to adopt E-commerce. Only two of the total respondent were aware of the E-commerce grant allocated by Malasian Governmentt. SMEs also hopes to get Government assistance for training to enable them to implement E-commerce. SMEs also expected road shows to promote awareness of the Internet facilities and appreciate stricter cyber law enforcement.

M.P Gupta\textsuperscript{17} said that the internet economy was different from the physical economy in terms of information, knowledge and speed. Using the net to manage relationship with customers and trading partners became a new secret weapon in the internet economy. To be competitive in this economy, companies need to hammer the power of Internet and the best way to do it was through electronic business. In fact, E-Business accelerated developments in areas like globalisation, branding of customer services and the supply chain. Medium E-business showed easy signs of growth and matched up with their counter parts from developed countries. Business to Business was

likely to be the E-commerce driver. Even though the legislative & infrastructure reforms were agency awaited some players like NSE, Bennet & Coleman & ICICI were demonstrating encouraging results.

India was all set to emerged as an E-commerce driven country with her trained manpower and Government support, rapidly increasing penetration of the Internet and use of technology based services. E-Business survey of corporate India evaluated the perceptions, status, Netscape Competitiveness Quotient (NCQ) and triggers of the use of E-commerce. The main objective of the survey was to determine the current awareness, usage levels and initiatives undertaken in the area of E-commerce and identification of perceived barriers to adopting E-commerce. Both the inside and outside variables operating in the E-space determined the Netscape Competitive Quotient. The first thing was to establish connections with customers building brand, selling products and services providing information, collecting feedback, gathering customer profiles to all. The internal operation include design, supply-chain management, manufacturing, and delivery systems.

A questionnaire survey was carried out to evaluate the Netspace Competitive Quotient of Indian E-Business ventures and corporations. The total respondents were 56 from the following cross section of Indian E-big firms. Public sector undertakings (14 percent) computers and communication (24 percent), manufacturing and distribution (7
percent), service and entertainment (10 percent), Retail and whole sale trade (9 percent), financial service (10 percent), education (14 percent), E-entrepreneur (4 percent) and other industries (7 percent). Half of the respondents said that E-commerce constituted either a substantial part or was crucial to their organisations strategy. Only 3 percent felt that it was of not importance to the organisations strategy.

The respondents rated improved productivity and shortened supply chain as the top two potential benefits followed by potential to reach new markets and improved product quality. The respondents rated lack of standard payment systems and infrastructure cost as the top two barriers to effective adoption. Inadequate column and security issues figured as major concerns. Half of the respondents had management support and allocated budget for E-commerce. Majority of the respondents were not able to determine the number of transactions completed through electronic channels. The respondents were rated E-commerce security features very highly. The highest ratings had been given to network access controls and through the system tests and audits.

E-commerce enabled businesses and the people to market, sell and buy products and services through the Internet. The ability to order online would not be complete without the ability to make payment online. Payment system was a factor in determining whether the process was digital or physical. If a transaction was made online and the payment was made by submitting the customers credit card number to the merchant, the process could be categorised as a digital process. However if the transaction was made online but the payment has to be made by sending a physical check or money order, then
the process has to be categorised as a physical process. This eliminated the possibility of making one transaction a pure E-commerce.

Shamshul Bahri Bin Zakaria\textsuperscript{18} categorised online payment system into four types. They were credit/debit cards based-systems, electronic cash-based systems, electronic checks based-systems, and smart cards based-systems. Another emerging trend in online payment system was in the form of micro-payment based systems intended for small amount of payment. This system was new and still under experiment.

There were different card schemes like credit card, debit card, change card and travel and entertainment card. Credit card schemes had been used as the most popular payment method and the two major international brands were VISA and Master Card. There were five parties viz. the consumer (Card holder), the issuing bank, the merchant, the acquiring bank and the card association. The two major security schemes for using credit cards are Secure Socket Layer (SSL) and Secure Electronic Transaction (SET). SSL in a general purpose protocol designed to be used to secure any dialogue taking place between applications communicating across a socket inter process communication mechanism. The card holder gave the permission to the merchant to credit the amount of the transaction from the card’s issuing bank. But SET was a more restricted protocol. SET was restricted to payment card or similar applications where parties would take on

\textsuperscript{18}Shamshul Bahri Bin Zakaria, "Online Payment Systems: A Study on its Usage by Several Companies in Malaysia" International Conference on E-commerce, Multimedia University, Kollalampur, Malasia, November 21 to 23, 2000.
the rode of buyer, merchant or acquirer. SET did not address transfer to funds from one individual to another. SET provided strong encryption & authentication. The merchant did not know the consumer credit card number. This eliminated the possibility of the credit card's number being stolen & used by other people.

Electronic check worked as that of its paper counterpart. In its electronic check architecture, all individuals capable of issuing checks would be in possession of an electronic check book device based on some of secure hardware. The payee would endorse the check when it was received by using another sort of secure hardware device before forwarding it to the payee's bank. Next the banks involved cleared the check using the normal Automated Cleaning House (ACH) or Electronic Check Presentment (ECP) methods.

Carnegie Mellon University developed a payment system called Net Bill. In this architecture the merchants and customers must maintain their accesses with the Net Bill Server. Meanwhile, the Information Sciences Institute of the University of Southern California developed a check-like system called Net Cheque. A Net Cheque accessent was similar to a conventional bank a/c against which a/c holders could write electronic checks. The Net Cheque has to be endorsed by the merchant before the check was paid.

Since cash was the most preferred type of payment method many parties had attended to create electronic cash payment systems. Digicash was a company based in
Holland and the United States in electronic payment systems and digital cash. The company developed E-cash to allow fully anonymous secure electronic cash. When client withdraws coins from a bank in such a way that the bank could not know the serial number of those coins. The coins could be spent anonymously with a merchant. It was also said to be a secure electronic cash system through the use of both symmetric and asymmetric cryptography. Conditional Access For Europe (CAFÉ), a project funded by European community’s ESPRIT Programe developed advanced electronic payment system which was a hybrid of untraceable electronic cash and the concept of check with counters. Even though it offered all the benefits, it allowed the user sign checks up to a specified amount. Netcash developed by the Information Science Institute of the University of Southern California consisted of distributed currency servers that mint electronic coins and issue these coins to the users of the system, accepting electronic checks in payment for them. In digital cash, each coin having a unique serial number. This macro payment system suitable for selling hard goods, information or other network service. The Cyber-coin cash was stored in a special area of the cyber cash wallet. When a user decided to pay a merchant, he forwarded a payment message to the merchant who verified it with the cyber cash server. Mondex card developed by Nat West (OK banking Organisation) was preloaded chip card. The card was initially loaded by contacting a bank. When the card holder wanted to use it for transaction purpose, he/she needs to gave
the card to the retailer who must be equipped value transfer terminal which facilitated the transfer of value from the customer card to the retailer card. One of the most important secure hardware device was the chip card (Smart card) which was a possible data storage device with intelligence and provisions for identity and security.

There were number of card types used today, namely magnetic stripe card seem to be the most suitable cards for secure payment. A more advanced type of smart cards would be the processor card. Malaysia had a long way to go in terms of usage and knowledge of online payment systems & technologies. Out of the 26 companies interviewed the online payment system usage ranged from 6 percent to 31 percent. The companies seem to know the technologies but unaware about the operation of the system. A lot of companies in Malaysia had been using credit/debit card for electronic transaction. The surveyed companies seems to know more about credit/debit cards based-system.

The future looks brighter for online payment system in Malaysia. There were a lot of benefits that online payment systems could offer. It would improve cash flow management and operating efficiencies, increased company’s participation in customer’s acquisition process, compress the business cycle of the company and intensified the company’s relationship with the business partners. It also reduced the cost, increased the number of customers for the company, enhanced the relationship between the customers and the company and quite importantly, improve the company's image. The E-billing
enabled the merchants to save printing and mailing cost. It also reduced the time it took to deliver bills and receive payments.

There were barriers like security, legal, technical social and business suitability concerns that hindered online payment systems. The four attributes important to the security were authenticity, integrity, non-repudiation, and confidentiality. In addition to the above function, there was an emotional insecurity of the reliability of Internet as a medium of payments. And also business and society wait for the larger crowd to start using online payment before they themselves start using it.

The correlation coefficient test showed that these strongest correlation between security and legal concerns, followed by the correlation between legal & technical concerns. The study also showed that a lot more thing like Malaysia's Internet infrastructure need to be upgraded along with the policies & laws concerned to E-commerce. There were several requirements like flexibility, ease of use, cost-effective, feasibility and universality. Flexibility means that the payment could be carried without the intervention of an intermediary. Ease of use means that payments could be made or received as easily as taking money from one pocket. Cost effectiveness means that there were no additional transaction. Fee feasibility means that the fees received could be used to make other payments without the need to change in form. Universality means that the scene payment mechanism could be the traditional type of payment. The payment
mechanism also used to be secure. It has to be safe, private and trustworthy. The retailer need to look into the payment mechanism which should be able to integrate with the retailers ensign payment mechanisms and they were not forced to use a payment mechanism that they found unacceptable in the real world.

Rosniwati Mohd. Nasir defined electronic market place as a place where buyers and sellers interact via the Internet to exchange information, purchase products and services as well as make payments. The three fundamental formats of B2B marketplace were that of an exchange, an auction or a multi-vendor catalog. There were four success factors identified for the sustainability of a B2B marketplace. They were domain expertise, constant participation in the marketplace, a neutral party and the first to establish the specific marketplace. The Gartner Group Inc. predicted that B2B E-commerce in Asia would reach to US$ 995.8 billion by 2004 and that more than fifty percent would be derived from B2B market places in nonfinancial electronic sales transactions. The Researcher categorised B2B market place into lead-generation based and transaction-based. The generation based offered opportunities via electronic advertising and products showcase whereas transaction-based market place enabled the buying and selling of goods from single or multiple buyer and sellers. The study conducted on selected Malaysian B2B marketplaces were using global and local search

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engines. The criteria of search were a combination and permutations of B2B, portals, marketplace and Malaysia. The study concluded that the state of Malaysian B2B electronic marketplace was due to various identifiable issues that were beyond the scope of this. So in depth studies should be undertaken to examine this area that would be a vital and integral part of the new economy.

In a study carried out by a research agency in USA and as reported by NASSCOM, internet transaction cost only one third as much compared to a telephonic transaction and the profit margins as provided by online commerce was higher by around four percent than telephonic transactions. E-commerce permitted sale and transmission of services electronically as in airlines, securities, music cd's, banking and insurance. The importance of information management for effectiveness and competitive edge in the market had risen along with the importance of excellence in production systems. The benefits of transaction cost reduction, channel efficiency, interactivity and adaptability to the changes made internet no longer a luxury. The three main legal issues for Internet business were the need to ascertain whether they were operating within the law, the legal frame, and to keep abreast of any specific rules applicable to E-commerce and ensured compliance. About tax issues, USA had been proposed to include a clause for moratorium of taxes on E-commerce transactions to its income tax rules, without much success. Most of the developed countries were trying to establish standards for regulating
the taxation of E-commerce services. In India, according to sec 9(1) of the Income Tax Act, 1961, any income from business connection in India was taxable. Actually contours of Tax laws both domestic and international would have to be reviewed and changed. So that these became compatible with electronic transactions.

Cheng Ming Yu\textsuperscript{20} said that rapid changes in Information Technologies and subsequent advances in information and communication technologies had driven virtually most businesses to participate in the new economy. These changes created E-commerce. Eventhough E-commerce were used extensively now a days, only a few people really understand the impact of E-commerce on our economy. With the development of world wide web in the early 1990s, internet technology has transformed its function and became one of the most valuable tools aiding the development of E-commerce by the reduction of transaction cost. According to the Ministry of Trade and Industry of Japan and the Inter-Agency Task Force on Electronic Commerce (IAFTEC) in Malasia defined E-commerce as business transactions conducted over the public and private computer networks. It was based on electronic processing and transmission of data, text, sound and video. E-commerce included transactions within a global information economy such as electronic trading of goods and services, on-line directory of digital content, electronic fund transfers, electronic share trading, electronic bills of lading. Commercial auctions,

\textsuperscript{20}Cheng Ming Yu and David N. Abdulai, "E-Commerce and the New Economy" International Conference on E-commerce, Multimedia University, Kolalampur, Malasia, November 21 to 23, 2000.
collaborative design and engineering, on-line sourcing, public procurement, direct consumer marketing and after-sales services. It involved the application of multimedia technologies and work flows, aimed at increasing business competitiveness.

In short E-commerce included Electronic Data Interchange(EDI), electronic banking, digital cash and other electronic payment systems, as well as other network based commerce. E-commerce had a direct input on the productive activity. The producers updated themselves with the information about the market place. The borderless opportunity, direct transaction between producers, suppliers and consumers without middlemen saved transaction cost which contributed a lower total cost of production passed on to the consumer. The internet connectivity and speed in transactions helped to boost revenues, slashed production cycles cost and hence broaden market share.

In E-commerce activity, a distributor could bypass retail channel, alternatively retailer also could order products directly from the manufacturer and sell to the consumer. Thus in E-commerce the function of both retailers and distributors could not be differentiated. There may be two types of distribution channel in the cyber world. One was physical E-distributor and the other was virtual E-distributor. Physical E-distributors were distributors and retailers who handle inventory and physical products while virtual E-distributor handle non physical products that did not require investment in physical
assets. The security issues, userfriendliness trust and so on would post a great challenge to the distribution channel in the economy.

E-commerce provided numerous advantages to consumer. It made purchase easier, easily accessibility of information, variety of products, saves consumer's money, time, energy and effort in their buying activity. Consumers also could attain information on price, quality, design, packaging, producer's information. But for some products like food there were doubt about the quality of products. Trust was an important factor for E-commerce. The issue of security, especially even with sophisticated encryption technologies, hackers had been able to break. Another constraint of E-commerce was that the delay caused in the delivery of goods physically and the inefficiencies involved in the delivery process of the products. And E-commerce did not have direct control over the physical delivery of goods. Another constraint was that most people did not have accessible to the Internet. The role of Government was notable in E-commerce. The Government protected primary and security of consumers to enhance the growth of E-commerce. A good communication and infrastructure was essential for E-commerce to flourish in any economy.

Hasnizam Hasan\textsuperscript{21} said that most retailers entered the market at low margin and low price which would threatened the existing players. The use of internet as a channel of

distribution was still in its infancy but growing at a phenomenal rate. According to Etzel, Walker and Stanton (2000) there were three phases of retailing evolution which was brick-and-mortar, click-and-mortar and finally E-tailers. In traditional business retailers had direct contact with customers. This allowed the retailers to acquire more feedback on dissatisfaction from consumers. But the internet had been facilitating retail marketing by means of communicating information about the retail organisations, its products and services and to gain more product information in order to make buying decisions.

Internet retailers in E-commerce could be classified into four main categories such as virtual E-tailers, cyber E-retailers, catalog E-retailers and brick-and-mortar multichannels E-retailers (Coyle 2000). Virtual E-retailers neither carry any inventory nor physical distribution. The operation depended solely on order taking and demand aggregation. Cyber E-retailers had control over the inventories and own or lease physical space to others who did not own the portal or company website.

The brick-and-mortar E-retailers was a combination of between the traditional way of retail store with online retailing. The online retailers need to devote as much care and attention to researching and understanding the market to design and crafting of their offers and to their skills and capabilities in delivering the offers as they would in the development of more conventional physical store fronts(Reynolds, 1997). The retailing function performed by the internet retailers were classified under three major groups.
They were information channel, reservation channel and purchase and physical delivery channel.

There were ten steps involved in implementing internet retailing. The fundamental usage of internet searched information and finally helped the browser decide on their purchase. If the company's website was very reliable and efficient, experienced customers would tend to recommend to other people. If a company did not have the capability to develop its own website, it was good if the online retailer was able to choose a popular portal in order to promote the product successfully. Retailer created product awareness by promoting them on the net. But not all products were suitable for online sale. The online retailer must be able to provide an avenue for customers to negotiate. If both parties were satisfied with the terms and conditions, customers made an attempt to place an order. At this point customers wanted to know where and how he/she paid for the item online. Online buyer had two alternative via credit card or by checking account. As far as this mode of payment was concerned security and privacy would hinder a customer from net purchase.

Samtani Anil22 in his research paper said that Asia-Pacific region would overtake United States in E-commerce area. To be effective in online business in Asia, the Asian Business Law Review provided an overview of the applicable laws governing E-

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commerce in select Asian jurisdictions and aid the foreign investor in understanding the applicable legal regions in the countries. The legislation passed or sought to be passed in Asia include Australia’s Electronic Transactions Act 1999, Broadcasting Services Amendment act 1999, Privacy Bill and the Copyright Amendment Bill 1999, South Korea’s Electronic Transaction Basic Act 1998, Hong Kong Electronic Transactions Ordinance 2000, Japan’s Draft Bill concerning Electronic Signatures and Certification Authorities and the law partially amending the Trade Mark Law, Malasian Communications and Multimedia Commission Act 1998, Communications and Multimedia Act 1998, Digital Signature Act 1997, Computer Crime Act 1997 and Telemedicine Act 1997, The Philippines Electronic commerce Act, and India’s Information Technology Act 2000. But the primary focus of these laws and regulations were to update the substantive territorial laws of the jurisdictions concerned. This proved to be ineffective unless proper steps were taken to harmonies the laws amongst the different countries as well. But when we compare the legislation passed by western countries with Asia, the legislation tends to lag. And more over a uniform law that applied equally to all jurisdictions would help to introduce a degree of sanity to the conduct of activities in cyberspace.

American Bar Association’s Draft report on “Jurisdictional Issues created by the Internet”, which was released on 10th July 2000 suggested that the Internet governed by a
global cyberspace authority called for a mix of technology, self-regulation and international co-operation. There were two key approaches that could be adopted to the regulation of electronic transaction. The 'functional equivalency approach' entails an examination of the role currently played by a particular legal rule in the non-legal commercial world, identification of the way in which the same function could be achieved in electronic transactions and extending the existing rule by analog to electronic transactions. This approach attempted to fit cyberspace within the ambit of familiar legal rules.

Another approach was to move away from preoccupation with picking out the best rules devised in a non-digital context and imported them into cyberspace and towards a reassessment of starting with an identification and application of first principles. This approach had the merit of leading to a much more healthy development of the law in the long term. The functional equivalency approach was also employed in the United Kingdom's Electronics Communications Bill. The UNCITRAL model law on E-commerce could be used in all countries regardless of their technological proficiency or the legal framework under which these countries operated. As of August 2000, the countries in Asia adopted the model law was Australia, Hong Kong, Republic of Korea, Singapore and the Philippines. The E-asian task force also recently announced that there had been agreement among the various ASEAN member states to base their respective National E-commerce laws on UNCITRAL'S Model Law by 2003. One commentator rightly noted that it damned the model law and did not dealt with the question of when a
message was ineffectiv. But instead it concentrated on the issues of when the message received. So the approach adopted in the draft revision of the uniform commercial code was better suited in dealing with these difficulties. The Internet also posed a viable threat to the protection hitherto afforded by intellectual Property Right. Technological change transform not only substantive right and obligations but also political and legal institutions involved in the creation, development and enforcement of these rights. Santani Anil clearly pointed out the legal, regulatory and policy issues of E-commerce in Asia.

Zaharah Bakar\textsuperscript{23} said that one of the flagship applications of Multimedia Super Corridor or MSC established by Malaysian Government was borderless marketing. Different authors suggested that web retailing became more significant in this borderless marketing. Many retailers were using web site for advertising, public relations, and customer service access. Berthon, Pitt and Watson (1996) demonstrated that Internet generated awareness, explained or demonstrated the product, provided information, helped in the evaluation and selection process, and provided feedback. A questionnaire was developed and pretested among a small sample of retailers from a town in the state of Malacca, a southern state of Malaysia to assess the Malaysian retailers perception towards marketing through the Internet. A sample of 300 retailers were selected randomly through various search engines. Out this 300 only 173 returned with complete

answers. Only 32.37 percent of these respondents reached their customers through the Internet. The respondents were from different segments.

The survey findings showed that 58 percent of the retailer's presidents or owners influenced the decision to market through the Internet. Majority of the retailers were satisfied with marketing on the Internet. But they were uncertain about the benefit received through internet. The survey also showed the drawback of internet marketing as part of the retailers and customers delivery services. Network security and privacy became fundamental for such services. The majority of the respondents (91 percent) did not think that the internet would replace any form of conventional marketing. It was due to the lack of confidence of companies towards this new medium. This study assumed that the retailers understood how internet fitted into their marketing strategy. Sophisticated consumer databases, which were enabled by interactive media like internet could be generated for better audience measurement. This provided customer service and building relationships.