A Project Report

On

Electronic Commerce

Presented by:

Poonam Maheshwari
B.Com
(Computer Applications)
Anand Vihar College
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POONAM MAHESHWARI

B.COM (COMPUTER)

III rd Year.

ANAND VIHAR COLLEGE

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Chapter-1

WHAT IS E-COMMERCE?

For some time now, large business enterprises have used electronic commerce to conduct their business-to-business transactions. **Electronic Data Interchange** (EDI) on private networks began in the 1960s, and the banks have been using dedicated networks for **Electronic Funds Transfer** (EFT) almost as long. Electronic Data Interchange allows companies to exchange business documents in a standardized form whereas Electronic Funds Transfer was designed to optimise the transmission of electronic payments. Recently, however, with the increased awareness and popularity of the Internet, electronic commerce has come to encompass individual consumers as well as businesses of all sizes.

The Internet is already changing the way that many companies conduct their business. As that influence grows, and as more companies use the Internet, the

possibilities for conducting business-to-business commerce on the Internet will expand greatly, and become more of a routine part of commerce than it is today.

E-Commerce is one of the most exciting economic and technology trends of recent pasts. It provides a new market place, more opportunities to sell and market the product and greater competitive advantage. E-Commerce encompasses the entire online process of developing, marketing, selling, delivering, servicing and paying for products and services. The Internet's Web browser a client/server architecture and net works of hyper media databases on the World Wide Web (WWW) serve as the technology platform for E-commerce among the Internet connected communities of customers and business partners. E-commerce has become more popular due to (a) Low set-up cost (b) Global access (c) multiple opportunities (d) Availability of technology and (e) Global free market.

An Overview

Electronic Commerce is defined as the buying and selling of products and services over the Internet, but there are many more aspects. From its interception, electronic commerce had included the handling of purchase transactions and funds transfers over computer networks. It's grown now to include the buying and selling of new commodities such as electronic information. And the opportunities for companies seeking to take advantage of the capabilities of electronic commerce are greater than merely adopting our present view of commerce to performing those same transactions over electronic networks (although that's a good place to start an exploration of the topic).

Despite electronic commerce's past roots in transactions between large corporations, banks, and other financial institutions, the use of the Internet as a way to bring electronic commerce to the individual consumers has lead to shift in view point. Over the past

few years, both the press and the business community have increased their focus on electronic commerce involving the consumer.

Meanwhile business-to-business electronic commerce is rolling along, stronger than ever. The Internet has also given business-to-business electronic commerce a boost - in some cases, smaller companies are now discovering that they can conduct business online, just like their larger counter parts. And businesses of all sizes are finding that they can take advantage of the Internet to lower the cost of electronic commerce - either by replacing other networks or by using the Internet as another communications medium, converting their business data to digital form, and incorporating it with their business practices.

The move for businesses to digitize information isn't new - it's been going on for more than a decade, and continues to increase as per personal computers become standard business equipments for more and more

corporations. What's making a notable difference to businesses is that a significant synergy has formed between the use of digital information, computerised business practices, and the Internet. This synergy is what enables electronic commerce.

Before defining electronic commerce, one should consider what makes up traditional commerce. Traditional commerce involves more than just selling an item and collecting the money. It is what's actually involved in the sale cycle of a purchase managed without electronic commerce. The sale cycle describes the linear series of tasks that support the buying and selling of goods and services. To meet the needs of market place businesses design and manufacture new products, market their products, distribute them, and provide customer support, generating the revenue for them along the way. Customer first has to identify a need for something, whether it is a physical product, a service or information. Then they must look for information about

that product or services, find places that sell it, and compare the options they have found (prices, services, reputation, and so on) before they actually purchase the product. Making the might involve negotiating the price, quantity, terms of delivery, and may be even some legal issues. And the sale cycle doesn't end with the delivery of the product or the service, either. Customer support adds more steps while working to the benefit of both parties-customers get what they need to keep their products well, and supplies learn more about market needs. Meanwhile, banks and other financial institutions handle the transfer of funds between buyers and seller, whether they are individual consumers or large multinationals corporations.

Electronic commerce is a system that includes not only those transactions that center on buying and selling goods and services to directly generate revenues, but also those transaction that support revenue generation, such as generating demand for those goods and services,

offering sales support and customer service of facilitating communications between business partners.

Electronic commerce builds on the advantage and structures of traditional commerce by adding the flexibilities offered by networks. By operating with digital information in electronic networks, electronic commerce brings with it some new opportunities for conducting commercial activities. For example, by using digital information for commercial activities, electronic commerce makes it easier for different groups to cooperate. The groups could be departments sharing information within a company to plan a marketing campaign, companies working together to design and build new products or offer new services, or businesses sharing information with their customer relations. Electronic commerce can facilitate internal department interactions, improves customer relations, and eliminate the constraints of time and place.

Conducting commercial activities on electronic networks also removes certain physical constraints. Orders for your products and services can also be accepted on an anytime, anywhere basis.

Electronic commerce enables new forms of business, as well as new ways of doing business. Amazon.com, for example, is a bookseller based in Seattle, Washington. The company has no physical stores, sells all their books via the Internet, and coordinates deliveries directly with the publishers so they do not have to maintain any inventory.

The definition of electronic commerce is not static one. Even as the new opportunities offered by our current technological capabilities have yet to be fully exploited, new networking technologies or applications software can arrive tomorrow. Thus we'll be presented not only with new ways of doing what we have done in the past, but we'll also find new things to do.

More than the sum of its parts

For those of you in the business of providing information products and services, or content, your production options vary form traditional print media to various forms of multi-media, either for the web movies, or television .The crucial fact is that all of this information can be expressed and stored as computer bits, which makes the product more versatile as new media are embraced or new opportunities arise.

For example, catalog data stored in a database can be presented electronically via Web, but it can also be printed in customized catalogs targeted at specific market niches. Or the data might be included on a CD-ROM, along with multimedia presentations of your products. Your production infrastructure is going to rely on computers and other electronic devices. If you're publishing information on the Internet, you'll be using such computer applications as **Web Servers**, databases, and multimedia authoring tools. This section looks at the

five processes: information sharing, payment, fulfillment, and service and support. All of these are part of the new electronic commerce life cycle.

Information Sharing

Even before you make a sale, you need to make clientele aware of your products and services. That means advertising and marketing or, more generally, providing data for your customers' information gathering process. Potential customers must get information about your company and the products, while you learn more about your markets in order to reach your customers better, and design your products and services to meet their needs.

Networked communities can be useful for distributing information about your products. Chat rooms, multi-party conferencing, bulletin board systems, and newsgroups are all ways you can use to foster

discussion of your company and its products. Many of these systems can be integrated with Web Server.

The World Wide Web ('the web') provides one effective medium for communicating with your customers. You can design Web sites to include product catalogs that can be searched electronically and that provide new types of product information. If you maintain online catalog of products using the Web, you can obtain data on which products are requested in searches, and how often those requests are made.

Or you can actively request information from visitors to your Web site by providing them with a page for comments. Asking Web visitors to provide some information about them as they search your catalog, or prepare an online order, can help you tie demographic data to product searches and information requests - information can help your marketing and sales departments. You can also send periodic notices about

product upgrades and new features to interested parties by e-mail.

The Internet offers you a number of different ways to provide customer support. One part of customer support that you shouldn't over look is actively seeking customer opinions. You can design forms-based surveys for your Web site, or use e-mail to distribute similar surveys to select customers.

While a large number of Web sites are aimed at the general public, a significant number of sites are aimed at business markets. In some cases you can find intermediaries, or brokers, offering sites that allow buyers and sellers in a particular market to interact, trade information, bid, and make sales .

Ordering

It should be a routine matter for customers to electronically place orders for your company's goods or services. Electronic forms that mirror traditional paper

order forms are a good way of handling this. Client/Server applications have often been designed to handle this, but because most Web systems support electronic forms, many companies are now turning to the Web instead. But don't over look such an opportunity as accepting orders via e-mail, either. Even if you don't use form-based e-mail on the Internet, it is not too difficult to write a **CGI script** to process ASCII text messages and place the order information into a database.

Payments

Now comes the heart of the sales process - actually receiving the money for your goods and services. With a wide variety of payment mechanisms in place or proposed , this is perhaps , the most fluid and fast changing part of electronic commerce. Consumers can use credit cards, electronic checks, **digital cash**, and even something called **microcash,** when the payments are only a few pennies or dimes. Some businesses have long been user for EDI, but the set-up costs have made it prohibitive

for smaller businesses. However, with the advent of EDI over the Internet, small businesses, and even home businesses, can use EDI. Soon, your business will have consumer- based and business-based payments processed through the Internet.

Entrepreneurs are experimenting with a variety of electronic payment systems on the Internet. Many are electronic equivalents of the systems we're accustomed to using everyday, such as credit cards, checks, and debit cards. Even digital cash, an attempt to electronically represent the hard currency in your pocket, is also available. But all of these electronic methods for paying for goods and services over a network are still in a fledgling stage when compared to all the transactions completed every day using cash , checks and credit cards in the traditional world.

Businesses have responded to the popularity of the Web by putting their product data sheets and catalogs for ordering on Web Servers , so tying payment systems

to the same medium makes sense. Many vendors offers commerce-server or merchant-server Web software specifically designed to handle accepting payments over the Web ; some also include facilities for generating product catalogs.

Business are also starting to use EDI for transactions over the Internet with their suppliers , either by using Web-based forms for entering EDI transactions with a service company on the Internet , or by using secure e-mail to forward EDI transactions to their business partners.

In addition to all the methods for making payments electronically over the Internet , there are still the tried-and-true methods used every day , such as giving credit card numbers over the telephone , or faxing an order with the credit card number.

Fulfilment

Whether you call our current era the Electronic Age or the Information Age, our economy depends on the daily transfer of massive amounts of information. Many companies make money generating, transferring, or analysing that information. If your company is one of these , then you can use the Internet to transfer your information products to your clients. Aside from the forms of information , such as newsletters , news, analysis reports , and stock prices , electronic data also includes software. Documentation, program patches , and upgrades are also well suited to Internet-based distribution.

If you deal in physical goods , you can't actually deliver your products via Internet , but you can use EDI to inform your shippers of goods that need to be transferred. And the Internet lets you e-mail to communicate with suppliers and distribution about matters such as the status of deliveries. In some cases ,

shippers such as Federal Express , United Parcel Service , and American President Lines now let you check delivery status using the Web .

Number matter how innovative and popular your products are, they are no good if you cannot deliver them to your customers. Once you create a product, you need a way to distribute it. You also need ways to inform your current and potential customers about the product. Whether your product is *soft goods*, that is, information, or *hard goods*, that is, tangible products, you can use e-mail and a Web site to make a product release information available. Web sites are good for making a lot more information available than you would probably transmit via e-mail.

If you come to rely on intermediaries or other distributors to distribute your products and product information, sharing product release schedules, product development and marketing plans, similar types of information between your companies and the

intermediaries can be invaluable. Maintaining shared databases accessible by outsiders, and allowing them to enter data as well as review it, helps strengthen ties with your partners.

Service and Support

Rarely does a company's relationship with a customer and with the sale. In fact, the sale may be only the beginning of a long fruitful relationship with a customer. Not only might the customer need some sort of assistance with the product or service , but your company might want to work with the customer to improve the products and services it can offer to other customers in the future.

Items such as technical notes about your products' features and uses, FAQs (frequently asked questions) that provide answers to your customers' most commonly-posed inquiries, software updates, and bug

fixes, are only some information you can make available to the customers on the Internet.

Cleverly designed systems can provide this information to customers through a variety of channels, such as fax, e-mail, and the Web, all at the same time. And these systems don't have to be static; you can let your customers help decide what information you should provide. Providing a form for questions on the Web site, or simply accepting questions by e-mail (and not just to your technical support people), can go a long way toward ensuring that you're getting the right information into the right hands.

New Opportunities

The comparison of how traditional and electronic commerce can be used for ordering items such filing cabinets was a simple, rather straightforward example of commerce. When you consider the different applications that can be used to work on digital

information, electronic commerce cannot only simplify the delivery of information but it can also change the relationship between them. That adds up to new opportunities.

Electronic advertisements for office furniture could lead right to information about local stores carrying that item, along with that store's business hours and directions, even pointers to review of the products. If a customer doesn't need to see a product in person before buying, orders could be placed and paid for electronically.

Electronic commerce offers other new opportunities to both individuals and businesses. As electronic commerce matures, and more companies conduct business on line, you'll be able to do comparison shopping more easily.

In addition, vendors will be able to electronically notify potential customers about sales of items in which

they are particularly interested. Despite all the talk concerning *disintermediation*, the increase of direct buyer-seller interaction at the expense of the middlemen, electronic commerce will open up new opportunities for new kinds of intermediaries. For example, some businesses will become intermediaries or brokers to track special markets, notifying clients of bargains, changing market conditions, and hard-to-find items, and even conducting periodic searches for special products on their behalf.

We've only begun to see the opportunities and synergies that electronic commerce can offer. In the past three or four years, the Internet has become more appealing to the consumers. The World Wide Web has allowed more consumers to confidently use the Internet, and it has offered individuals and businesses new ways to present and find information.

Business-to-business transactions can now take place at less expense using the Internet than they did

using private networks offered for EDI and bank transactions. This has offered not only potential costs savings for large businesses to use the electronic processes they found prohibitively expensive in the past.

The Benefits of Electronic Commerce

Electronic commerce can offer your company both short-term and long-term benefits. Not only can it open new markets, enabling you to reach new customers, but it can also make it easier and faster for you to do business with your existing customer base. Moving business practices, such as ordering, invoicing, and customer support, to network - based systems can also reduce paperwork involved in business-to-business transactions. When more of your information is digital, you can better focus on meeting your customers' needs. Tracking customer satisfaction, requesting more customer feedback, and presenting custom solutions for your clientele are just some of the opportunities that can stem from electronic commerce.

Chapter-2

ELECTRONIC COMMERCE

Electronic Commerce can be defined as "buying and selling of information, products, and services via computer networks. E-commerce helps in conducting traditional commerce through new ways by transferring and processing information since it is information, which is at the heart of any commercial activity. Information is electronically transferred from computer to computer, in an automated way. This has transformed the way organisation functions.

E-commerce refers to the paperiess exchange of business information using Electronic Data Interchange, Electronic Mail Bulletin Boards, Electronic Funds Transfers and other network based technologies. It not only automates manual processes and paper transaction, but also helps organization move to fully electronic environment and change the way they operate.

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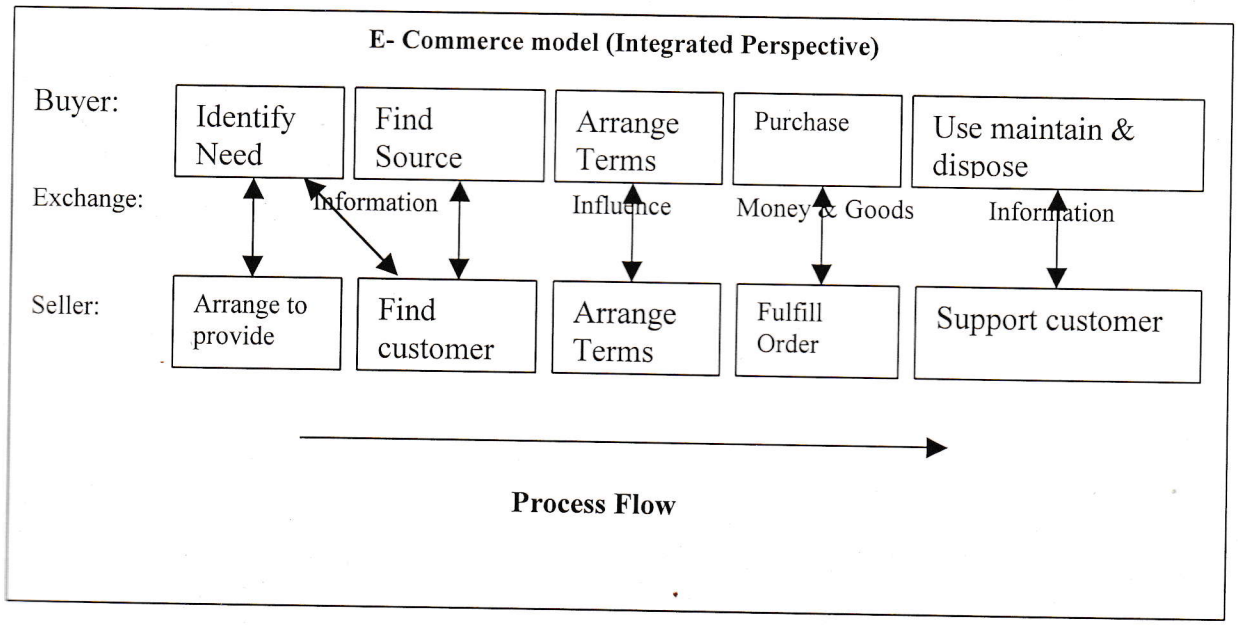
Refer the following figure, where it is seen from a buyer-seller perspective and using a life cycle model, Electronic commerce can be used in all the phases of a commerce transaction:



With the penetration of computers and recently Internet, we saw a major change in our daily life. Initially organization were using internet to provide information about their products, but due to the exposure of internet now internet or web sites are not used as a mere bulletin board but a platform to sell their product and improve their brand positioning. Due to the less time taken to process the transaction and cost reduction, every economical to sell their products through Internet.

We should look into the few elements of a real physical shopping mall. Every shopping mall has a site or address for e.g. Any market has specific location, which we call it, a site, it includes building, basic services like electricity needed to setup a mall and shoppers to setup and operate their business.

We have seen that mall is made up of sites, merchant, shoppers, product and services, which are physically, present. Like sites places where shoppers can stop is physically present. But an online mail allows

merchants to showcase their products and services and enable immediate purchase globally over the Internets World Wide web.

Electronic commerce offers unlimited growth potential for existing businesses and exciting opportunities for establishing new ones. Lets consider the following advantages that could affect the business.

1. **Lucrative market**

   - One can have access to a growing global market.
   - Consumers are generally affluent and technically literate.
   - Electronic shopping will be widely used by the next generation of consumers.

2. **Dynamic delivery**

   - Electronic vehicle permits information delivery and business responses in a customer's chosen environment.

- Captured statistic enables profiling of shopper demographics preferences and activity within the site, to develop more effective merchandising strategies.
- Information is always complete and up-to-date.
- Merchant can tailor the product line to seasonal and market requirements, without moving merchandise.

3.Preferred environment

- Provides shoppers with a private location, accessibility, and fun. The dynamic nature of the site also invites shoppers to return often.

4. Economical

- Low cost for start-up as compared to opening a physical site .
- Boundary- free, since the world market can reach a single site.
- Low requirements of support staff reduce personal costs.

Net.Commerce is a product that enables you to create dynamic, secure, electronic Web sites. The following highlights the features offered by Net.Commerce.

Strategic Site and Data management

- Adaptable site structure: create single stores or mails.
- Access to the store's databases is restricted to administrators who have been given a password. Shoppers protect their information by providing and using a logon ID and password when they register.
- Flexible Market Targeting.
- Business-to-business or business-to-consumers direct marketing, through the use of shopper groups and discounts based on volume purchases.

- Different Web pages can be displayed to different shopper groups that you define.

Powerful Data Management

- Powerful DB2 Universal Database (It is supplied with Net.Commerce).
- Compatible with Oracle databases, through ODBC support.
- Products are linked to categories to help organize inventory and guide shoppers through the store.
- Contains advanced price calculation functions that support discounts and group rates.
- Advanced shipping functions allow you to specify shipping options.
- Dynamic Web page generation, through the use of templates that one can create with the Template Designer. Templates use database field tags to pull information directly from the

database , thereby generating many different Web pages from single template.

Advance Server Functionality

- Catching of frequently accessed dynamically generated pages improves system performance and minimizes waiting time.
- A staging server can be used as a designed server to test changes to the store before releasing them "live".
- Advanced Web server capability is provided with the Domino Go WebServer.
- The security of all transactions is ensured through the deployment of the SET protocol, an industry-wide Internet standard.

Ways to Create and Customize a Store

- Various methods available for store creation. One can use the Store Creator to quickly create basic store, use the Site Manager and Store

Manager to create a store based upon a supplied sample.

- Otherwise follow the supplied tutorial to learn how to create a store by using the Site Manager and Store Manager, and by creating your own Net.Data macros.

- There are overridable functions available to customize the shopping flow. You can modify these according to preferences, and use them to link to legacy systems, such as for inventory management.

- You can also create new overridable functions and add them to the system.

Interactive Catalog

The newly introduced product adviser in Net.Commerce provides tools to create an interactive catalog that allow shoppers to easily find products that

meet their needs, even if they have little product knowledge.

Net. Commerce prerequisites

Before using Net.Commerce, you require a basic knowledge of the following requirements:

Knowledge requirements

To install and configure Net.Commerce, you require a basic knowledge of the following:

- Your operating system
- The Internet
- Web server operation and maintenance

To create and customize your store or mail, you may also require an understanding of the following, depending on the type of customization you Intend to perform:

- Hypertext mark-up language (HTML) and Java scripts. (To change the appearance of the pages that is seen by your shoppers.)
- Structured Query Language (SQL).

- To read information from the Net.Commerce database.
- C++

  To create overridable functions for writing to the database and interfacing with the existing system you may be using.
- DB2 Universal Database or Oracle

  To add new tables to the Net.Commerce database and to perform database tuning The graphical software packages used to create your stores multimedia content.

- Net. Data macros

  To change the appearance of pages that are seen by your shoppers, and the information from the database that is imbeded in the pages. Net.Data macros contain HTML tags and SQL statements, as described below, and Net.Data statements to control the flow of execution.

Silicon Graphics, Global Manufacturer of high-end computing equipments uses Net.Commerce to show his presence in the World Wide Web (Internet). It provides information to its customers about its products and prices. As a marketing tool it provides communication between customer and sales office.

It uses the Internet to reach the customers. As a sales channels company it books orders online for its product and process the order at a faster pace. As a support line it make available software patches and frequently asked questions and answers to provide immediate technical support. This improves the functionality of the company, another example of Banking on the net introduced by Citi bank to provide easy and faster way of financial transaction.

For the exchange of commodity or service the trade and commerce needs information gathering, processing, manipulating and its distribution. Today, the velocity of information processing and dissemination,

determines the speed of real commerce. Computers and networks, by virtue of their great speed, are creating electronic marketing with the potential to be more efficient in finding and interacting with customers, communicating with trading partners and developing new products and markets.

On the other hand, Local Area Networks (LANs), and enterprises wide intra-networks have resulted in raising expectations for data access, communication and productivity throughout the business world. On the other, low cost high-speed open networks inter-connected as a single networks, commonly known as the Internet, have kept pace with the requirements through the establishment of National Information Infrastructures, with high-speed National Information Highways being their main backbones.

Widespread access to networks communication tools includes electronic mail (E-mail), online service, and Web browsers have created new awareness of the commercial potential of the Internet. While the Internet has

already been successfully used for marketing, advertising and some commerce much of technical potential remains to be commercially harnessed.

EDI is still the proven application for e-commerce, all through it is only one of the ways of doing electronic commerce processed, which unusually means manually keying the data into MIS system.

EDI substituted paper transaction with electronic transaction thus streamlining the procedures and improved efficiency and productivity.

Some advantages of EDI are:

1. It eliminates the delay associated with making documents.
2. As the data not repeatedly entered the chances of error are reduced.
3. The time and costs are reenter the data is saved.
4. It enhances or improves the information flow as the time delay is reduced.

5. It generates functional acknowledgement whenever an EDI massage is received. Thus it ensures the transaction.

Receiving computers without any human intervention or interpretation can immediately process EDI message. Therefore EDI is best suited and areas were large volume of repetitive standard action at right operating margins is done.

It also gives competitive advantage by significantly improving productivity at low operation at costs. At is minimizes the production cost, the manufacturing industries have using standard EDI.

Electronic commerce is being conducted over the Internet in two ways - first EDI and its present form over the Internet and second one is World Wide Web, as market place where vendors can offer goods, information and where purchaser can browse, see and visualize before you can buy, the means of distributing

public information the web has been successful in its goal.

The web consists of two components - Web servers and web browsers. Web Server runs on specific hardware platform and operating system and store documents in HTML. All web servers and browsers communicate through common protocol, Hyper Text Transfer Protocol.

With HTML and HTTP uses may not know file names, formats or location of information resources but clicks to navigate him through the vast storage of information. Now a days many corporate use WWW service to distribute information to their own units and their trading partners on Internet.

The Total value of goods and services traded through electronic media, is not very significant today but expected to pickup in next five years INPUT projection says the value of world wide goods and services traded electronically will grow at the rate of 36% annually.

Thus Electronic Commerce over the Internet will be a dominant from of trading at the turn of the century. The CTR reports on electronic commerce suggest that the hurdles for electronic commerce include security, reliability.

Chapter-3

STRATEGIES FOR ELECTRONIC COMMERCE

Any strategy you considered for integrating electronic commerce in your business should focus on information – not only its collection and dissemination , but also its use in marketing and as a salable product in an of itself. The concept of the virtual value chain is important to electronic commerce precisely because it defines ways to incorporate digital information into regular business processes.

Businesses involved in traditional markets, such as manufacturing, can readily make use of information to improve their internal processes and more importantly, improve their processes dealing with customers.

The electronic commerce is more than closing a sale and transferring funds. Maintaining contacts with your customers and seeking out new potential customers is important to your business. Supporting your customers

once the sale is completed is equally important . each of these processes depends on information , and much of this information can either be acquired or processed using the Internet.

How you integrate this information with your organization's processes depend upon a number of factors, starting with how well you can exploit the Internet and its technologies and including the match between those technologies structure, and your perception of the market space.

Evolving with the Internet

Business on the Internet will continue to develop as technologies on the Internet evolved, and that evolution seems to be progressing at an ever-increasing pace. But it helps to recall that these are not earth - shattering technologies that are being developed at the rate of one a week . in many cases ,the technologies are refinements

of existing ideas that had originally been proposed or developed for smaller networks LANs (local areas networks).

What the Internet has done is bring three important new views to the market are the technologies. First it has encouraged the use of open standards, available for implementation by anyone who's interested. Second, the Internet is the largest network accessible around the globe and possibility the one network accessible by the widest variety of computers. And third, the Internet is becoming the common basis for introducing products and technologies to a greater market.

Tracking innovations related to the Internet may seem to be a time-consuming and resource -intensive task, but number more so than tracking any other information system technology , such as those related to client/server or object-oriented programming . a god course to follow for tracking Internet technologies is to

watch what the standards bodies are doing , and to maintain a flexible organization so you can respond to the changes you observe.

The standard landscape

The Internet has long had a series of committees , mainly composed of volunteers , who carefully guide proposed technologies through a standards process. These committees, which form a significant part of the Internet Engineering Task Force (IETF), have guided a number of important protocols through the standards process to encourage their implementation on the Internet. Protocols such as the TCP/IP protocols for Internet transport, SMTP(Simple Mail Transport Protocol) and POP (Post Office Protocol) for electronic mail , and SNMP(Simple Network Management Protocol) for network management are all a direct result of the IETF's efforts.

Other Standard bodies, such as the International Telecommunications Union (ITU), the American National Standards Institute (ANSI), and the Institute of Electrical and Electronic Engineers (IEEE) , also have influence; but the IETF is the one body originally form to guide development of the Internet.

You should realize that the IETF has not been granted this role by any government or international body, and it is a more informal standards body than formal bodies such as the ITU or ANSI. In recognition of this status IETF publishes its standards as recommendations; it has number authority to require vendors to implement the technologies. Even though the IETF standards may seem voluntary, they have the power of the market place behind them - if vendors want to tap the large market known as the Internet, they need to ensure that their products will work in tandem with other products used on the Internet, which , inturn , usually means adherence to IETF standards. And the

easiest way to ensure that is by adherence to the IETF voluntary standards.

But the networking market has seen increasing fragmentation with regards to standards over the past few years. As the Internet has grown and become more of a market for consumers and businesses alike , companies have sort to further influence the standards process to give them some kind of competitive advantage. Even the informal standards bodies, such as the IETF, are being subjected to these pressures.

And as these markets grow, businesses are grouping together to form ad hoc groups, or consortia to push forward their own standards. Some of these groups include the Object Management Group (OMG), VRML forum, and the Java Developer Connection, to name only a few.

Often , because of the influential standing of the IETF , these ad hoc groups (or individual companies) will

submit their proposed standards for consideration by the IETF. If adopted the IEFT recommendations provides an added seal of approval. As a benefit to most businesses , if these standards make it through the IEFT process, you can be certain that the protocols are to be as open as possible .

One reason for the rise of the ad hoc standards groups has been the increased pace of development contrasted with a longer review cycle - many vendors feel that standards groups like the ITU, IEEE, and IETF take to long to prepare and approve standards. The IETF is the fastest of the organizations releasing standards, and it does that by basing standards on working implementations.

The fact that the IETF has had to devote itself to turning out protocols that work , rather than ones that are defined in every last detail for every possible situation , should give you an indication of the pace of

development , as well as the fight by businesses to controls standards for their own advantage.

The pace of standard development is relative. The IETF does it faster than other standards bodies but it's still not fast enough for companies such as Netscape, Cisco, and others. In the current state of affairs, the longer a standards body takes to approve and promulgate a standards, the wider is the window for companies to develop their own proprietary standards and for buyers to establish standards by virtue of their purchases.

Flexible organizations

These days one of the obvious truths about the Internet is that it's always changing. The dynamics of the working with, and developing for, the Internet is very different from what many businesses are used to. But that does not mean that your business has to continually change as fast as the Internet.

It doesn't even mean that your business should continually change. The standards business practice of analysing a proposed change and making sure that it is truly a benefit (either short-term or long-term) applies to the changes related to the technology as much as it does to changes based upon evolving market conditions.

The key is that by being flexible and prepared for change, your business will be better prepared for the future opportunities afforded by the Internet and electronic commerce. And the key for being ready to adapt to change appropriately is information sharing within the organization.

Businesses with a flat structure are better suited to information sharing, making it easier to benefit from electronic commerce. Flexible organizations deal with information differently than more traditional, hierarchical organizations. They realize that information has more value when it's shared. Think of a simple case of customer information in the software business - it

can come from technical support, market surveys, letters, meetings at shows, and more.

But if that information doesn't get to the right people in the company, it's worthless, and who are the right people? Well, they may be different each day-one day it might be an engineer working on some code, the next day it might be a sales engineer, or the vice-president of marketing. If the information isn't shared, it might as well not exist.

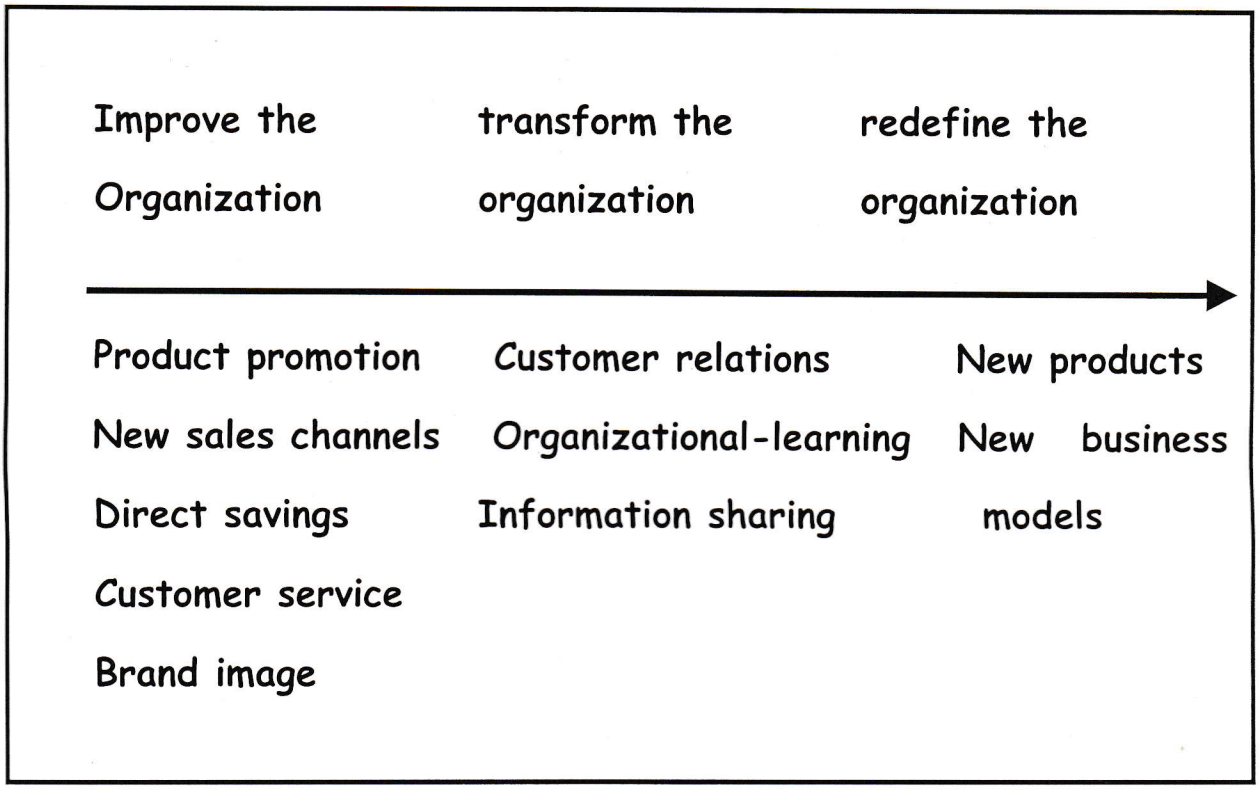
Creating a Framework for Business Value

There are number of locations in any business process where you can add value. But how you add value affects, and is affected by, your business and how conducive it is to change.

Why is change so important? Because almost anything a business does to benefit from electronic commerce is going to involve some type of alteration the change might be something as simple as improving a

process by electronically instead of manually. But embracing the virtual value chain as a way of doing things, or extracting maximum value from the marketplace, requires more-usually a transformation of your business, or its redefinition.

Changing your business for electronic commerce



Using Electronic commerce

You can improve almost any aspect of your business processes to take advantage of electronic commerce. For instance, you can create better product promotions to improve sales by adding multimedia to Internet presentations and offering more detailed product descriptions on your Web site. It's a fundamental precept of marketing to target information based on customers' backgrounds, or some other demographic or psychographic feature.

You can also design your Web site and e-mail services to incorporate information from databases to tailor information to individual clients instead of demographic groups. You might even establish the Internet as a new sales channel, perhaps by tying sales directly to an online catalog and order form; or use the Internet as a transmission medium to rely purchase orders to your suppliers.

Using the Internet as a communications medium can reduce your direct costs of doing business - for example, in a business-to-business environment, purchase orders can be relayed in electronic form, eliminating the need for re-keying crucial information.

Product delivery via the Internet is also possible, as long as your product is digital; software can be delivered to the customer and registered over the Internet, eliminating the need for printed documentations and packaging. Getting products and product upgrades to the customers electronically, either directly or via a distributor, can cut the time to market for digital products. Putting an electronic catalog on line, instead of printing and mailing it, also reduces the time it takes to get product information to your customers and distributor.

Obtaining information about customers and their needs has a direct impact on business practices because of the way it positively affects product design and

planning, thereby giving you a market advantage. Further -more, by putting frequently requested information in a FAQ document or searchable database on the Web, you can also use the Internet to simultaneously improve your customer support while reducing its costs. And, of course, don't overlook the value that using the Internet adds to your corporate image -after all, the Internet is considered cutting-edge technology and your business will be considered forward thinking by offering goods and services over the Internet.

Electronic commerce on the Internet also affords you opportunities to transform your business as you shift from the value chain to the virtual value chain. For example, customer relations can be changed from one-way asynchronous communication to two-way interactive communications.

Instead of relying only on telephone conversation restricted to working hours and subject to telephone tag, you can use the Web or e-mail to exchange

information and opinions between customers and staff. But, remember this will profit your operations only if your organization is structured to exchange information freely, and the members of your organization actually understand that information is both freely accepted and given.

Your business can collect data about customer preferences and habits by observing that what they do at your Web site; you can use this information to customize your offerings and services. To do this, offcourse, your company has to have tools in place both to collect data in the organized fashion and to analyse it for making decisions. Industry, net and AMP connect are collecting data on customer searches and information requests, and using it to refine their offerings and plan new product and services to meet customer needs.

Recall that when it comes to creating values in a virtual value chain, five different activities are involved-gathering, organizing, selecting, synthesizing, and

distributing information. Because you can generate new products or value using each of these activities at any of the points along the value chain, you can, in effect, create a value matrix, where the intersection of each information related activity with each step in the value chain is another opportunities to add value.

Using the Internet for commerce will also offer opportunities for new products and new business models, often within this framework of the virtual value chain or dealing with the marketplace.

For example, it's entirely possible that Fruit of the Loom could charge another clothier for access to a channel derived from Activewear Online, much in the same way that SABRE become a source of revenue for American Airlines even after it opened up the system to offering from competing airlines.

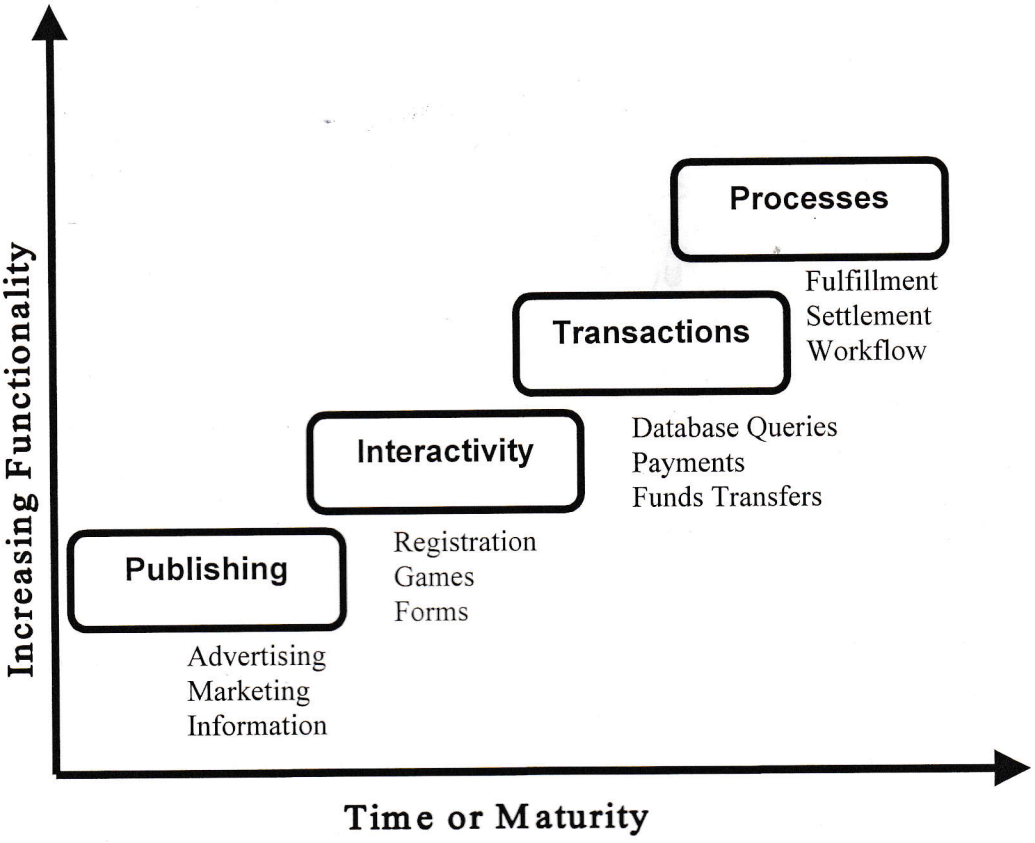
Or take a look at the Federal Express' new BusinessLink service, which ties their shipping and

tracking system with electronic processing of orders for participating merchants; they've linked together two important pieces of the sales cycle (ordering and shipping), not by eliminating the middleman, but by using new (electronic) channel to forge the links between customer, merchant, and shipper.

Keeping Pace with the Internet

The Internet is not a static environment. To the contrary, it seems to have introduced an even faster pace of change to the software world than ever before. As more options become available, so too will customer expectations, and the competitive landscape will continue to change. Businesses conducting electronic commerce on the Internet must also be prepared to change as the technologies and markets change, moving from static data publishing, to increased interactivity, to real-time

transactions, and finally to a merging of business processes between business partners.



Try to think of the Internet as a new interactive medium of communications when you're planning to incorporate it into your plans for electronic commerce. This means moving beyond the static display of

information, which is the way, many businesses first used the Web. Static information may be of some business value, but the greatest opportunities lie in other, more interactive users of the Internet.

The increasing ties between multimedia and the Internet are just one example of adding interactively to Web-based bus. In most cases, business sites offering only static published data about products number longer satisfy the needs of their customers. Interactivity at business sites will continue to increase, tying technologies like Internet telephony and videoconferencing to Web sites .

While interactivity, especially via customer registration and form-based transfer, helps the growth of electronic commerce, transactional processing is even more important. Tying information presented on the Web and information exchanged with the customers to corporate databases, and moving some of the data to

payment systems such as **EDI**, **ACH**, or **EFT**, all further integrate your processes for efficiency and speed.

This can give you a competitive advantage. You'll also find opportunities to link your business processes for more efficiency. As partnerships and other business associations expand on the Internet, eventually you'll see the sharing of business processes as well as information. These need not be long-lived associations, as the current business environment seems to be pushing business to form short - term associations to get the job done in a dynamic marketplace.

The business market

The business-to-business market is even larger than the online consumer market. BIS Strategic Decisions has estimated that the amount of merchandise purchased electronically by business through EDI, e-mail, and proprietary order entry, is 100 times greater than that purchased electronically by consumer through home

shopping, online commercial networks, and home bill paying.

Just as with the consumer market, this is expected to grow significantly during the decade. Thanks to the low cost of Internet access, and the popularity and versatility of the Web, small-sized and medium-sized businesses will be able to conduct electronic commerce that previously was limited to larger corporations, further enlarging the market.

Business-to-business use of the Internet, especially for commercial transactions, differs from the way a consumer conducts business on the Internet. Business buyers are typically time-constrained to accomplish a job or task, having little time to surf the Internet to find what they need.

On the other hand, consumers usually don't shop with such a sense of urgency, and they can wander through the Internet looking at more sources and

choices. When you're dealing with business customers, you ought to make it simple for them to search for items and place an order.

Chapter-4

THE FUTURE OF ELECTRONIC COMMERCE

Electronic commerce on the Internet is still at an early stage of development. Many of the technologies that form infrastructures are still experimental or at least not available in the large scale required by the Internet. Also keep in mind that all sorts of interested parties will influence the evolution of electronic commerce.

Technologies

Because electronic commerce covers so many different aspects of communications and networking, quite a few technologies have an impact on electronic commerce. The following presents pointers on what to look for, and what you will find happening, in the most important of these technologies.

The Internet vs. Private Nets

So far, the Internet has been able to meet the demands of its users. But 1996 was the first year when some began to question whether the Internet was capable of scaling up further, and whether it could reliably meet the communications demands that will be placed upon it. Highly publicized service outages from respected **Internet Service Providers** , such as Netcom, AT&T WorldNet, and America Online, have served to raise the possibility of failure of part of Internet , bringing into question the robustness of the Internet for business uses.

Protocols are being developed to allow Internet users to reserve bandwidth for applications, and for prioritised traffic. For example, the Resource Reservation Protocol, or RSVP , has been developed to help reserve bandwidth for multimedia transmission such as streaming audio and video and videoconferencing; this same protocol can be used to reserve bandwidth for

other applications as well , such as priority e-mail for **EDI** messages or **FTP** for file transfers. Routers supporting RSVP are only now becoming available; it'll be some time before a great deal of the Internet routinely supports RSVP.

ISPs are also starting to offer their own end-to-end networks that cross the United States independently of the Internet's main backbone, but still link to it is needed. Aimed at businesses, these networks can be used to speed along business traffic with minimal impact from increased consumer Internet traffic. These private commercial networks also make it easier for companies to form **virtual private networks** (VPNs) with added security, replacing private corporate networks that use leased lines.

Using these commercial networks can be less costly then leased-line networks, even with the additional rates incurred. Private networks also offer another advantage: they link to the Internet, allowing for communication

with other partners and customers without requiring special set-ups.

Because the Internet is an internetwork, or a network of networks, it has both weak and strong links. You should shop around for the best service provider, one that offers service and transmission quality guarantees, good technical support, and is accessible from many locations around the world. But in the absence of service guarantees from providers, selecting an ISP can be a tough call.

As opposed to private networks, traffic can be switched from carrier to carrier as it travels over the Internet, so single ISP's guarantee of service cannot be expected to encompass the entire Internet. Nevertheless, work is being done to make it easier to choose an ISP. Informal ratings of ISPs coupled with service guarantees from the ISPs are the start.

Security

A great deal of work is being done with **public key cryptography**, and this will continue to lead in the marketplace. Nevertheless, there is no single dominant solution in a wide field of options and proposals.

Part of the problem with the security market is determining at what level of computing and networking to insert security measures. At the moment, solutions are available for use at the application level (such as security protocols for e-mail and the Web), at the session level (**SSL**, for example), and at the lower levels in the network (securing IP packet - level transmission on the Internet, for instance). De facto standards are evolving rapidly; SSL for protecting data transmitted over the Web, and **S/MIME** and **PGP** for protecting e-mail messages.

Many developers of security products have been focusing narrowly on either their individual applications

or on a limited range of applications. As we see more applications using cryptography for electronic commerce, we're faced with having to manage multiple **digital certificates** in different formats - at least until some standard is developed. Initiatives like **CryptoAPI** and Intel's **Common Data Security Architecture** (CDSA) are an attempt to provide layered security services that make it easier to share encryption algorithms and digital certificates between applications rather than write the required software from scratch.

Initially, CryptoAPI was meant for computer running Microsoft Windows NT or Microsoft Windows 95, while Intel aimed to provide more of a cross-platform solution with CDSA. Eventually, you can expect the two systems to interoperate.

Infrastructure

Although the Internet's infrastructure has evolved over 20 years, it has remained fairly decentralised. Many

of the technologies covered in this report have yet to establish the type of robust, secure, easy-to-access, and easy-to-use infrastructure that is required for daily business use. Notable among these components still in the embryonic stage are electronic payment systems, digital certificates, and **public keys**.

For past few decades, banks and institutions that offer credit cards have created national and global electronic infrastructures for **electronic funds transfers** and credit card authorizations. These infrastructures operate over private networks and, at least for the near term, are unlikely to move to the Internet. But these same institutions are opening gateways between their services and the Internet, making it easier for businesses to contact to their systems. These financial infrastructures are reaching out to a large customer base and offering new services by embracing the Internet as another communication medium, thereby extending their own infrastructures.

Financial institutions are extending their private networks to interface with the Internet. New commercial endeavors are linking to existing financial systems, but lack of interoperability remains a problem.

Digital cash, in particular, suffers from infrastructure problems because, while it's intended to be the digital equivalent of real cash, each bank issues its own electronic cash **tokens** that are not compatible with systems used by other banks. Worrying about different foreign currencies when you travel from country to country is bad enough, but worrying about exchanging digital cash between banks even within the same country (depending on which merchant you buy goods from) would be intolerable.

This incompatibility of digital cash systems will remain a problem for consumer-to-business commerce for next few years at least, but it won't necessarily be a problem for business-to-business commerce. EDI is a standardize way of transferring purchasing and financial

information, one that is usually negotiated between business partners before any transactions occur. (Of course, the time required to set up EDI has been one of the reasons for its rather limited usage.)

This approach of negotiating procedures will extend to other businesses as they use EDI over the Internet, and these businesses are likely to follow similar procedures with payment systems, intermediaries such as Nets Inc. will continue to provide standardize methods of handling financial transactions between buyers and sellers.

Digital certificates and **public key** systems have number pre-existing trust network comparable to existing financial infrastructures. Everything needed for the distribution and verification of digital certificates is being built from the ground up. Commerce firms like CyberTrust, Nortel, and Verisign are issuing digital certificates to individuals as well as businesses, and they

have been ramping up their efforts with electronic commerce on the Internet in mind.

However, a fully developed hierarchy of **certificate authorities**, for either the United States or globally, has yet to be established. Furthermore, inter-operability between certificates authorities is not guaranteed, as more than one public key algorithm can be, and is, employed.

Other problems arise as public key pairs are issued. The user is the ultimate lynchpin in securing the **private key** of the pair. If the owner of the private key loses the key, or if the key is stolen or compromised in some other way due to the owner's negligence, the key pair must be revocable. The infrastructure required to do this routine, fast manner has yet to be developed. And there are questions as to whether or not the proposed hierarchy of certificate authorities can be scaled up to handle millions of digital certificates and key pairs as electronic commerce becomes mainstream.

Online Catalogs

Online catalogs are likely to continue to be an important part of electronic commerce, for both consumer-to-business commerce and business-to-business commerce. Dynamically generated custom catalogs and searches drawing data from corporate database will be crucial, and will be the standard way of doing things for some time.

A number of software vendors are offering many different ways of creating and maintaining online catalogs. But very little about the catalogs themselves is standardized. In fact, many may think that the catalog standardization is not necessary under the current conditions. After all, customers visit a company's Web site, find out details about the products and services it offers, and decide if their needs will be met. When they visit a different Web site, things might be done a little differently, but the procedures are generally the same.

But imagine the benefits if customers could collect data about related products from a number of different catalogs, and then compare the products within their own catalog. That would be possible only if the logic of the catalog and the form of the product data were data standardized in some way. Intermediaries could also offer the service of creating custom catalogs on a scheduled or as needed basis. In fact, standardizing this information would also make it possible for customers to use software agents that would automatically query different catalogs, collect product information and present it as a recommendation to purchase or a comparison of new offerings. Researchers and developers have started to create and test cataloging standards so online catalogs will be interoperable.

Electronic mail

Although the World Wide Web has received a lot of focus in this report, other Internet - based services, such as electronic mail, can be equally important to

mail more robust and suitable for handling non-repudiation and data transfer through the Internet.

Microtransactions

Although **Microtransactions** and micropayment schemes, they are both certainly technologies that are still in their infancy. Limited pilot projects are now underway to test some of the technologies proposed for micropayments.

CyberCash, with its CyberCoin software, is the first company to offer a commercial system that support microtransactions. Expect to see Cybermediaries who will handle the processing of microtransactions for businesses. ClickShare is an example of such a Cybermediary, accumulating charges on information that's purchased from electronic publishers located at their site. Further Cybermediaries will probably not restrict their clients to a single Web site, although

consolidation at a site can be a good move for marketing and advertising.

Software Agents

One of the hot, and perhaps over-hyped, technologies advanced over the past few years has been software agents, self learning programs that users can instruct to perform acts on their behalf. A variety of uses of software agents have been proposed. Two of immediate interest to electronic commerce are retrieving select product information and negotiating the sale of an item.

An Internet software agent developed by Arthur Anderson Inc. has already demonstrated the first task; their software agent accesses data from various Web-based audio CD dealers to find the best price for particular selection. Similarly agents could be constructed to visit numerous online catalogs, extract information on selected products, and present that data

to the user in a personalized buyer's catalog. Sales negotiations are a more complex process, and agents capable of performing such tasks are still in the research phase. Much of the work is being done at Standard University and CommerceNet.

Smart Cards

Although Smart cards have been around for more than a decade, they have not yet seen widespread use. Pre-paid or stored -value cards are currently in use for public telephones, tollbooths, and mass transit systems in the United States and overseas. But the real impact of electronic commerce, especially tied to Internet, will come with development of Smart cards that include an embedded microprocessor. These Smart cards will not only be used for Internet-based purchases, but will also be able to serve as electronic purses that can be used for everyday purchases at stores. The technology to support electronic commerce using Smart cards is still

being developed, and it is being field-tested on a limited bases.

Smart cards have yet to make a significant impact on consumer markets, but the pieces to make that possible are now starting to be put in place. The personal ATM is a countertop device about the size of human hand , which lets the consumer use a phone line to download money into Smartcard Modem that allows users to use a phone line to update personal Smart cards .

Institutions

Technology alone doesn't provide answers to all of the problems. Whatever develops will have to function within society. Making electronic commerce really work will depend as much on what our governing and financial institutions do, as it will on the technologies that develop.

Centers of the trust

Trust between buyer and seller is an important element in all-financial transactions, but it is difficult to establish in electronic commerce. When businesses conduct commerce with one another, reputations can be checked and verified independently of the Internet. Business-to-business deals that are electronic extensions of real- world deals already have an element of trust that's built upon previous negotiations and transactions.

The same trust is more difficult to establish in consumer-to-business commerce on the Internet. Now take that a step further for online, commercial transactions - how can one get a sense of a potential business partner from its electronic storefront or from an e-mail exchange? If all a purchasing manager knows about supplier comes from what can be seen on the supplier's Web site, he or she has every right to be some-what suspicious.

On those occasions when the Internet is the sole link between parties , where the transaction is abstract (no signing of a paper check or handling over of a receipt, for instance),more has to be done to establish trust in the relationship. Digital certificates and digital signatures may well handle some of this. Another possibility is for customers to deal with Internet merchants who are certified by a neutral, trusted party. E-trust is the first such attempt at certifying trusted merchants on the Internet, with a full-scale program planned for 1997. other organizations will join e-trust before long.

Even with certifications, merchants and other Internet-based sellers will have a difficult time establishing the same level of trust with a buyer as bank enjoys. At least for consumer based electronic commerce, you may well see banks leveraging the public's trust by offering them more and more commercial services.

Governments

When it comes to money and commerce, governments always have something to say. You have already seen that government agencies are struggling to balance an individual's right to privacy with the need to monitor illegal actions , such as money laundering . The United States government's attempt to require the Clipper Chip in new communication devices was originally defeated by its an ongoing battle with new variations.

Governmental restrictions on importing encryptions software and hardware have eased slightly , but still the global market place from being a level playing field . Key escrow, having the government or a trusted third party keep a master encryption key, may be a solution but it has not yet received popular support from developers or other nations.

Final market forecast

As a final glance into the future , here's a brief look at the markets for electronic commerce .

The consumer-to-business market will continue to grow , driven by purchases of home computers and other Web-enabled devices ,as well as developments in new media for delivering increased bandwidth . For example, work is moving ahead on cable modems, Digital Subscribers Lines (DSL), satellite access , and even Asynchronous Transfer Mode (ATM) to the home . Consumers acceptance of electronic commerce will increase when it number longer requires the use of a personal computer; with electronic commerce extend to non-computer devices such as televisions, automatic teller machines, point-of-sale terminals, and other devices linked to Smart cards. These efforts will take us into next decade.

In the business-to-business market , short-term partnering and more suppliers association will drive the

need for faster ways of conducting supply and financial transaction. EDI on the Internet will have its place , if only because of the installed base of EDI and its prior integration with business practices . but other systems will be equally important , as corporate purchasing cards and other electronic systems of payment are integrated with business processes , either directly or through intermediaries .

Chapter-5

EVOLUTION OF E-COMMERCE OVER PAST FEW YEARS

Over the past few years, we have seen a number of intertwined trends, which has contributed to the success of e-commerce. One of these has been increased deregulation.

In terms of allowing a greater variety of institutions to enter businesses and markets which were previously restricted. This has allow more competition for instance in the infrastuctural areas of telecommunications, hardware etc, as well as within traditional industries like finance, were the demarcations between banking, brokerage and insurance activities are quickly blurring.

Deregulation has also provided the impetus for globalisation in that it is now more common to find even individuals looking to conduct business with overseas

counterparts who can provide the best service and price or seeking investments in off show instruments. Lower infrastuctural costs, new -market entrants and access to global markets and all catalysts for, & in turn fueled by, e-commerce.

In terms of technological trends, some key ones over the past three years would to have the tendency towards thin client solutions, the increased mind share achieved by ERP systems & the evolution of customer relationship management. All these were underpinned by significant changes in network infrastructure as such the forging of high speed links between national and corporate networks, the convergence of distinct networks such as phones, internet and T.V and the investment by governments in ambitious IT infrastructure to remain competitive.

Thin clients allow suppliers in the E-business chain greater control and flexibility to upgrade and change there service offerings to the consumers among other

things. There is also a general trend to 'digitising' not just PCs but other end devices including smarter chips, household appliances, handheld devices, sensors - all working at higher levels of speed, security and intelligence with better interaction and connectivity to various channels.

ERP systems have supplied organisations who had the foresight to transform there enterprise processes s well as there software configurations a chance to increase efficiency and improve the quality of there decision making, which are particularly important foundations for conducting e-business.

Customer relationship management tools take this one step further, along with data mining and effective customer data base management, important in the virtual commerce environment.

Chapter-6

E-COMMERCE - PROPELLING THE WORLD TO A NEW REVOLUTION

E-commerce - Propelling the world to a new revolution.

Recently an NRI from San Francisco visited. He was mentioning how entertaining is no more a problem for him. And now a message typed on your computer, any time, can get your doorstep fresh vegetables and fruits, even the modest tomato individually wrapped. Ready to eat, piping hot, even Indian meat dishes and tandoori chicken delivered at your doorstep at the time you indicated. Long lives E-Household!

Why take the Silicon Valley? We have our Chennai Bazaar on the net delivering gifts and flowers any where in the country, at a price. Unless an executive has been living in a cave for last two years, he has heard about the revolution caused by e-commerce. Forrester

research predicts that by the end of this year, business conducted through electronics commerce will exceed $45 billion.

Electronic - Commerce like industrial revolution is set to change the whole business environment in coming years. There is much discussion and plenty of confusion on this emerging trend.

Commerce can be defined in simple terms as the exchange of goods and services, usually for money. Electronic Commerce as obvious means business transaction being handled electronically No more, the Computer is merely considered as an accounting tool, but it is a growing movement towards building business process that involves the use of computers to communicate between customer and organisation.

Business organisations are in race to capture this growing market and gain competitive business advantage by using multimedia, wireless technology, automatic

identification, internet, telephoning etc. The struggle is to create the quickest, high quality and most exciting venue for conducting business. Pundits of computer industry predict that there is going to be an incredible shift in the way companies will be conducting business in coming years.

While most integral concept of electronic-commerce may be connecting buyers to sellers, it would be a mistake to limit the scope of this technology to consumerism. In fact, major growth in electronic-commerce is and will continue to grow in business electronic transaction process.

Why is E-Commerce Growing?

There is so much noise about this technology because industry has realised the potential of e-commerce from the following symptoms:

1) No one who properly took two embraced Automatic Teller Machines (ATMs), Credit or Debit cards ever went back.

2) Customer's want expanded hours - 24 hours per day is ideal limit.

3) Customers want expanded locations - the closer it is to home the better.

4) A customer change the way business is done technology is merely facilitator.

Lure of E-commerce

In general, the more difficult and time consuming a purchase category is, more consumers are likely to prefer using Internet in place of physical means. The major products being marketed through the net are computer products, books, music, financial services, entertainment, home electronic, apparel, gifts and

flowers, travel services, toys, tickets, information etc. E-commerce is not gaining popularity because of love for computers or it is fashionable to use hi-tech method of purchase. It has got advantages, which are difficult to ignore.

- **Lower transaction costs** – if an e-commerce site is implemented well, the web can significantly lower both order-taking costs and customer service costs by automating processes.

- **Larger purchases per transaction** – Online Store like Amazon.com offers a feature that no conventional bookstore offers. Customer can read the description of a book and see what other people who ordered this book also purchased.

That is, a customer can see the related books that people are actually buying. Because of features like these, it is common for people to buy more books than they might buy at a normal bookstore

and this also provide guidance to customers to decide what else to buy same subject.

- **Access to more information** – A well-designed web site can offer customers more information than previously available. For example, Dell tracks each consignment through the manufacturing and shipping process and the customers can see exactly where their order is at any time. This is what FedEx did when they introduced on-line package tracking available to the customer.

- **The comfort** - e-commerce offers is the same luxury that traditional mail order companies introduced that is the concept of shopping from home in your pajamas.

New features that web sites offers include:

- The ability to build an order over several days.
- The ability to configure products and see actual prices.

- The ability to easily build complicated custom orders.
- The ability to compare prices between multiple vendors easily.
- The ability to search large catalogues easily.
- Larger catalogues - A company can build a catalogue on the web that would never fit in an ordinary mailbox. For example, Amazon sells 3,000,000 books. Imagine trying to fit all of the information available in Amazon's database into a paper catalogue!
- Improved customer interactions - With automated tools, it is possible to interact with a customer in richer ways at virtually no cost. For example, the customer might get e-mail when the order is confirmed, when the order is shipped and after the order arrives. A happy

customer is likely to purchase something else from the company.

- Easy process to locate relevant information-The customer is not expected to go through the bulky series of papers or catalogues or to move from one store to other to find the information or product they are looking for. Search Engines on the web site can find the information is seconds for customers.

It is these sorts of advantages that create the buzz that surrounds e-commerce right now. It means that e-commerce allows business models. There is no need for companies to incur high cost expenditure in printing and mailing catalogues, which often end up in the trash. There is also no need of adding overheads by staffing

the order-taking department that answers the phone or interacts with customers.

E-Commerce takes care of both the catalogue distribution and the order taking at nearly zero cost. That means that it may be possible to offer products at a lower price, or to offer products that could not be offered before, because of the change in cost dynamics.

Though E-Commerce is today mandatory for mail order supply companies to ensure their survival, it is unlikely to replace normal shopping mails as it attracts customer with entertainment aspect too. Still, there is little doubt that it is going to have a strong impact on our day-to-day life.

The falling costs of personal Computers, a growing installed base for Internet use and increasingly competitive Internet service providers in the market

has added on to easy accessibility. The sport of cyber café will certainly help to fuel the growth of E-commerce. It is sure that not just in some future but also in some future but in couple of years as far as business transactions are concerned it is going to be unimaginable science fiction type scenario.

Chapter-7

E-COMMERCE IN INDIA

A report on performing index ranking Internet Services Provider (ISPs) on quality and reliability of their network has placed India as number one in Asia .The growth of Internet in 'India', which exceed 3 million users in a years time, will provide a critical mass for powerful thrust in e-commerce application. Our middle class segment, exceeding 200 million will also take advantage of discounted airfares, online publications, online education as well as business-to-business transactions.

E-commerce revenues in India are expected to increase dramatically over the next three years.

This year, it is likely to total $ 30 million, with an estimated user base of one million. E-commerce is likely to account for $575 million by financial year 2002-3 while Internet user will reach more than 5 million,

making India the fourth largest Internet market in Asia. The presence of relatively small population in India with credit cards is another challenge for the growth of online purchase market. In spite of this major international giants including Yahoo, Microsoft IBM and even local vendors are trying to claim a slice in this growing market.

India to go e-commerce way

E-commerce is all set to take over the traditional form of business in India contributing to this growth are several factors. The entrance of private Internet Service Provider (ISP), which is an ideal platform for e-commerce. This so as it will provide value addition to the existing services, since the ISP business by itself is not considered being profitable. It can be made profitable by providing additional services such as E-commerce. The revenue will not come from the ISP business but from the additional services such as e-commerce.

The government has taken strong initiatives such as the appointment of a National Task Force for Information Technology and Software Development. This task force has e-commerce and the Internet as an important part of their recommendations made to the government.

The government wants to open up e-commerce without compromising on security issues to protect the small customers and businessmen. Laws to facilitate e-commerce are being formulated. Several IT organisations and banks are now gearing up to provide e-commerce solutions .

To encourage e-commerce, businesses are likely to offer discounts on purchases made online. E-commerce will also reduce the cost of marketing as business can now track buying patterns electronically.

Companies can save money on expensive surveys, which are conducted for developing new products. They can now pass on this cost benefit to the consumer. Smart cards or Java cards also play a crucial role in e-commerce.

Whatever happens, the future of electronic commerce will be exciting and full of opportunities.