<u>**Lecture Notes For E-commerece Prepared By N.K. Mohapatra**</u>
<u>**E-Commerce**</u>

The term electronic commerce or e-commerce refers to any sort of business transaction that involves the transfer of information through the internet.

By definition it covers a variety of business activities which use internet as a platform for either information exchange or monetary transaction or both at times.

E-commerce means using the Internet and the web for business transactions and/or commercial transactions, which typically involve the exchange of value (e.g., money) across organizational or individual boundaries in return for products and services.

Here we focus on digitally enabled commercial transactions among organizations and individuals.

Electronic commerce, known as E-Commerce, occurs daily when sellers and buyers use the internet to conduct business transactions. Technology makes it possible for anyone to buy or sell practically anything online.

E-commerce means using the Internet and the web for business transactions and/or commercial transactions, which typically involve the exchange of value (e.g., money) across organizational or individual boundaries in return for products and services. Here we focus on digitally enabled commercial transactions among organizations and individuals.

E-business applications turn into e-commerce precisely, when an exchange of value occurs. Digitally enabled transactions include all transactions mediated by digital technology and platform; that is, transactions that occur over the Internet and the web.

Hence, e-tailing is a subset of e-commerce, which encapsulates all "commerce" conducted via the Internet. It refers to that part of e-commerce that entails the sale of product merchandise and does not include sale of services, namely railway tickets, airlines tickets and job portals.

What is an e-commerce

E-commerce (electronic commerce) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. These business transactions occur either as business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer or consumer-to-business. The terms e-commerce and e-business are often used interchangeably. The term e-tail is also sometimes used in reference to the transactional processes that make up online retail shopping.

In the last decade, widespread use of e-commerce platforms such as Amazon and eBay has contributed to substantial growth in online retail. In 2007, e-commerce accounted for 5.1% of total retail sales; in 2019, e-commerce made up 16.0%.

E-commerce or Electronic commerce is defined as "the conducting of business communication and transactions over networks and through computers"
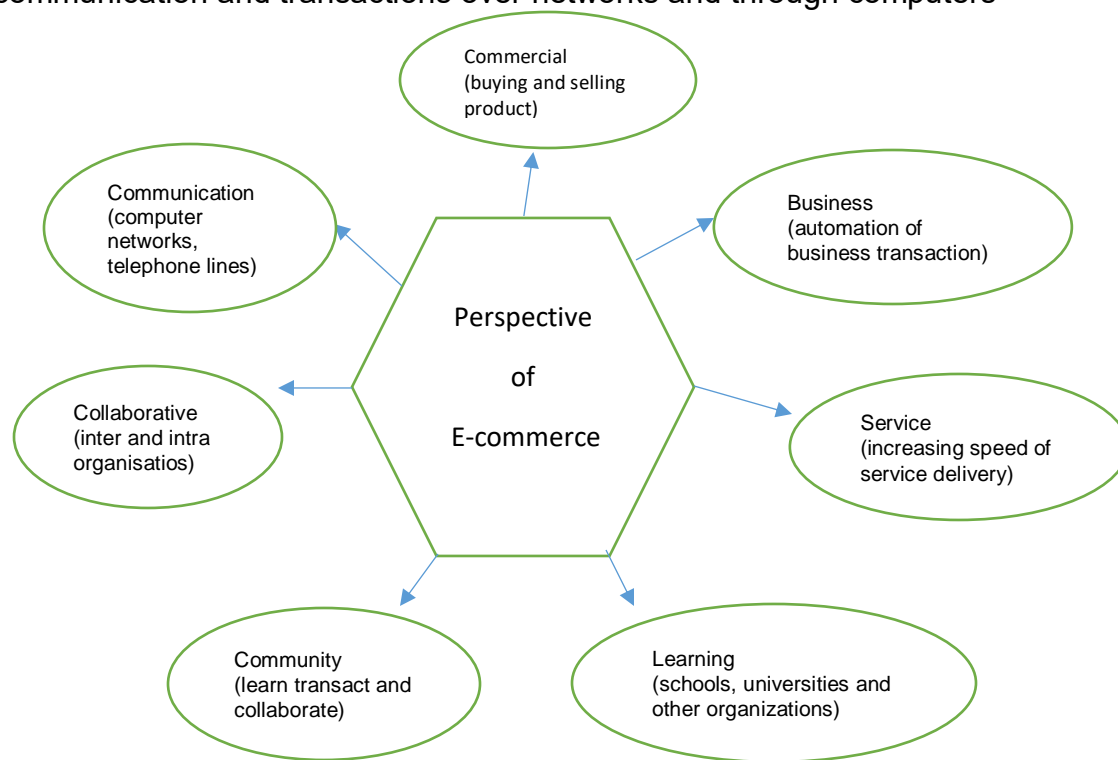
The concept of e-commerce is spanned across various dimensions. Hence different school of thoughts gave different definitions with different perspectives. Some defined it from business perspective and some defined with service perspective.

E-commerce can be defined from various perspective as

- **Communication perspective**:
  From Communication perspective, e-commerce is the delivery of goods, services, information or payments over computer networks, telephone lines or any other electronic means.
- **Business perspective**:
  From a business perspective, e-commerce is the application of technology toward the automation of business transactions.
- **Service perspective**:

From a service perspective, e-commerce is a tool that address the desire of firms, consumers and management to cut service costs while improving the quality of goods and increasing speed of service delivery.

- **Commercial(trading) perspective**:
  From a commercial perspective, e-commerce provides the capability of buying and selling products, services and information on the internet and via other online services.
- **Learning perspective**:
  From a learning perspective, e-commerce is an enabler of online training and education in schools, universities and other organizations.
- **Collaborative perspective**:
  From a collaborative perspective, e-commerce is the framework of inter and intra organizational collaboration.
- **Community perspective**:
  From a community perspective, e-commerce provides a gathering place for community members to learn transact and collaborate.

Introduction to e-Business

E-business or Online business means business transactions that take place online with the help of the internet. The term e-business came into existence in the year 1996. E-business is an abbreviation for electronic business. So the buyer and the seller don't meet personally. It includes all aspects of e-commerce. With the help of e-business solution the companies have succeeded in developing their technology and increasing their turnover.

In today's world, we are exposed to various forms of e-Business. Since its emergence, it has grown by leaps and bounds. Some predict that it may very soon overtake brick and mortar stores completely. While that remains to be seen, we cannot ignore the immense role it plays in the current global economy.

E-business is frequently used interchangeably with E-commerce.

Some people use the terms "**e-business**" and "**e-commerce**" interchangeably, but they aren't synonymous. To put it simply, **e-commerce** refers to buying and selling online, while **e-business** encompasses all **business** conducted online. **E-commerce** can be viewed as a subset of **e-business**.

(Examples:Email marketing to existing and/or prospective customers is an e-business activity. It electronically conducts a business process—in this case, marketing).

Features of Online Business

Some of the features of Online Business are as follows :

- It is easy to set up

- There are no geographical boundaries

- Much cheaper than traditional business

- There are flexible business hours

- Marketing strategies cost less

- Online business receive subsidies from the government

- There are a few security and integrity issues

- There is no personal touch

- Buyer and seller don't meet

- Delivery of products takes time

- There is a transaction risk

- Anyone can buy anything from anywhere at anytime

- The transaction risk is higher than traditional business

Electronic business (e-business) refers to the use of the Web, Internet, intranets, extranets or some combination thereof to conduct business. E-business is similar to e-commerce, but it goes beyond the simple buying and selling of products and services online. E-business includes a much wider range of businesses processes, such as supply chain management, electronic order processing and customer relationship management. E-business processes, therefore, can help companies to operate more effectively and efficiently.

Categories of E-commerce Application

E-commerce system include commercial transactions on the internet but their scope is much wider than this. They can classified by application type as:

(i)   Electronic Markets:-The Principle function of an electronic market is to facilitate the search for the required product of service. Airline booking system are an example of an electronic market.

(ii) Electronic Data Interchange (EDI) : EDI provides for the efficient transaction of recurrent trade exchanges between commercial organizations which allows one company to send information to another company electronically rather than with paper Ex. Vehicle assemblers when trading with their suppliers.

(iii) Internet Commerce: The internet can be used for advertising goods and services and transacting one-off deals. Internet commerce has application for both business-to-business and business to consumer transactions.

Global Trading Environment and adoption of E-commerce

EC has given a global platform to all i.e to manufacturer, trader, seller and buyer. Here seller treat world as a global market and buyer also have a wide range of choice to buy anywhere in the world. World acts like a single market. Several factors which have role in the success of e-commerce.

1. Providing value to customers, Vendors can achieve this by offering a product or product-line which attract potential customer at a competitive price.
2. Providing service and performance, offering a responsive, user friendly purchasing experience, just like a flesh and blood retailer, may go some way to achieving these goals.
3. Providing a attractive website, The tasteful use of colour, graphics, animation, photographs, fonts and whitespace percentage may aid success in this respect.
4. Providing an incentive for customers to buy and to return: Sales promotions to this end can involve coupons, special offers and discounts.
5. Providing personnel attention, personalized websites, purchase suggestions, and personalized special offers may go some of the way to substituting for the face-to-face human interaction found at a traditional point of sale.
6. Providing a sense of community, Chat rooms, Discussion boards, soliciting customer input, loyalty scheme and affinity program can help in this respect.
7. Providing reliability and security, Parallel servers, hardware redundancy, fail safe technology, information encryption and firewalls can enhance the requirement.
8. Streamlining business processes, Possibly through re-engineering and information technologies.
9. Letting customers help themselves, Provision of a self-serve site, easy to use without assistance, can help in this respect.
10. Helping customers do their job of consuming, E-trailers can provide such help through ample comparative information and good search facilities.
11. Setting up an organization of sufficient alertness and agility to respond quickly to any changes in the economic, social and physical environment.
12. Product suitability, Certain products/services appear more suitable for online sale and other remain more suitable for offline sale. Many successful purely virtual companies deal with digital products, including information storage, retrieval and modification, music, movies, education software and financial transactions. Ex-google, eBay, Paypal etc.
13. Virtual marketers can sell some non-digital products/ services successfully.

14. Product such as spare parts both for consumer item and industrial equipment have seem good selling online. Retailers need to order spare parts specially since they typically do not stock them at consumer outlet in such case e-commerce solution in spare do not compare with retail store.

Comparison between Traditional and Electronic Commerce.

Traditional and electronic commerce can be compared on the basis of these three dimensions.

1. Product
   The products and services provided by e-commerce are considered in this dimensions.
   Product may be either physical or digital.
   In traditional commerce all products are physical
   In pure e-commerce all products are digital.
   In partial e-commerce products include a mix of digital and physical dimensions.
2. Process
   This dimensions includes various processes involved in commercial transactions.
   Process may be either physical or digital.
   In traditional commerce all Processes are physical
   In pure e-commerce all Processes are digital.
   In partial e-commerce Processes include a mix of digital and physical dimensions.
3. Delivery agent
   This dimensions includes various intermediary units involved in commercial transactions.
   Usually delivery agents behave as a communication channel between buyer and seller
   Delivery agents may be either physical or digital.
   In traditional commerce all Delivery agents are physical
   In pure e-commerce all Delivery agents are digital.
   In partial e-commerce Delivery agents include a mix of digital and physical dimensions

No.	TRADITIONAL COMMERCE	E-COMMERCE
01.	Traditional commerce refers to the commercial transactions or exchange of information, buying or selling product/services from person to person without use of internet.	E-commerce refers to the commercial transactions or exchange of information, buying or selling product/services electronically with the help of internet.
02.	In traditional commerce it is difficult to establish and maintain standard practices.	In E- commerce it is easy to establish and maintain standard practices.
03.	In traditional commerce direct interaction through seller and buyer is present.	In E- commerce indirect interaction through seller and

		buyer occurs using electronic medium and internet.
04.	Traditional commerce is carried out by face to face, telephone lines or mail systems.	E-commerce is carried out by internet or other network communication technology.
05.	In traditional commerce processing of transaction is manual.	In e-commerce processing of transaction is automatic.
06.	In traditional commerce delivery of goods is instant.	In e-commerce delivery of goods takes time.
07.	Its accessibility is for limited time in a day.	Its accessibility is 24×7×365 means round the clock.
08.	Traditional commerce is done where digital network is not reachable.	E-commerce is used to save valuable time and money.
09.	Traditional commerce is a older method of business style which comes under traditional business.	E-commerce is a newer concept of business style which comes under e-business.
10.	Its resource focuses on supply side.	Its resource focuses on demand side.
11.	In traditional commerce customers can inspect products physically before purchase.	In e-commerce customers can not inspect products physically before purchase.
12.	Its business scope of business is a limited physical area.	Its business scope is worldwide as it is done through digital medium.
13.	For customer support, information exchange there is no such uniform platform.	For customer support, information exchange there is exists uniform platform.

ADVANTAGES AND DISADVANTAGES OF ECOMMERCE

The invention of faster internet connectivity and powerful online tools has resulted in a new commerce arena – Ecommerce. Ecommerce offered many advantages to companies and customers but it also caused many problems.

ADVANTAGES OF ECOMMERCE

- Faster buying/selling procedure, as well as easy to find products.
- Buying/selling 24/7.
- More reach to customers, there is no theoretical geographic limitations.
- Low operational costs and better quality of services.
- No need of physical company set-ups.
- Reduce production cost
- Easy to start and manage a business.
- Customers can easily select products from different providers without moving around physically.

DISADVANTAGES OF ECOMMERCE

- Any one, good or bad, can easily start a business. And there are many bad sites which eat up customers' money.
- There is no guarantee of product quality.
- Lack of personal touch
- Mechanical failures can cause unpredictable effects on the total processes.
- As there is minimum chance of direct customer to company interactions, customer loyalty is always on a check.
- There are many hackers who look for opportunities, and thus an ecommerce site, service, payment gateways, all are always prone to attack.

Advantages to Organization

Due to global reach of the internet, businesses organizations are able to send messages worldwide exploring new markets and opportunities.

In terms of cost reduction, e-commerce helps organizations in creating, processing, distributing, storing and retrieving information. In terms of online process the cost could be lower than running an actual shop with the associated manpower.

Extended trading hours is another benefit, the 24 hours a day, 7days a week in 365 days allow business always free to open on the internet without overtime and extra cost.

Advantages to Consumer

For consumer the advantage occur in the buying process, product research, evaluation and execution. Customer search product information through global markets and a wider range of choice, which makes comparison and evaluation easier and more efficient. Cheaper goods and

services is one of the benefit to consumer and also delivery time and cost can be saved by buyers when they purchase digital goods and service.(Ex- Ebook, Music, Internet television)

Advantages to Society

When the individuals can do purchase from home rather than travelling around this will result in less traffic and pollution. By the on-line payment govt. gets tax returns and also it is secure. Rural doctors and nurses can access professional information and latest health care technology. Overall e-commerce makes products and services more easily available without geographical limitations.

DISADVANTAGES OF ECOMMERCE
The main disadvantages is the lack of business model, lack of trust and key public infrastructure, slow navigation on the Internet, the high risk of buying unsatisfactory products and most of all lack of security.

Technological Limitations of EC

There is no universally accepted standard for quality, security and reliability. For general user the accessibility to Internet is unstable, expensive and insufficient in particular areas.

Nontechnological Limitations of EC

The lack of trust is one of the main reason to accept e-commerce due to privacy and security concern. The danger of hackers accessing customer files and corrupting accounts is also related to privacy and legal issue. For some high cost and unique item such as jewelry or antiques is difficult in E-commerce mode. In some goods where customers are unable to trial or access the actual goods before purchasing and delivery so many customers will not take the risk of purchasing via the internet.

BUSINESS MODELS OF E-COMMERCE

Introduction

E-Business involves changes in an organizations business and functional processes with the application of technologies, philosophies (love of wisdom) and computing paradigms (set of ideas) of the new digital economy. It is an internet initiative which transforms business relationships. It includes all aspects of e-commerce. With the help of e-business solutions, the companies have succeeded in developing their technology and increasing their turnover. Together e-business and e-commerce have helped to create a system of applications and utilizes whereby money, information and services can be exchanged via the web.

Business Models of E-Commerce

E-commerce business models can generally be categorized into the following categories.

- Business - to - Business (B2B)
- Business - to - Consumer (B2C)
- Consumer - to - Consumer (C2C)
- Consumer - to - Business (C2B)
- Business - to - Government (B2G)
- Government - to - Business (G2B)

Business - to - Business

A website following the B2B business model sells its products to an intermediate buyer who then sells the product to the final customer. As an example, a wholesaler places an order from a company's website and after receiving the consignment, sells the end product to the final customer who comes to buy the product at one of its retail outlets.
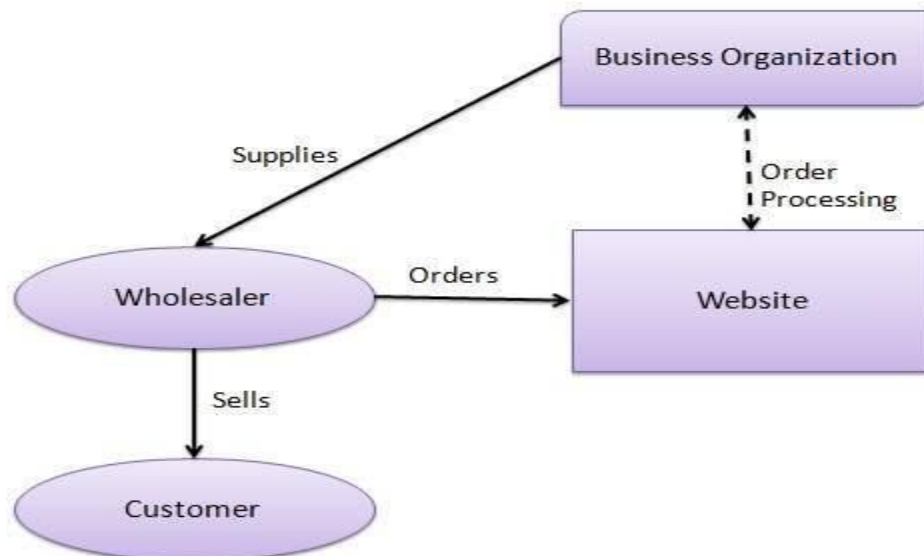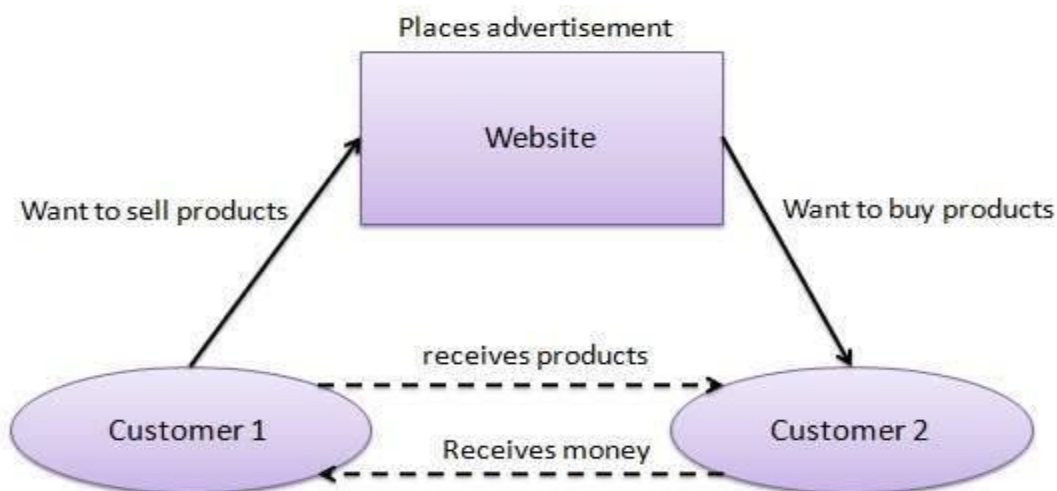
Business - to - Consumer

A website following the B2C business model sells its products directly to a customer. A customer can view the products shown on the website. The customer can choose a product and order the same. The website will then send a notification to the business organization via email and the organization will dispatch the product/goods to the customer.
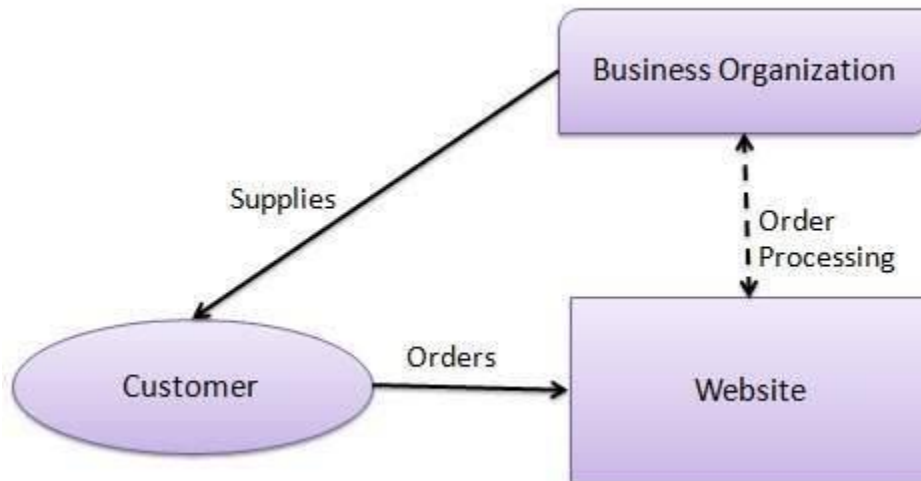

Consumer - to - Consumer

A website following the C2C business model helps consumers to sell their assets like residential property, cars, motorcycles, etc., or rent a room by publishing their information on the website. Website may or may not charge the consumer for its services. Another consumer may opt to buy the product of the first customer by viewing the post/advertisement on the website.
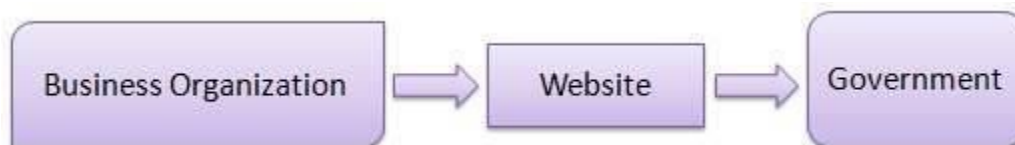
Consumer - to - Business

In this model, a consumer approaches a website showing multiple business organizations for a particular service. The consumer places an estimate of amount he/she wants to spend for a particular service. For example, the comparison of interest rates of personal loan/car loan provided by various banks via websites. A business organization who fulfills the consumer's requirement within the specified budget, approaches the customer and provides its services.
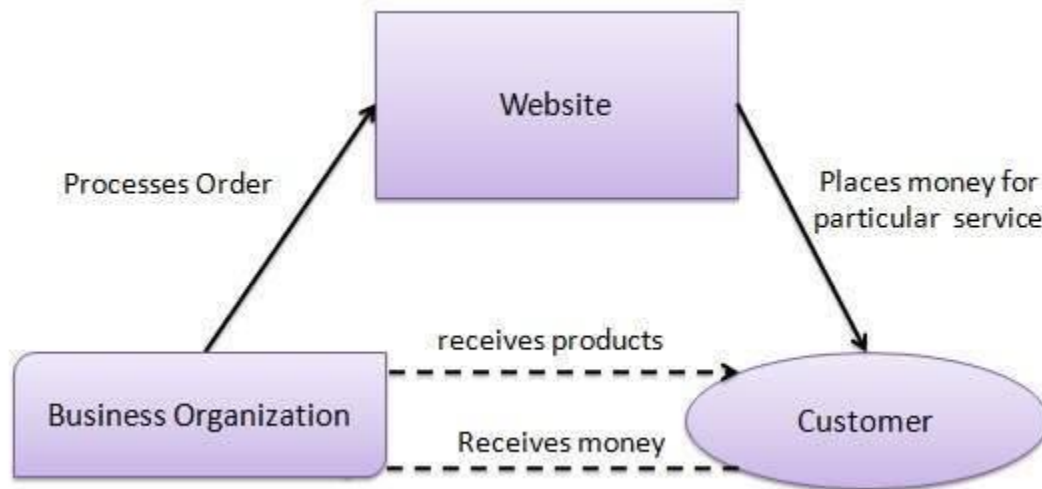
Business - to - Government

B2G model is a variant of B2B model. Such websites are used by governments to trade and exchange information with various business organizations. Such websites are accredited by the government and provide a medium to businesses to submit application forms to the government.

Government - to - Business

Governments use B2G model websites to approach business organizations. Such websites support auctions, tenders, and application submission functionalities.

Business To-Consumer (B2C)

B2C "applies to any business or organization that sell its products or services to consumer over the internet for their own use". In other words, it provides a direct sale between the supplier and in the individual consumer. B2C E-Commerce involves what is known as electronic retailing or e-tailing. It means on line retail sale. E-tailing makes it easier for a manufacturer to sell directly to a customer, cutting out the need for an intermediary (retailer).With B2C transactions there is no need for retailers and therefore no need for a physical store from which to distribute products. An electronic or Web storefront refers to a single company web site where products and services are sold.

B2C c got noticeable success when companies like eBay.com and amazon,com were launched.

The main things which are browsed and sell are Electronic goods, sporting goods, books toys etc.

Major activities of B2C E-Commerce

The various activities involved in B2C are
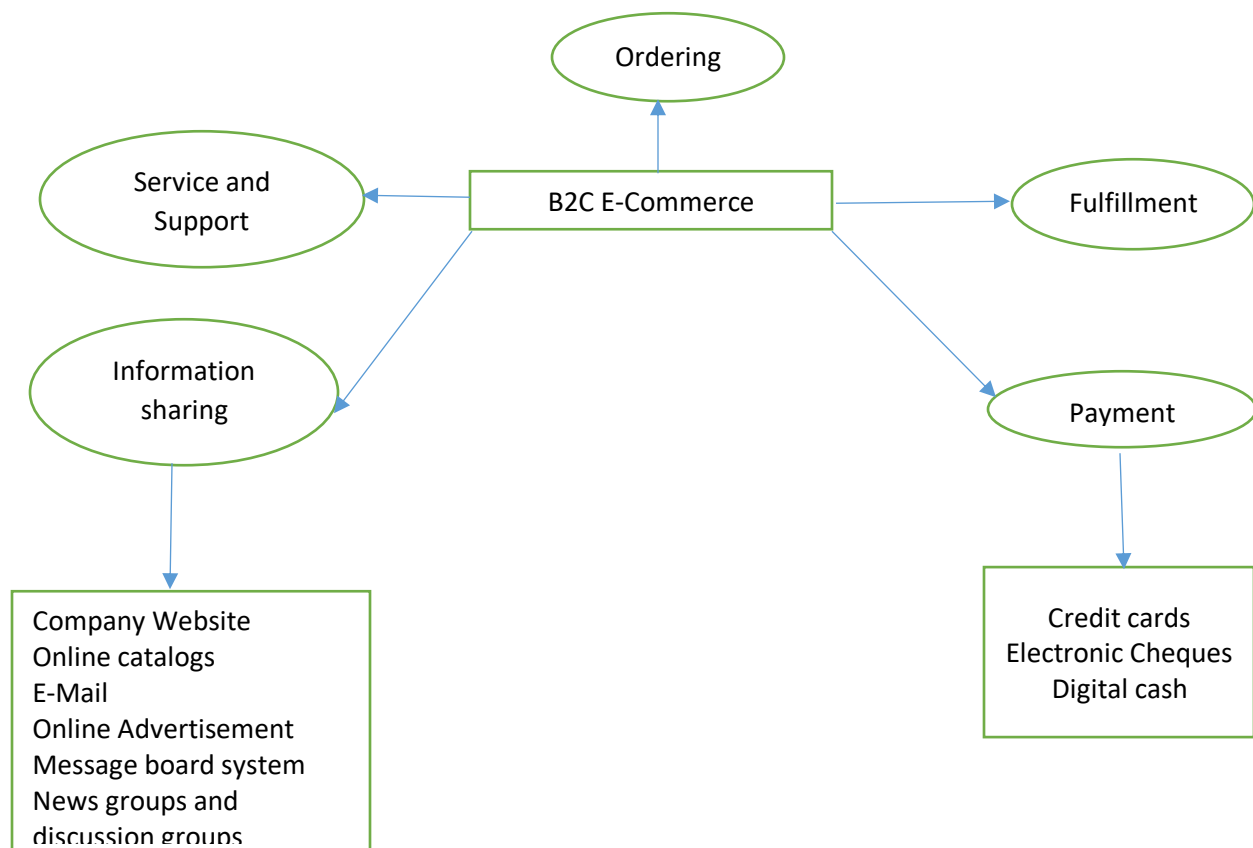
1. **Information sharing**: A B2c E-Commerce model may use some or all of the following applications and technologies to share information with customers.

        Company Web site
        Online catalogs
        E-Mail
        Online advertisements
        Message board system
        News group and discussion groups.

2. **Ordering**: A customer may use electronic forms similar to paper forms or e-mail to order a product or service.
3. **Payment**: There are variety of options
    Credit cards
   Electronic cheques
   Digital Cash

(An **eCheck**, or **electronic check**, is a digital version of a traditional paper **check**. WIth an **eCheck**, money is **electronically** withdrawn from the payer's **checking** account, transferred over the ACH network, and deposited into the payee's **checking** account)

(**Digital cash** is a system of purchasing **cash** credits in relatively small amounts, storing the credits in your computer, and then spending them when making **electronic** purchases over the Internet.

4. **Fulfilmen**t: The fulfilment function could be very complex depending upon the delivery of physical products (books, cd's) or digital products (Software, music, video). Fulfilment is responsible for physical delivering the product or service from the merchant to the customer.
5. **Service and Support:**It is more important in E-Commerce than traditional business because E-Commerce companies lack a traditional physical presence and need other ways to maintain current customers. Ex
* E-mail confirmation
* Periodic news flash
* Online survey
* Help desk
* Guaranteed secure transactions
* Guaranteed online auctions

These five activities all need to be used in conjunction with one another for a B2C business to be successful. E-Commerce and in particular B2C businesses have proven to be extremely successful over the past few years.

Business-to-Business (B2B):

Business to Business involves online transactions between two businesses or any two organizations. In B2B companies buying from and selling to each other online. But there's more to it than purchasing. It's evolved to encompass supply chain management as more companies outsource parts of their supply chain to their trading partners. For example any company may deal electronically with its dealers and may place online orders to its vendors for the raw material and can track the status of those orders.

A large number of companies are adopting this technique to curb the existing inefficiencies involved in potentially time consuming and tedious tasks, while cutting down the costs. It links suppliers, factories, distributers and retailers directly.

B2B activity refers to all e-commerce transactions that can occur between two organizations. This includes purchasing and procurement, supplier management, inventory management, channel management, sales activities, payment management and service and support. B2B include online companies that specialize in marketing strategies, advertising, email companies etc.

It is that portion of the Internet market where transactions between organizations and their partners take place. It involves information about development, manufacturing delivery, sales etc. of products and services.

By using B2B E-commerce business can reengineer their supply chain and partnership. B2B will offer access to following types of information.

- Product- Price, sales history etc.
- Customers- Sales history and forecast
- Suppliers- Product line and-lead time, sales terms and conditions.
- Product process- capacity, product plan.
- Competitors- market share, product offerings
- Sales and marketing- promotions
- Supply chain process- quality, delivery time etc.

B2B transactions occur when business buy and sell goods to and from each other. Basically this e-commerce strategy works in a way that allows businesses to have more buyers and then equally there are more sellers with goods available to these buyers. Sellers can learn from each other and even produce complementary goods to corner a bigger market share.

Differences between B2B and B2C

Different target audiences
The audiences of B2C are individual consumers who buy products and services for personal purposes. The consumers are everyday people who categorize into various segments. They are end customers and do not use purchased items for any other productions for sales purposes later.

The audience of B2B is more narrow and significant than B2C's counterparts. Firms in all sizes, including SMEs (small and medium enterprises), or organizations purchase products, not for immediate usage. Instead, they use for business or internal purposes. B2B commonly has higher-value customers than B2C because its products and services are larger and more complex.

One of the most obvious examples distinguishes target audience of these two forms of business - You go to a Mercedes Benz branch to buy a car, then you are B2C customers, Mercedes Benz is a B2C company. You set up a book store and go to the publishers to purchase the books; you are a B2B customer.

Decision-making process
Decision making on both sides is also different. The decision-making process in B2C is usually shorter than that in B2B.

In B2B, marketers have to deal with multiple distinct target groups/personas within a single enterprise. B2B business doers must keep in mind that there will be many people involved in the purchasing process, so the process is more complicated than B2C one. Depending on the type of purchases, the final purchasing is influenced by a decision-making group that can include members from technical, business, financial, and operational departments.

For example, the purchasing manager of a car manufacturer might need to consult with the finance, engineering, and sales team before deciding to purchase components from a supplier. The purchase with significant capital may require authorization from the board level.

In B2C, the decision-making process is much simpler. It is a personal purchase and depends mainly on the emotion of the buyers

Differences in marketing strategies
Though marketing in B2B and B2C might be similar in the methods of advertising, publicity, and promotions, and marketing channels, there are differences in marketing tactics and the way of information brought to customers.

In B2C, it is sufficient to advertise in general media like television, radio, or online magazine. However, for B2B, it may not help as business customers use their unique avenues that marketing needs to follow. For example, if you are selling supplements, advertising your products on radio, local TV channels, or a daily newspaper is helpful because your target audience is individuals who have demands for supplements. In contrast, if you are a Human Resource agency, your customers are other businesses that will be not likely to watch TV or listen to the radio to find their contractors.

Besides, B2B customers are more rational, planned, and logic than B2C customers. When purchasing a product, B2B customers always think carefully about a specific return on investment (ROI). Therefore, it is crucial to deliver to them rational messages, provide them with sound information and ultimately practical B2B solutions. Emotional factors usually influence B2C customers' purchasing decisions. So the message to them should be more emotional, and the content should be fun to enjoy. For example, you're walking around the street, and suddenly a salesman comes to you with a box of chocolate. You refuse to buy at first, but after he sings a song that you like, you buy that chocolate box with a smile on your face.

You should notice the differences of content marketing in B2B and B2C to do it right.

Sales speed
B2C transactions are commonly faster than in B2B as B2C sells directly to customers. In B2C, sellers want the transaction to go as fast as possible. It means that their products are quicker to be sold. In B2B, a transaction is longer. As I mentioned, multiple people influence the making-decision process in B2B, and the final purchase has to go through a lot of stages. So it is sometimes challenging and time-consuming for B2B businesses to sell their goods. From the time of raising brand awareness, leading nurturing, and driving engagement to turn leads into customers, it may take several months.

Relationships with customers
In most cases, B2B has a deeper relationship with clients than in B2C. The B2B market is smaller than B2C; the scale of potential customers in B2B is also narrower than in B2C. That's the reason why it is more competitive in B2B space to generate leads. B2B businesses need to develop a strong relationship with their clients. Once the company builds trust with clients and brings to them benefits, they will have customer loyalty.

In B2C, you tend to have shorter relationships with customers, and customers are also less loyal than in B2B. As a typical example, in B2C, a lot of one-time purchase has been made. Today, customers may clothe from a brand, and tomorrow they can buy from the other brand and might never make any purchase on that brand.

Return on investment

Unlike in B2C, B2B buyers do not buy goods to satisfy their demand or to have fun. They buy technology, software, and services to optimize their operation and manufacturing. It reduces cost, improves customer experience, and ultimately increases revenue.

Therefore, it makes sense to say that a B2B transaction is an investment in future profitability and productivity.

Consumer-To-Consumer

Consumer-to-consumer or Peer-to-Peer is defined as exchange between / among consumers. These exchanges can involve a third party involvement, which can facilitate and provide the Infrastructure, place and governance for the transactions/ exchanges. The most famous and successful example of a C2C application is Ebay. Ebay.com is an online auctioning site that facilitates the trade of privately owned items between individuals.

Other examples of C2C applications are service and employment websites such as Monster.com, CareerOne.Com. These websites provide a valuable service to consumers looking for jobs. Employers can advertise on these websites and potential employees can contact their organization for an interview. Sites such as MSN.com act as a communication medium for C2C deliberations. Although there is no commercial benefit to the website, they do provide the facilities for Consumer-to-Consumer exchange. It is a growing area of e-commerce.

B2B E-Commerce and EDI

Introduction.

Traditionally any business while dealing with the suppliers and consumers involves a lot of paper work. It mostly leads to delays in supplies and delivery and also incurs a high cost. Through automation the companies can resolve these problems. They can provide better service by providing better product information and distribution channels while reducing the transaction cost. This drive leads the companies to adopt a new methodology for doing business termed as "Business-to-Business (B2B) E-commerce. B2B E-commerce means the business process in which both the parties are business house.

In B2B companies buying from and selling to each other online. It is evolved to encompass supply chain management as more companies outsource parts of their supply chain to their trading partners. It links suppliers, factories ,distributors and retailers directly.

Need for B2B

- It allows the business to replace a number of people in their work department with automated systems
- It substantially reduces business cycle time.
- It helps in running the business more efficiently, quickly and securely.
- Managing inventory more efficiently.
- Adjusting more quickly to customer demand.
- Getting products to market faster.
- Cutting the cost of paper work.
- Reigning (not comparable) in large purchases
- Obtaining lower prices on same supplies.

Increased Reach
The B2B portals of ecommerce offer a way of increasing reach to customers and making your organization and products known by more potential customers.

Streamlining, transparency and efficiency
The B2B ecommerce will streamline your customer interactions by enabling the process of ordering be reliable and efficient. This is vital in the current climate of commerce where there are high demand and short time.

Better management of suppliers and customers
The concept of B2B ecommerce offers better management of both the suppliers and customers. Essentially, the whole initiative is a win-win for both parties.

More sales

You will not only reach new clients, but ecommerce will also allow you to quickly implement the automated up-sell and cross-sell program of recommendation, providing suggestions to clients on your site and making them buy related products or products containing more functionality and features.

Analytics

The B2B ecommerce offers the ideal platform for the business to launch an analytics campaign."With the help of ecommerce, business is able to easily evaluate and measure sales effectiveness, product mix, marketing campaigns, inventory turns, client engagement, and client sales effectiveness".

Better sales engagement

The physical sales team will as well merit from the launch of the ecommerce effort. The B2B ecommerce portal or site will boost the sales teams' visibility towards the client orders, history and pricing on the road or working from remote locations. The traveling sales agent show a lot of carbon mile on the road, this can be reduced via the web portals and the web-based sites of communication.

What is Electronic Data Interchange (EDI)?

Electronic Data Interchange (EDI) is the electronic interchange of business information using a standardized format; a process which allows one company to send information to another company electronically rather than with paper. Business entities conducting business electronically are called trading partners. It is a new ,fast, inexpensive and safe method of sending order, invoice advice etc. It also used to transmit financial information and payment in electronic form.

Many business documents can be exchanged using EDI, but the two most common are purchase orders and invoices. At a minimum, EDI replaces the mail preparation and handling associated with traditional business communication. However, the real power of EDI is that it standardizes the information communicated in business documents, which makes possible a "paperless" exchange.

The traditional invoice illustrates what this can mean. Most companies create invoices using a computer system, print a paper copy of the invoice and mail it to the customer. Upon receipt, the customer frequently marks up the invoice and enters it into its own computer system. The entire process is nothing more than the transfer of information from the seller's computer to the customer's computer. EDI makes it possible to minimize or even eliminate the manual steps involved in this transfer.

The process improvements that EDI offers are significant and can be dramatic. For example, consider the difference between the traditional paper purchase order and its electronic counterpart:

A Traditional Document Exchange of a Purchase Order	An EDI Document Exchange of a Purchase Order
This process normally takes between three and five days.	This process normally occurs overnight and can take less than an hour.
Buyer makes a buying decision, creates the purchase order and prints it. Buyer mails the purchase order to the supplier. Supplier receives the purchase order and enters it into the order entry system. Buyer calls supplier to determine if purchase order has been received, or supplier mails buyer an acknowledgment of the order.	Buyer makes a buying decision, creates the purchase order but does not print it. EDI software creates an electronic version of the purchase order and transmits it automatically to the supplier. Supplier's order entry system receives the purchase order and updates the system immediately on receipt. Supplier's order entry system creates an acknowledgment an transmits it back to confirm receipt.

Paperless Transactions

EDI differs from electronic mail because it transmits an actual structured transactions in contrast to an unstructured text message such as a letter. By minimizing the amount of time used in the inventory, it also helps in minimizing the costs. In the case of working with EDI physical movements of paper are avoided and time per each movement can be reduced since all these activities are computer to computer exchange.

EDI is most commonly applied in the execution and settlement phases of the trade cycle. In the execution of a simple trade exchange, the customers order can be sent by EDI and the delivery notification from the supplier can also be electronic. For settlement the supplier can use FDI to send the invoice and the customer can finish the cycle with an electronic fund transfer via the bank and an EDI payment notification to the supplier.

Organizations can most benefit from EDI when they integrate the data supplied by EDI with applications such as accounts payable, inventory control, shipping and production planning.

For proper working of EDI model, there are four key requirements.

- Transaction formats and data should be standardized

- Special software should be developed for converting the messages into a form suitable to other companies
- There should be value added network with mail box facilities among the companies following the EDI. It would allow the messages to be sent, sorted and held until they are needed by the receiving computer.
- Certain transaction would still require the writing in hard copy form. This may be due to legal requirements.

Company used EDI to automate price, shipping receiving and payment transactions with its customers as an example. Price updates and shipping notices are entered by the appropriate departments directly into company's computer system, which then transmits to the customer's computer system. Similarly customer's material releases, receiving reports and payment data are also transmitted directly through the computer systems back to the company. EDI has replaced paper for these transactions.

Components of EDI

The following components and tools are necessary for performing EDI.

- Trade Agreement- a legally binding trade agreement between you and your trading partner.
- Standard Document Format- the standard agreed upon format for the document to be electronically transmitted.
- EDI Translation Management Software- software used to convert the application's format into the agreed upon standard format. For optimum performance the translation software should be on the same platform as your business application.
- Communication software- a programming tool that enables you to write communication protocols or a separate application. It can be a module to the translator or a separate software application.
- Modem- a hardware device used to transmit electronic information between computer systems. The higher the band rate, the faster the communication will be.
- VAN- stands for Value Added Network. A network to which you can connect to transmit data from one computer system to another. One network can act as a gateway to another.
- Point-to Point- a direct communication link from one computer to another. Some trading partners offer a direct connection to their EDI computer.

EDI Standards

Implementation of EDI cannot be proceed without the development of widely accepted data format and communication standards. A number of different standards bodies exist to develop standard formats for EDI. The Electronic Data Interchange Association (EDIA) is a non-profit organization set out to serve as an administrator for several different industry groups. Each industry served as a committee to determine new standards, modify existing ones and pass the information to the EDIA for publication and distribution. EDIA was asked to develop a set of standards applicable to the grocery industry. The first such standard is the Uniform Communication Standard (UCS). UCS standards are now widely applied in the grocery and retail trades.

The ANSI X12 committee is set out to develop standards that will be acceptable across industry groups. The ANSI X12 committee has published standards for 20 documents including purchase order, invoice, remittance (money sent) advice and request for quote. Work is going forward to define EDI formats for an additional 100 documents.

Parallel efforts in standards development have also been proceeding in Europe, leading to the development of the EDIFACT standards. The EDIFACT (EDI for administration, Commerce and trade) committee worked out a common data dictionary and syntax rules

so standards in different industries and countries can base standards development on the same building blocks.

DATA standards used in EDI

The two data standards commonly used in EDI systems are

- Data encryption standards (DES)
- Rivert-shamier-Adelmann (RSA)

DES standard was developed by IBM for the on published as a standard. The same key is used both for encryption and decryption of the messages. RSA standard was developed by a group of mathematicians who believed that it would not be possible to device a code that could be deciphered (decode) using a public key without giving away the encryption key.

COST of EDI

Calculating the cost of an EDI implementation is very important in order to ensure that it will deliver real financial and business benefits to your company. But first you must decide the approach you are going to take with EDI. The final price you depends upon several things.

The Expected Volume of Electronic Documents:- Generally speaking, PC products cost less, but handle only a few documents and trading partners. Midrange EDI packages can be a little more expensive, but handle a much larger volume of EDI. If you anticipate multiple documents or trading partners, a midrange EDI system is a much better choice.

The Amplitude of The EDI Translation Software:- Some products look like a bargain, but as your EDI needs grow, hidden costs (such as having to purchase new transaction sets) suddenly appear. You may pay more for a program with an integrated mapper, but you'll avoid purchasing overlays and maps in the future.

Implementation time. Some applications are easier to learn and use than others. The more time you spend in training, the more time it takes to get into production mode. If your time frame is tight, look for a translator that doesn't require training before implementation.

Fees vary from software company to software company. Ignoring the hidden costs mentioned above, you can expect the following ongoing charges:

Maintenance Fees: Most companies charge an annual maintenance fee that is usually a percentage of the translator's list price. This fee should include software updates, standards updates, technical support, and customer service.

VAN Charges: The VANs bill you for transmitting data similar to making a long distance phone call. Some also bill you for connect time. A fast modem helps to lower transmission costs.

Mailbox Costs: Most VANs charge a monthly fee for maintaining a mailbox on their network. Some base billing on the document (25 cents per document transmitted). Others charge based upon the number of characters in each document.

Implementation Costs: For purchase of hardware, software, telephone lines, communication equipment training and management time.

Running Costs: Rental of telephone lines, call or packet charges, other communication costs, equipment maintenance, help desks, continuous staff training.

Study and Decision-making: Researching the market (hidden costs), deciding to use or not to use EDI. Selection of a system appropriate to the needs of an organization (consultant, cost involved if needed).

Other Reorganization Costs: From new forms and stationary to office moves and redundancy payments.

While implementing an EDI system, one has to:

- Review all parts of the operation concerned and all paperwork and reports generated.
- Decide what actually controls the operation.
- Get rid of any unnecessary operations, reports and paperwork.

EDI allows existing staff to handle a greater throughput.

REASONS FOR SLOW ACCEPTABILITY OF EDI FOR TRADING:

There are many reasons, which are accountable for the slow acceptability of EDI for trading. Some of them are listed below:

Too Many Standards:

There are too many standards bodies developing standard documents formats for EDI. For example your company may be following the X12 standard format, while your trading partner follows the EDIFACT standard format.

Changing Standards:

Each year, most standards bodies publish revisions to the standards. This poses a problem to EDI users. You may be using one version of the standard while your trading partners are still using older versions.

EDI is Too Expensive:

Some companies are only doing business with others who use EDI. If a company wants to do business with these organizations, they have to implement an EDI program. This expense may be very costly for small companies.

Limit Your Trading Partners:

Some large companies tend to stop doing business with companies who don't comply with EDI. For example Wal Mart is only doing business with other companies that use EDI. The result of this is a limited group of people you can do business with.

ELECTRONIC FUNDS TRANSFER (EFT):

Electronic Funds Transfer (EFT) is actually quite a generic term. The label EFT encompasses any monetary transaction that is completed by electronic means; i.e. Automated Teller Machine (ATM) transactions, wire transfers, point of sale (POS) transactions, and tape exchange of financial data. This report however, will focus on the coupling of EFT with Electronic Data Interchange (EDI) technologies – where EDI refers to computer-to-computer electronic exchange of business documents such as purchase orders and shipping notices between business partners, in a computer readable format.

Combining EDI and EFT:

With the ever increasing number of businesses utilizing EDI technologies to communicate with their suppliers and customers to conduct business – invoices, orders, etc – they will not want their payment information to be paper based. It is therefore natural for these companies to take the next step to incorporating EFT with EDI. By combining EFT with the advantages provided by EDI (automatic processing of business transactions without human intervention) businesses gain in many ways:

(a) Reduce time spent in data entry, paper processing and error correction, by having your accounts payable system directly feed your EDI translator.

(b) Reduce/eliminate the costs associated with cheque preparation, enveloping, mailing, cheque disbursement, cheque reconciliation, storage and retrieval by creating and sending payments electronically to the bank.

(c) Accurate cash flow forecasting for these payments, and improve control of overall cash flow because the transfer of funds are guaranteed on value date. This also allows you to take advantage of discounts by establishing set payment dates.

(d) No time is due to mail and processing float, as payment can be sent from anywhere.

(e) Reduce time, errors, and cost of handling incoming cheques, bank deposits and data entry into your accounts receivable system.

The role of banks in EDI:

When it comes right down to it, banks are the only organizations that can process any sort of money transaction. If two companies wish to enter into an EDI partnership, they may directly transfer all ordering and invoice information directly between each other, but any transfer of funds must be made via an electronic request to a bank. Upon receipt of this request, the bank may either transfer the funds directly (if both companies use the same bank) or go through appropriate channels to settle with another bank.

XML AND ITS APPLICATION:

HTML, which is a markup language used for publishing information on the Web. Content developers use a fixed set of HTML tags to describe the elements of online documents, such as headers, paragraphs, bold-face text, italicized text, etc.

XML (Extensible Markup Language) is not actually a markup language like HTML. Rather, it allows you to create customized tags unique to specific applications, so that you are not limited to using HTML's fixed set of publishing-industry-specific tags. For example, developers can make industry-specific (or even organization-specific) tags to categorize data more effectively within their communities. Some industries have already developed standardized XML tags for publishing documents online. For example, MathML (Math markup Language) is a standardized XML-based language for marking up mathematical formulas in documents, and ChemML (Chemistry Markup Language) is a standardized XML-based language for marking up the molecular structure of chemicals.

The use of XML is growing quickly and is changing the way business is conducted over the Internet. XML is widely used to exchange data between any two homogeneous or heterogeneous applications. RSS (Really simple syndication) is one of the example of RSS. For example, businesses could create XML tags specifically for invoices, electronic funds transfers or purchase orders. They could standard tags for prices, the parties in the transaction, etc. XML will be used to define business in actions. In order to be used effectively, an industry's customized tags must be standardized across that industry.

Once tags are standardized, the browser must be able to recognize them. Either the tags can be built into the browser, or plug-ins could be downloaded. A customized XML tag could actually be used as a command for a browser to download the plug-in for the corresponding set of standardized tags.

The impact of XML on e-commerce is profound. XML gives online merchants a better means of tracking product information. By using standardized tags for data, bots and search engines are able to find products faster online.

Many industries are using XML to improve EDI. The health care industry, for example, uses XML to share patient information (even CAT scans) among health care-oriented applications. This helps doctors access information and make decisions faster, which can improve the care patients receive.

The Health Level Seven (HL7) organization's Application Protocol for Electronic Data Exchange in Healthcare Environments uses XML. This standard enables health care-oriented applications to exchange data electronically by specifying the layout and order of information. Patient names, addresses, insurance providers, etc. are tagged so that they can be shared electronically among applications. Once a patient's identification information is entered, that information can be shared over the hospital's intranet with the labs and the accounting department, for example, thus eliminating the need to re-enter the same data. HL7 is a non-profit, ANSI (American

National Standards Institute)- accredited Standards Developing Organization that focuses on clinical and administrative data.

The XML Metadata Interchange Format (XMI) is a standard that combines XML with UML (Unified Modeling Language). Software developers use UML to design object-oriented systems. XMI allows developers using object technology to tag design data. Using standardized XMI tags allows developers to exchange design data over the Internet and interact with multiple vendors using a variety of tools and applications. Thus, with XMI people worldwide can collaborate on the designs of object-oriented software systems. For more information about XMI, visit

Software companies sell their products over the Web. The Open Software Description Format is an XML specification that enables the distribution of software over the Internet. Using OSD, developers tag the structure, of an application and its files. The tags describe each component of the software and its relationship to the other components in the application. The ability to download software from the Web means vendors can save the time resources and money previously required for creating boxed-products and shipping them to customers.

COMPARISON OF HTML AND XML:

XML differs from HTML in many aspects. As we know that HTML is markup language is used for displaying the information, while XML markup is used for describing data of virtually any type. In other words, we can say that HTML deals with how to present whereas XML deals with what to present. Actually HTML is a markup language where as XML is markup language and a language for creating markup languages. HTML limits you to fixed collection of tags and these tags are primarily used to describe how content will be displayed, such making text as bold or italics or headings etc., whereas with XML you can create your new or any user defined tags. Hence XML enables the creation of new markup languages to markup anything imaginable (such as Mathematical formulas, chemical formulas or reactions, music etc.

Lets understand difference between HTML and XML with the help of an example. In HTML a song might be described using a definition title, definition data, an unordered list, and list items. But none of these elements actually have anything to do with music.

The HTML might look something like this:

<HTML>

<body>

<dt> Indian Classical </dt>

<dd> by HariHaran, Ravi Shankar and Shubha Mudgal</dd>


```
<li>Producer: Rajesh

<li>Publisher: T-Series Records

<li>Length: 6:20

<li>Written: 2002

<li>Artist: Village People

</ul>

<body>

</html>
```

In XML the same data might be marked up like this:

```
<XML>

<SONG>

<TITLE>Indian Classical</TITLE>

<COMPOSER>Hariharan</COMPOSER>

<COMPOSER>Ravi Shankar</COMPOSER>

<COMPOSER>Shubha Mudgal</COMPOSER>

<PRODUCER>Rajesh</PRODUCER>

<PUBLISHER>T-Series</PUBLISHER>

<LENGTH>6:20</LENGTH>

<YEARo2002</YEAR>

<ARTIST>Village People</ARTIST>

</SONG></XML>
```

Instead of generic tags like <dt> and <li>, this listing used meaningful tags like <SONG>, <TITLE>, <COMPOSER>, and <YEAR>. This has a number of advantages, including that it's easier for a human to read the source code to determine what the author intended.

ADVANTAGES OF XML AS A TECHNOLOGY:

XML adds a list of features that make it far more suitable than either SGML or HTML for use on an increasingly complex and diverse Web:

- **Modularity:-**Although HTML appears to have no DTD, there is an implied DTD hard-wired into Web browsers. SGML has a limitless number of DTDs, on the other hand, but there's only one for each type of document, XML enables us

to leave out the DTD altogether or using sophisticated resolution mechanisms, combine multiple fragments of either XML instances or separate DTDs into one compound instance.

- **Extensibility:-** XML's powerful linking mechanisms allow you to link to material without requiring the link target to be physically present in the object. This opens up exciting possibilities for linking together things like material to which you do not have write access, CD-ROMs, library catalogs, the results of database queries, or even non-document media such as sound fragments or parts of videos. Furthermore, it allows you to store the links separately from the objects they link. This makes long-term link maintenance a real possibility.

- **Distribution:** In addition to linking, XML introduces a far more sophisticate method of including link targets in the current instance. This opens the doors to a new world of composite documents-documents composed of fragments of other documents that are automatically (and transparently) assembled to form what is displayed at that particular moment. The content can be instantly tailored to the moment, to the media, and to the reader, and might have only a fleeting existence: a virtual information reality composed of virtual documents.

- **Internationality:-** Both HTML and SGML rely heavily on ASCII, which makes using foreign characters very difficult. XML is based on Unicode and requires all XML software to support Unicode as well. Unicode enables XML to handle not just Western-accented characters, but also a Asian languages.

- **Data Orientation:-** XML operates on data orientation rather than readability by humans. Although being humanly readable is one of XML's design goals, electronic commerce requires the data format to be readable by machines as well. XML makes this possible by defining a form of XML that can be more easily created by a machine, but it also adds tighter data control through the more recent XML schema.

.

<u>BUSINESS APPLICATIONS OF E-COMMERCE</u>

INTRODUCTION

Information Technology (IT) revolution has been widely touted as having equal if not greater impact on us than the industrial revolution. The application of electronic commerce or e-commerce has led to many changes in the way business is conducted. By definition electronic commerce or e-commerce is the purchasing or selling of goods or services and the transfer of funds in any way using electronic communications in inter-company and intra-company business activities.

An e-commerce solution is a solution to conduct business using technology, through an intra-, extra- or Internet solution. There are two types of e-commerce: Business-to-consumer (B2C) e-commerce involving companies selling products or services to individuals; and business-to-business e-commerce (B2B), in which companies sell to other business.

E-business, is an umbrella term that includes e-commerce and refers to the use of the Internet and private intranet to transform a company's value chain (i.e. internal processes, supplier and partner interactions, and customer relationships) with the ultimate goal of creating value for customers. A firm with an effective e-business strategy develops the capabilities needed to improve the flow of information and business intelligence among partners, suppliers, employees and customers. It also aims to solve problems for all parties that comprise its extended value chain.

Moving a business to the Internet is a sound strategy for increasing business volume making a business instantly international, and opening up possibilities that can never exist in the "real world". It doesn't matter even if businesses are small and localized. Going international will facilitate better support since e-commerce solutions will make it a 24x7 business. A business with a strong Internet presence can reduce staffing and office space overhead, which can result in more competitive pricing of services and products. The internet can provide a more economical form of advertising. A website with e-commerce capabilities actually draws people back; building brand loyalty and awareness which is rare in mainstream advertising. Integrated payments with Banking and Accounting are possible thereby providing robust support for accounting systems. In e-Commerce, the interaction with the system takes place in almost real time and therefore allows the customer or bidder to respond more quickly and reduces the lag time between discussion and purchase.

4.2 TRADE CYCLE

A trade cycle is the series of exchanges, between a customer and supplier that take place when a commercial exchange is executed. A general trade cycle consists of four phases. These are described below.

1. **Pre-Sales:**
   This Phase consists of various tasks in finding a supplier and agreeing the terms. This phase can be further classified in:
   - Search – finding a supplier
   - Negotiate – agreeing the terms of trade
2. **Execution:**

This phase consists of various tasks in selecting goods and taking delivery. This phase can be further classified in:
- Order
- Delivery

3. **Settlement:**

This phase consists of various tasks in invoice (if any) and payment. This phase can be further classified in:
- Invoice
- Payment

4. **After-Sales:**

This Phase consists of various tasks in following up complaints or providing maintenance.

Generic Trade cycles

Three generic trade cycles can be identified:

- **Repeat trade cycle**

These trade cycles contains regular repeat transitions between commercial trading partners.

Business Applications of E-Commerce

- **Credit trade cycle**

These trade cycles contains irregular transactions between commercial trading partners.

- **Cash trade cycle**

These trade cycles contains irregular transactions in once-off trading relationships (commercial or retail).
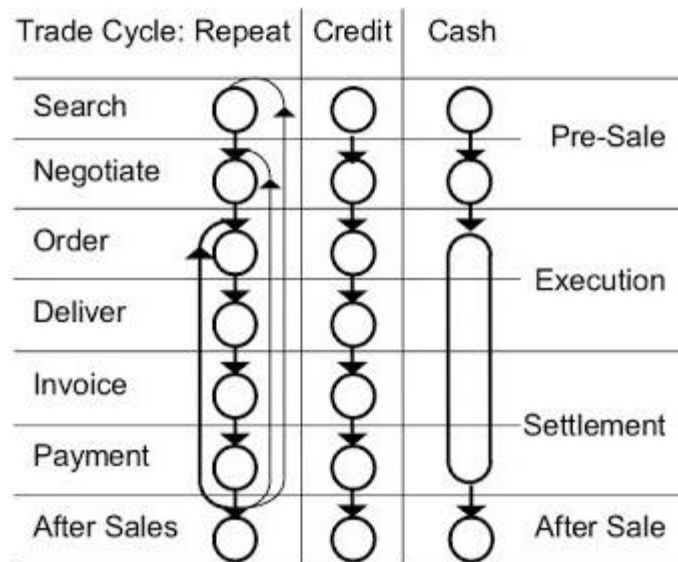
Fig-4.1. Generic trade cycles

Nature of Trade Cycle

For business-to-business transations the trade cycle typically involves the provision of credit with execution preceding settlement whereas in consumer-to-business these two steps are typically co-incident.

The nature of the trade cycle can indicate the e-Commerce technology most suited to the exchange. On this basis Business trasactions are classified as following:

- Commercial transations that are repreted on a regular basis, such as supermarkets replenishing their shelves, are one category of trade cycle.

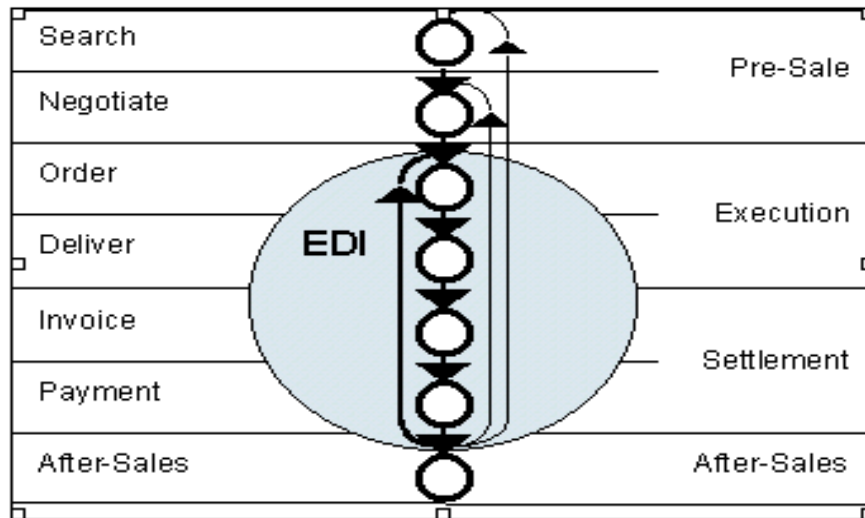 **EDI** is the e-Commerce technology appropriate to these exchanges, as shown below.

Fig-4.2. EDI Trade Cycle.

- Consumer transactions tend to be once off (or at least vary each time) and pyamnet is made at the time of the order.

  Internet e-Cmmerce is the technology for these exchanges, as shown below:
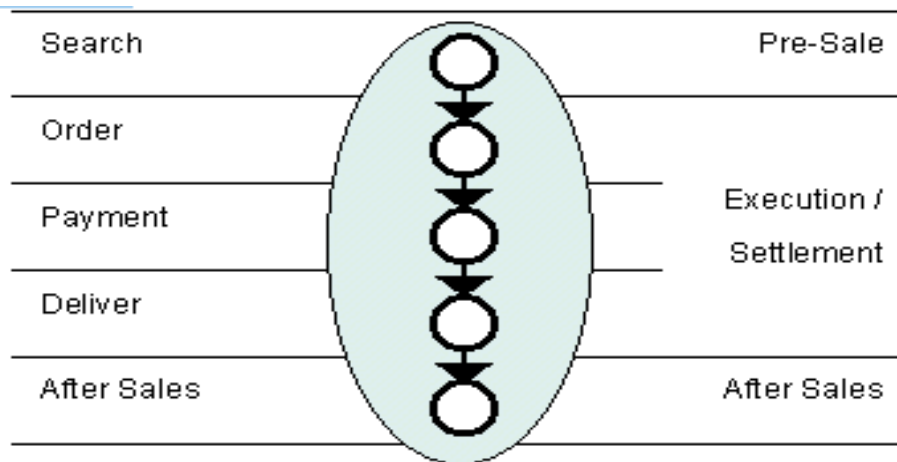

Fig-4.3. Consumer E-Commerce.

- The third generic trade cycle is the non-repeating commercial trade cycle and Internent e-Commerce or an electronic market is the appropriate e-technology for this.

4.3 SUPPLY CHAIN

Supply chain is a network of facilities and distribution options that performs the functions of procurement of materials (from supplier), transformation of these materials into intermediate and finished products (manufacturing), and the distribution of these finished products to customers (to customer). This network adds value for customers through the manufacture and delivery of products.

Fig-4.4. Supply Chain

> *A supply chain, logistics network or supply network is a coordinated system of entities, activities, information and resources involved in moving a product or service from supplier to customer:*

The entities of a supply chain typically consist of manufactueres, service providers, distributors, and retail outlets. Supply chain activities transform raw materials and components into a finished product. The primary objective of supply chain management is to fulfill customer demands through the most efficient use of resources.

In today's rapidly changing business environment, ever-greater demands are being placed on business.

- To provide products and service quicker
- With greater added value
- To the correct location
- With no relevant inventory position.

Customers want more quality, design, innovation, choice, convenience and service, and they want to spend less money, effort, time and risk. The supply chain of a company consists of different departments, ranging from procurement of materials to customer service.

Supply Chain Management means transforming a company's "supply chain" into an optimally efficient, customer-satisfying process, where the effectivity of the whole supply chain is more important than the effectivity of each individual department.

The capabilities of Internet technology will change the way we do business with our suppliers and customers, as well as change the face of business; in ints process and techniques, and in the definition of business itself."

E-business provides various strategies for supply chain, these are:

- **E-Procurement**

  E-procurement provides cross-enterprise system to system integration, electronic catalogs, on-line buying and selling. We sould be studying about e-Procurement in detail in the latter part of this chapter.

  Various advantages of e-Procurement are:
  - It enhances efficiency.
  - It reduced cost/cycle time
  - It helps in contract compliance and customer reach.

- **E-Collaboration**

  E-Collaboration provides cross-enterprise technology/design interaction (customer & Supplier). Various advantages of E-Procurement are:
  - Design cycle time
  - Design synergy, reuse
  - Revenue

- **Integrated Planning/ Manufacturing**

  Integrated planning/manufacturing provides Cross-enterprise planning/execution, system-to-system integration, and Outsourced manufacturing visibility. Various advantages of integrated planning/manufacturing are:
  - Lead time, margin
  - Accuracy/Flexibility
  - Inventory levels
  - On-time delivery

- **Integrated Delivery**

  Integrated Delivery provide cross-enterprise logistics management/ consignment visibility. Various advantages of integrated Delivery are
  - Logistics cycle time
  - Reduced cost
  - Lead time

- **Online Marketing**

  Online Marketing provids product boundary extension, new products/ services creation new markets/ channel creation. Different aspects of online marketing are discussed in detail in later part of the book. Various advantages of online marketing are:

- Market Segment Share
- Customer reach

4.4. WHAT IS E-PROCUREMENT?

Electronic procurement (e-Procurement) is the use of electronic tools and systems to increase efficiency and reduce costs during each stage of the purchasing process.

e-Procurement can be divided in two parts: direct-material procurement, in which raw materials or components needed for production are procured from supply chain partners and Indirect material procurement in which materials that are indirectly used are procured (like office supplies, maintenance related materials and operation related supplies).

e-Procurement for Direct Materials: As direct materials are needed for the production process, they require greater scrutiny before ordering. Organisations need to focus on different issues like the integration of suppliers, methods for integrating etc. Usually these items should be ordered in appropriate quantities as inventory of these car add further cost.

e-Procurement for Indirect materials: Indirect materials usually have low value, are not critical to the main production process and are ordered in high volumes. In an organisation, large number of people orders these items. By ordering these items online a company can save valuable amount of money and other resources. The three ways in which these materials can be procured online are given below:

- Seller side solutions
- Buyer side solutions
- Third-party solutions

A buy side e-procurement solution should be user friendly and help employees place order and purchase goods from their desktop with case. It should provide a list of preferred suppliers for each product and help reduce non-compliance with the organisation's business rule for purchasing.

Organisations are moving from the business-to-supplier model to a trading community model. In this model, several suppliers of particular product category come together to form a vertical portal. Indiamart.com provides one such kind of catalog. These kinds of portals represents a comprehensive catalog, which consists of the product details of all the participating suppliers. The buyers can access the catalog, compare product features and prices, select a supplier and place the order. Since price and

product differentiation play an important role in influencing the buyer's purchasing decision, the suppliers participating in this model should continously improve their products and cut costs. The success of this model depends on the following factors:

- How well the suppliers' networks are integrated with each other
- Whether suppliers update their catalogs at regular intervals
- Whether the infrastructure is capable of handling increasing product variety and zero volume.

SciQuest, founded in 1995, is a online comprehensive database of over 8000 suppliers with more than 650000 scientific products. SciQuest provided a wide range of services to scientists and purchasing professionals. In march 1999, SciQyest added an electronic purchasing system to its online catalog for laboratory instruments, chemicals and supplies. SciQuest streamlined the process of purchasing scientific products. It acted as a faciliatator and helped scientists and suppliers access information and communicate with each other.

The success of sell-side e-procurement solution depends on the supplier's technological infrastructure, ability to integrate with different technological platforms and ability to cut costs and improve products. In recent times, several suppliers of a single product have been coming together to form vertical portals. Vertical portals are commonly seen in industries like steel, paper and chemicals where fragmented markets and price variations make it difficult for buyers to make a purchasing decision.

The best practices in e-procurement include: using a procurement card system and electronic funds transfer system, clarifying the employees' role in the procurement process, using a strategic approach to implementation and participating in collaborative e-procurement. Collaborative e-procurement is being adopted by many companies to relize high levels of process efficiencies.

The multilevel approval method in traditional organisation to control procurement processes always led to operational delays. Therefore global companies established direct linkages between suppliers and employees to facilitate faster procurement of goods/ services. However, companies observed that employees had to spend considerable amount of time searching for suitable suppliers and procuring the required products and services from them. As individual employees searched for right supplier each time they wanted to procure goods, the process incurred heavy costs to organisations. They found that automation of the procurement process could improve the situation.

It is easy to automate each procurement area or each stage in a procurement life cycle individually and obtained the stand-alone solution. But, developing separate procurement system is not efficient and the cost of developing, implemnting and maintaining them is quite high therefore, for an efficient and cost effective procurement system in an organisation, it is essential to obtain an integrated solution. In this approach, the purchasing department focus on controlling strategies (rather than day to day transations) and extends it control to the accounting, finance and human resource departments, in addition to production department. Under such a system. Organisation emphasizes uniform control across the organisation, rather than on single department or a branch. This highlights the need for a coordinated solution to resource procurement. But, the challenge that organisation face is to be managed the transition from existing system to a new integrated framework.

An effective e-Procurement solution is one which not only employees procure goods with case but also provides the purchasing department with adequate control on their purchase decision. It should also enable integration of new system with existing system in the organisation.

Different types of middleware software are used for e-procurement solution for direct materials. WebMethods, a vendor provides e-procurement solution for direct materials.

1.5. IMPLEMENTING ePROCUREMENT

Oraganisations want their e-Procurement system to offer maximum benefit at the lowest possible cost. The general expectations of the organisation from e-Procurement solution are:

- Quick and positive results with minimum risks
- Leveraging of the huge buying potential of the organisation to negotiate favorable contracts from suppliers.
- Limiting the number of suppliers by choosing only efficient companies as preferred suppliers.
- Adopting best practices in procurement.

To obtain an e-Procurement solution that meets the above expectations, The Chief Procurement Officers (CPOs) should ensure that the solution provider understands the exact requirements of the organisation. The following steps may be followed to obtain the desired e-Procurement system for the organisation.

(a) Establish e-Procurement chain goals: The first step in implementing an e-procurement is to define the objectives of e-procurement. Some of the objectives of e-procurement are : to automate the purchasing process, cut costs, obtain accurate purchase reports and eliminate unauthorised purchases.

(b) Construct a Procurement Audit : The organisation should evaluate its existing process and determine whether it can be retained or require some modifications. If all the purchasing information is not available at a single location, or if it is not accurate or easily accessible, the procurement processes need to be modified. The most widely used technique for systematic measurement of e-procurement effectiveness is Return on Asset (ROA). The formula for ROA is

ROA = { (Revenues – Expanses) / Assests} * 100

The e-Procurement system can increase ROA by increasing revenues, decreasing expenses or minimizing investments in assets.

Some of the performance indicators that may be used to determine the success of e-Procurement are : total number of employees who have procured through the system in the preceding quarter, total amount of money spent on procuring the new channel, the percentage of transactions (out of total transactions) completed using the e-Procurement tools.

(c) Develop supplier integration matrix: An organisation cannot maintain the same kind of relationship with all its suppliers. It has to formulate it relationship strategy depending on the contribution of each supplier to the success of the company. Some suppliers produce critical components to the business and maintaining long-term relatinships with is crucial to the organisation's success.

(d) Select an e-procurement application: The selection of e-procurement application is critical and should be guided by factors like application should improve current procurement process. Application should leverage the investments already made by the organisation in ERP/SAP system and should be flexible enough to accommodate new procurement practices.

(e) Focus on integration: Each area of Operating Resource Management (ORM) and the requirements of employees, buyers and suppliers should be considered in the design of the e-Procurement application.

(f) Educate the staff: Educating employees is another important factor for implementing a new e-procurement system. It is the employee

who will use the system and help the organisation to achieve the desired improvement in the procurement chain and cost. If the employees oppose the system because of its complexity or other fears like lay-offs, then the e-procurement system will fail despite the advanced technology used and huge investments.

Andhra Pradesh Government evisions providing good governance by establishing a Committed, Accountable, Responsive, Inspring, Nationalist, Genuine Government – Caring Government e-Procurement is one of the vehicles that can be gainfully used in reaching the goal of CARING governance. E-Procurement.gov.in is a comprehensive e-infrastructure that will help the government and the citizens realize the vision of fuelling growth via profitable B2B e-commerce. Providing a robust, proven platform used by the largest companies in India and the world, it enables trade between companies of different sizes, platforms and locations. To this end, eProcurement.gov.in will provide services like eProcurement, eTendering, eSelling and eAuctions.
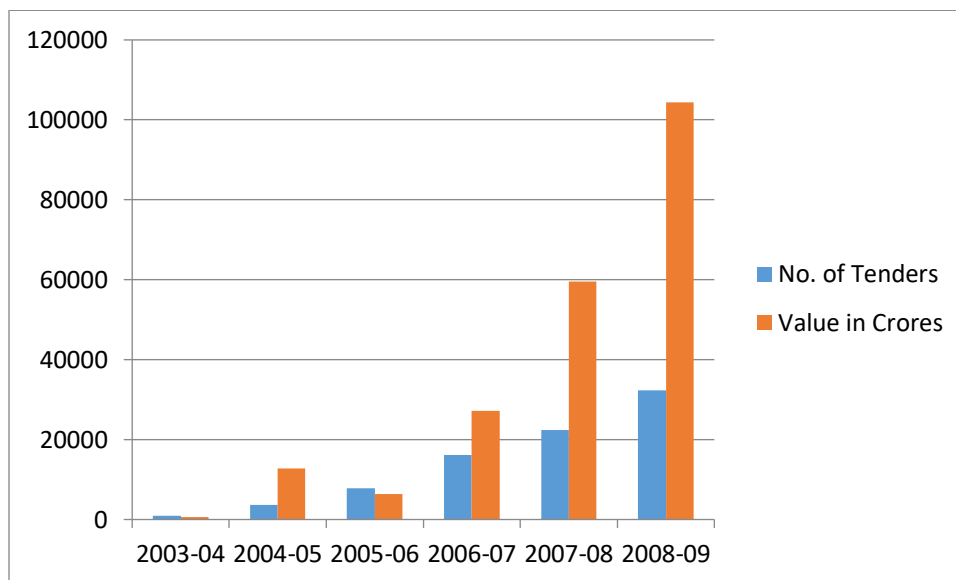
e-Procurement Trends

A wide variety of electronic procurement (e-procurement) tools have been developed over recent years to help organisations source, contract and purchase more efficiently and effectively.

Broadly, eProcurement tools relate to two aspects of procurement:

Sourcing activity and Transactional purchasing.

Sourcing Activity (eSourcing)

The e-Sourcing tools described can help buyers establish optimum contracts with suppliers, and manage them effectively. The tools include supplier databases and electronic tendering tools, evalution, colaboration and negotiation tools. Also included are e-Auction tools and those tools which support contract management activity.

Transactional Purchasing (ePurchasing)

The ePurchasing tools can help procurement professionals and end users achieve more efficient processes and more accurate order details. The two aims of (a) maximising control and (b) process efficiency are the function of e-purchasing tools such as purchase-to-pay systems, purchasing cards and electronic invoicing solutions.

Although the tools fall broadly within these two categories, some tools can be implemented in isolation. Based on the recommendations of experienced implementers, it is suggested that: eAuction tools are now a mature technology that can generally be implemented more quickly than other eSourcing tools. As eAuctions are currently proving a clear "quick win" in cash releasing terms, their earliest implementation is strongly recommended.

The Government Procurement Card (GPC) is an established and widely-accepted programme. Implementing the GPC will provide most organisations with immediate process effiency gains and the capability to better meet prompt payment targets.

Purchasing cards (P-cards)

Purchasing cards (P-cards) are similar in principle to smart cards used by consumers (for example suppliers are paid within five das; the buyer is billed monthly in a consolidated invoice), but with extra features which make them more suitable for business-to-business purchasing. These can include:

- Controls such as resticting card use to particular commodity areas.
- Individual transaction values, and
- Monthly expenditure limits.

The purchasing information provided to the buying organisation by an issuing bank on each monthly statement depends on the degree of detail automatically generated by each supplier. This can range from the supplier name, date and transaction value to real details against each item ordered, free text entry for the input of account codes and VAT values.

Implementing P-Cards

Card holders (users)

P-Cards should be distributed to anyone in the organisation who needs to requisition low value goods, and some services.

Functionality

P-Cards enable each card holder to be allocated a spend limit per transaction and a total spend limit per month. The GPC and some other P-Card programmes also enable spend to the regulated by blocking spend categories for particular users.

Individual trasaction data is captured by the supplier at time of sale and transmitted to the issuing bank which provides the card programme. A monthly consolidated statement is provided in paper format or electronically to the purchasing organisation for approval and payment.

Benefits of P-cards

- Prompt payment discounts reduce the amount paid for goods and services.
- Guaranteeing prompt payment is a significant benefit to suppliers, particularly small and medium sized enterprises as it generates cash flow Increased compliance with contracts.

e-Auctions

In an electronic reverse auction (e-Auction) potential suppliers compete online and in 'real time', providing prices for the goods/services under auction. Prices start at one level and gradually, throughout the course of the e-Auction, reduce as suppliers offer improved terms in order to gain the contract. E-Auction, can be based on price alone or can be weighted to account for other criteria such as quality, delivery or service levels.

Electronic reverse auctions (ERA) framework

Each of the eAuction service providers on the framework offers public section organisations assistance with: Assessment of the suitablity of forthcoming contracts to the e-Auction process. Advice and guidance on strategy and Supplier training and 'test' e-Auction events.

e-Auction benefits

- Improved preparation and planning for the tendering process
- Opportunity for suppliers to submit revised bids for a contract (as opposed to the formal tendering process)

- Increased market knowledge for buyers and suppliers. Suppliers particularly benefit from increased awareness of competitor pricing.
- Provides a more level playing field for suppliers Improved quality of service.

Implementing eAuctions

eAuctions do not replace tendering: they are a part of it and provide cost-effective, fast and transparent conclusions to a full tendering process. eAuctions may be based on securing the lowest price, or on most economically advantageous bid (price, payment, terms, supply schedules)

Only those suppliers who have successfully pre-qualified (i.e. they have satisfied all tendering criteria such as quality processes, financial stability and environmental policies) should be invited to participate. Identifying purchases suitable for eAuctions.
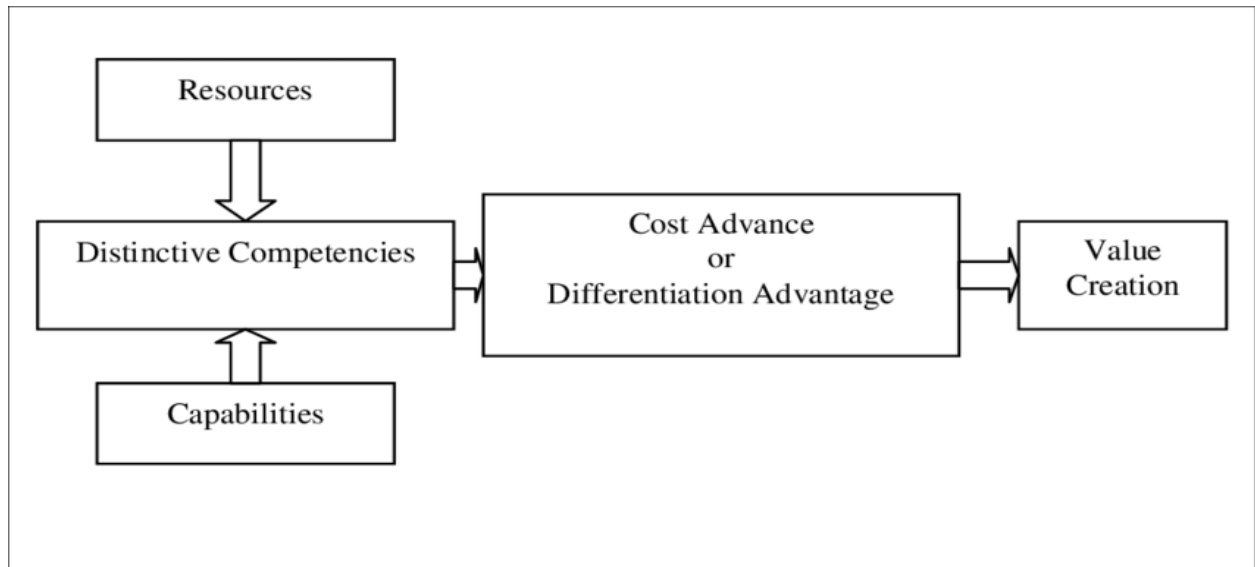
1.6. COMPETITIVE ADVANTAGE

A firm is said to possess a competitive advantage over its rivals, if sustains profits that exceed the average for its industry. The goal of much of business strategy is to achieve a sustainable competitive advantage.

Michael Porter identified two basic types of competitive advantage:

- Cost advantage
- Differentiation advantage

A competitive advantage exists when the firm is able to deliver the same benefits as competitors but at a lower cost (cost advantage), or deliver benefits that exceed those of competing products (differentiation advantage). Thus, a competitive advantage enables them firm to create superior value for its customers and superior profits for itself.

A Model of Competitive Advantage

Cost and differentiation advantages are known as positional advantages since they describe the firm's position in the industry as a leader in either cost or differentiation.

A resource-based view emphasizes that a firm utilizes its resources and capabilities to create a competitive advantage that ultimately results in superior value reation creation. The following diagram combines the resource-based and positioning views to illustate the concept of competitive advantage:

Resources and Cpabilities

According to the resource-based view, in order to develop a competitive advantage the firm must have resources and capabilities that are superior to those of its competitors. Without this superiority, the competitiors simply could replicate what the firm was doing and any advantage quickly would disapper.

Resources are the firm-specific assets useful for creating a cost or differentiation advantage and that few competitors can acquire easily. The following are some examples of such resources.

- Patents and trademarks
- Proprietary know-how
- Installed customer base
- Reputation of the firm
- Brand equity

Capabilities refer to the firm's ability to utilize its resources effectively. An example of a capability is the ability to bring a product to market faster than competitors. Such capabilities are embedded in the routines of the organisation and are not easily documented as procedures and thus are difficult for competitors to replicate.

The firm's resources and capabilities together form its **distinctive competencies.** These competencies enable innovation, efficiency, quality, and customer responsiveness, all of which can be leveraged to create a cost advantage or a differentiation advantage.

Cost Advantage and Differentiation Advantage

Competitive advantage is created by using resources and capabilities to achieve either a lower cost structure or a differentiated product. A firm positions itself in its industry through its choice of low cost or differentiation. This decision is a central component of the firm's competitive strategy.

Another important decision is how broad or narrow a market segment to target. Porter formed a matrix using cost advantage, differentiation advantage, and a broad or narrow focus to identify a set of generic strategies that the firm can pursue to create and sustain a competitive advantage.

Value Creation

The firm creates value by performing a series of activities that Porter identified as the value chain. In addition to the firm's own value-creating activities, the firm operates in a value system of vertical activities including those of upstream suppliers and downstream channel members.

To achieve a competitive advantage, the firm must perform one or more value creating activities in a way that creates more overall value than do competitors. Superior value is created through lower costs or superior benefits to the consumer (differentiation).

Porter's Five Forces Model

Michael Porter described a concept that has become known as the "five corces model". This concept involves a relationship between competitors within an industry, potential competitors, suppliers, buyers and alternative solutions to the problem being addressed. We used the five-forces model as a basic structure and built on it with concepts from the works of many other authors. The result was a model with over 5,000 relational links.
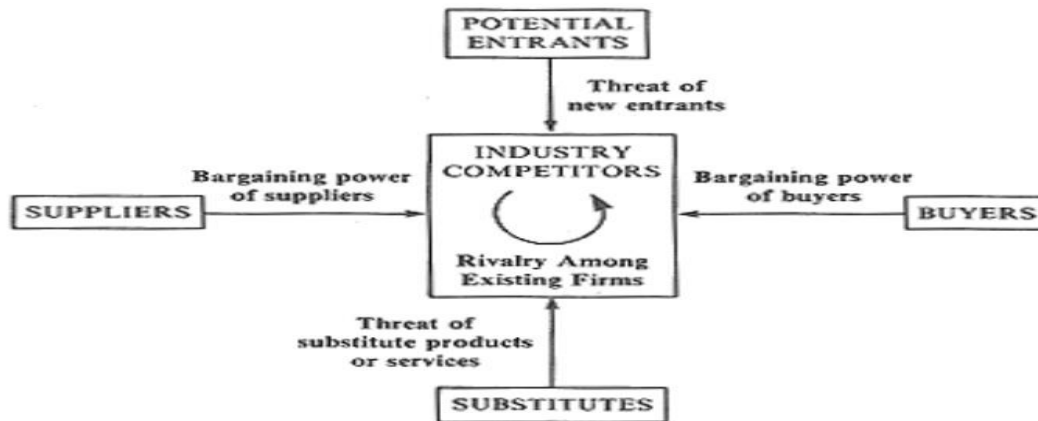
Fig–4.9. Porter's Model for Competitive Forces.

While each industry involves all of these factors, the relational strengths vary. Business Insight uses input from the user to create a unique model of their industry. Then thousands of "rules" are applied to evaluate hundreds of marketing and business concepts as they relate to the user's unique circumstances. This results in a set of analyses, including:

- A success potential rating in eleven key areas
- A list of strategic strengths and weaknesses
- Observations on strategic inconsistencies
- A written critique of your strategy
- A graphic analysis of key marketing concepts
- A written draft of a marketing plan

1.7. E-COMMERCE APPLICATION IN MANUFACTURING

Manufacturing is the transformation of raw materials into finished goods for sale, or intermediate processes involving the production or finishing of semi-manufacturees. The production of goods and services is the result of the efforts of many organisations – a cmplex web of contracts and co-operation known as the supply chain or the value system. As shown below manufacturing requires various Components (e.g. wheels, seats, etc.). Sub-assemblies (e.g. engine, gearbox, etc.) etc., as well as include transportation, storage, paperwork (Orders, Invoices, etc.).
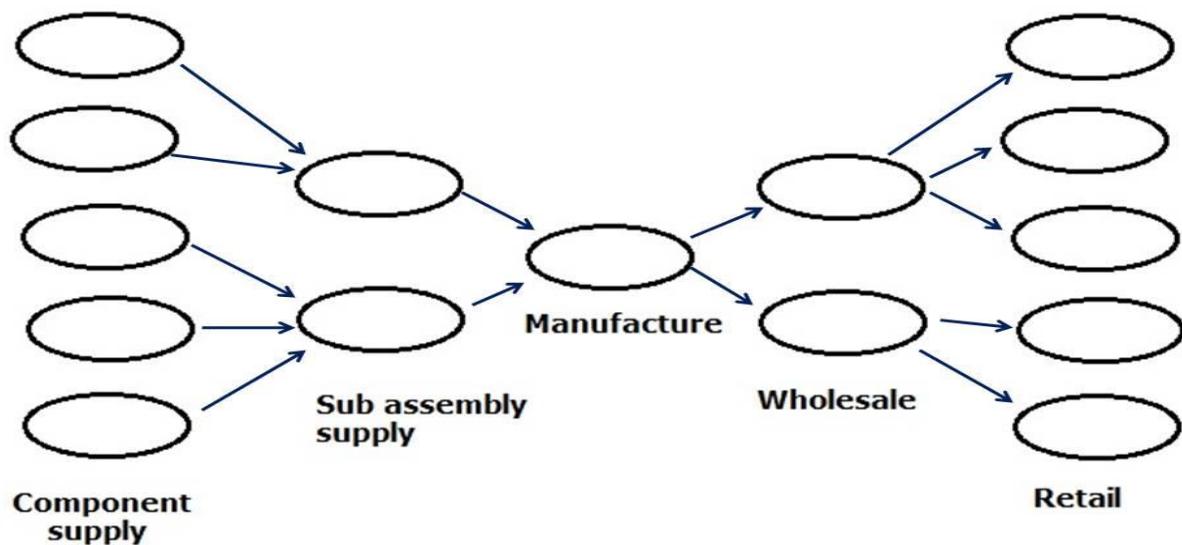
Fig-4.10. Manufacturing (Supply Chain)

Each supply chain transaction adds cost without adding intrinsic value.

As discussed above, E-Commerce can be applied to the supply chain to reduce costs or improve service. In this way e-commerce can enhance manjufacturing process by:

- Enhancing efficiency.
- Reducing cost/cycle time
- Providing accuracy and flexibility
- Supporting Inventory levels

4.8 E-COMMERCE APPLICATION IN WHOLESALE

Wholesale is the sale of goods or services in large quantities and at lower prices to someone other than consumers. Wholesale consists of the sale of goods/merchandise to retailers, to industrial, commercial, institutional, or other professional business users r to other wholesalers and related subordinated services. Sometimes called middleperson, middleman or distributor.

Wholesalers frequently physically assemble, sort and grade goods in large lots, break bulk, repack and redistribute in smaller lots, for example pharmaceuticals; store, refrigerate, deliver and install goods, engage in sales promotion for their customers and label design.

Problems of Traditional Wholesale System

Under the impact of market forces, wholesale systems have undergone great changes. With various types of enterprises entering the wholesale market, traditional wholesale companies and trading corporations are now no longer the mainstream operators. Instead, specialized national or regional wholesale markets have emerged as major players.

However, even these wholesale markets cannot compete with foreign wholesale enterprises, which employ advanced management and operation methods. The operating costs of an enterprise using wholesale markets as its distribution channel are high. The costs include posting resident staff at the wholesale markets, setting up local warehouses, and establishing distribution centers in different regions in order to cover the national market.

Besides, tethered by the quality of the resident staff and geographic limitation, it is difficult for enterprises to obtain the right market information from the wholesale markets. As a result, although enterprises pay high costs, they cannot respond quickly to market demand. Further, as wholesale markets require large land supply and other supporting social resources, they create burden and wastage for the economy. Nevertheless, these wholesale markets have become a major component of wholesale sector characterized by its high input and low output.

Role of E-commerce in Wholesale

In a sound market economy, low operating costs, access t information and quick response are the key to success for an enterprise. Through advanced information technology, enterprises can reach out to the global market and at the same time obtain information from around the world at low cost and high speed.

Lower Transaction Costs.

E-commerce provides a fundamental solution to the problem of diminishing profit margin and brings new opportunities to the stagnant traditional wholesale business. It supports:

- Low operating costs
- Access to information
- Quick response
- Through the Internet, wholesalers can now gain the competitive edge that could only be enjoyed by multinational companies in the past.

E-commerce is developing worldwide at an unprecedented speed. Network economy has made a big impact on traditinal economy. By shortening

the distance between manufacturer and consumer, e-commerce posts serious threats to intermediaries in the supply chain. It also weakens the role of traditional wholesalers. Those that are unable to adapt to the network economy will be hard hit, while those that make use of new technology and seek change will transform into small but powerful new players.

It can be expected that wholesalers in the future will operate more like a portal site of an enterprise where only information gatherers, market analysts, a small number of operation and management personnel and network technicians are visible. Compared to the existing major wholesalers that have large number of employees, they will be much smaller in scale requiring less staff and less physical space. However, the ubiquitous and ever expanding Internet provides them with a cyberspace that will enable them to reach out of their customers throughout the world easily. It also offers them a wide range of information, intermediary and business services.

4.9 E-COMMERCE APPLICATION IN RETAIL

Retailing involves selling products and services to consumers for their personal or family use. Department stores, discount stores and specialty stores like jewelers, toys are all examples of retail stores. Service providers, like dentists, hotels and hair salons and on-line stores, like Amazon.com are also retailers.

Manufacturer   **Distributors/ Wholesalers**   **Retailers**   **Consumers**
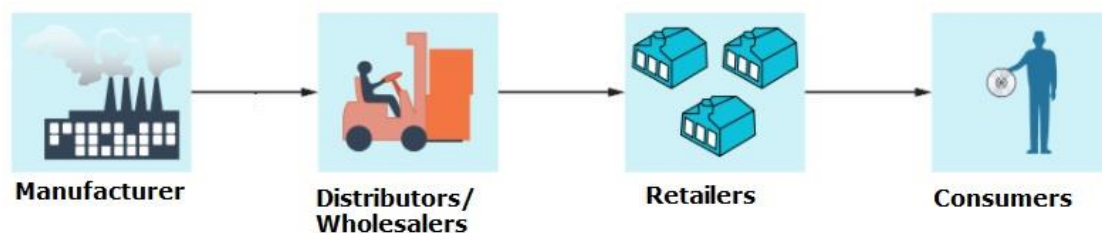
Fig-4.11. Retail Business

Many businesses, like Home Depot, are both wholesalers and retailers because they sell to consumers and building contractors.

Importance of Retailing

As the final link between consumers and manufacturers, retailers are a vital part of the business world. Retailers add value to products by making it easier for manufactures to sell and consumers to buy. It would be very costly and time consuming for you to locate, contact and make a purchase from the manufacturer every time you wanted to buy a candy bar, a sweater or a bar

of soap. Similarly, it would be very costly for the manufactures of these products to locate and distribute them to consumers individually. By bringing multitudes to manufacturers and consumers together at a single point, retailers make it possible for products to be sold, and, consequently, business to be done.

Retailers also provide services that make it less risky and more fun to buy products. They have salespeople on hand who can answer questions, may offer credit, and display products so that consumers know what is available and can see it before buying. In addition, retailers may provide many extra services, from persnal shopping to gift wrapping to delivery, that increase the value of products and services to consumers.

Role of E-commerce in Retailing

Advances in technology, like the Internet, have helped make retailing an even more challenging and exciting field in recent years. The nature of the business and the way retailing is done are currently undergoing fundamental changes. However, retailing in some form will always be necessary. For example, even though the Internet is beginning to make it possible for manufacturers to sell directly to consumers, the very vastness of cyberspace will still make it very difficult for a consumer to purchase every product he or she uses directly. On-line retailers, like Amazon.com, bring together assortments of products for consumers to buy in the same way that bricks-and-mortar retailers do.

In addition, traditional retailers with physical stores will continue to be necessary. Of course, retailers who offer personal services, like hair styling, will need to have face-to-face interaction with the consumer. But even with products, consumers often want to see, touch and try them before they buy. Or, they may want products immediately and won't want to wait for them to be shipped. Also, and perhaps most importantly, in many cases the experience of visiting the retailer is an important part of the purchase. Everything that the retailer can do to make the shoping experience pleasurable and fun can help ensure that customers come back.

4.10 E-COMMERCE APPLICATION IN SERVICE SECTOR

The service sector or the service industry is ne f the three main industrial categories of a developed economy, the others being the secondary industry (manufacturing and primary goods production such as agriculture), and primary industry (extraction such as mining and fishing).

The tertiary sector of industry involves the provision of services to other businesses as well as final consumers. Services may involve the transport, distribution and sale of goods from producer to a consumer as may happen in wholesaling and retailing, or may involve the provision of a service, such as in pest control or entertainment. The goods may be transofrmed in the process of providing or service, as happens in the restaurant industry. However the focus is on people interacting with people and serving the customer rather than manufacturing physical goods.

The service sector consists of the "soft" parts of the economy such as insurance, tourism, banking, retail and education.

Public utilities are often considered part of the tertiary sector as they provide services to people, while creating the utility's infrastructure is often considered part of the secondary sector, even though the same business may be involved in both aspects of the operation.

Issues for service providers

Service providers face obstacles selling services that goods-sellers rarely face. Services are not tangible; making it difficult for potential customers to understand what they will receive and what value it will hold for them. Indeed some, such as consulting and investment services, offer no guarantees of the value for price paid.

Since the quality of most services depends largely on the quality of the individuals providing the services, it is true that boobs "people costs" are a high component of service costs. Whereas a manufacturer may use technology, simplification, and other techniques to lower the cost of goods sold, the service provider often faces an unrelenting pattern of increasing costs.

Differentiation is often difficult. How does one choose one investment advisor over another, since they (and hotel providers, leisure companies, consultants, and others) often seem to provide identical services? Charging a premium for services is usually an option only for the most established firms, who charge extra based upon brand recognition.

Role of E-Commerce in Service Sector

As discussed above e-commerce can be implemented in service sector for gaining competitive advantage by providing strategies for differentiation and cost leadership and customer satisfaction.

E-cmmerce will improve the speed of transactions, reduce management expenditure, increases competitiveness and helpful in the banking, insurance and financial sectors, and real estate, construction, telecom, tourism, postal and logistics serv