Electronic Commerce

1.1 Electronic Commerce:

- Electronic commerce, commonly known as E-commerce is trading in products or services using computer networks, such as the Internet.
- Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems.
- Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as e-mail.

Definition of E-commerce:

Sharing business information, maintaining business relationships and conducting business transactions using computers connected to telecommunication network is called E-Commerce.

Main objectives of e-commerce:

1) Reduced costs

2) Lower product cycle time

3) Faster customer response

4) Improved service quality

1.2 Advantages of E-commerce:

➢ Buying/selling a variety of goods and services from one's home or business

➢ Anywhere, anytime transaction

➢ Can look for lowest cost for specific goods or service

➢ Businesses can reach out to worldwide clients - can establish business partnerships

➢ Order processing cost reduced

➢ Electronic funds transfer faster

➢ Supply chain management is simpler, faster, and cheaper using ecommerce - Can order from several vendors and monitor supplies.

- Production schedule and inventory of an organization can be inspected by cooperating supplier who can in-turn schedule their work

1.3 Disadvantages of E-commerce:

➢ Electronic data interchange using EDI is expensive for small businesses

➢ Security of internet is not very good - viruses, hacker attacks can paralise e-commerce

➢ Privacy of e-transactions is not guaranteed
➢ E-commerce de-personalises shopping

Answer of Tutorial-I (Part-II)

1.4 Business models of e-commerce (TYPES OF E-COMMERCE):

Principal business models

Principal business based on the transacting partners: E-commerce is categorized on the basis of the partners directly involved in the transaction. The following table shows different categories based on following models – Principal business models are –

- Business to consumer known as B2C
- Business to business known as B2B
- Consumer to business known as C2B
- Consumer to consumer known as C2C
- Mobile e-commerce

Table 1.4: Business models of E-commerce

TRANSACTION INITIATED & ACCEPTED BY		TRANSACTION ORIGINATING FROM AND BEING FULFILLED BY			
		Business	Consumer	Government	Peer
	Business	B-to-B	B-to-C	B-to-G	B-to-P
	Consumer	C-to-B	C-to-C	C-to-G	C-to-P
	Government	G-to-B	G-to-C	G-to-G	G-to-P
	Peer	P-to-B	P-to-C	P-to-G	P-to-P

Each principal business model has its own advantages for the business and customer through the characteristics such as:

- The nature of delivery
- Customization
- Seller characteristics
- Price setting mechanism

Business-to-Consumer (B2C)

In a Business-to-Consumer E-commerce environment, companies sell their online goods to consumers who are the end users of their products or services. Usually, B2C E-commerce web shops have an open access for any visitor, meaning that there is no need for a person to login in order to make any product related inquiry.
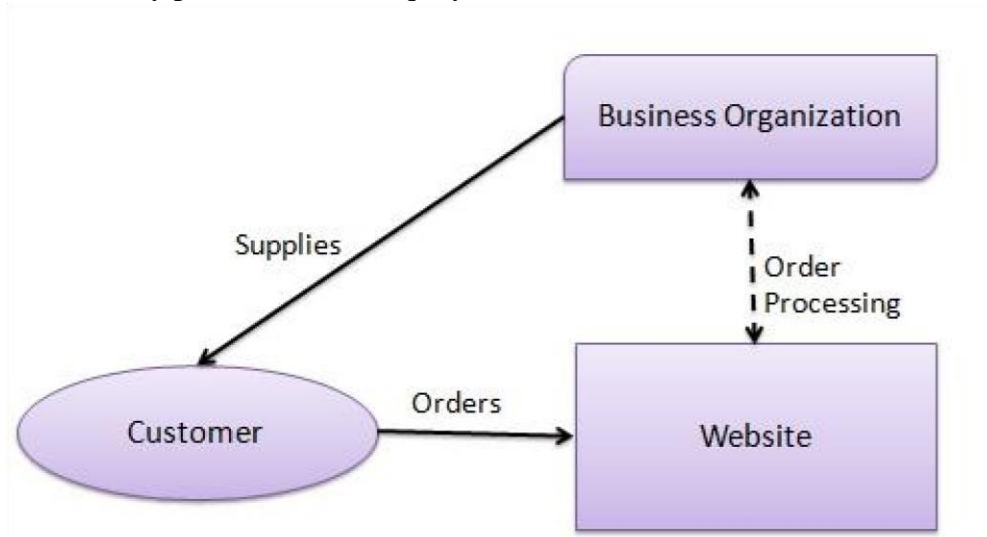
Business –consumer category:

With the growth of the World Wide Web B2C has expanded greatly. There are now shopping malls over the internet which supplies all types of goods from audio CDs to computers. Amazon.com and rediff.com are the examples of this type of business. E-commerce gives the product list supplied by the supplier to the customer. The supplier can sit in the office or home for providing the list. The needs of the customers are fulfilled by customizing products and prices using ecommerce also the queries and problems of the customers are sorted fast from the dealers within few seconds. Efficiency of organizations or value chains is improved using e-commerce. Prompt response and no redundancy results in reduced costs and reduced prices.

Business-to-consumer (B-to-C): It is the exchange of products, information or services between business and consumers in a retailing relationship. The examples of these are amazon.com and dell.com in and lastminute.com in the UK.

Here B stands for business and the C stands for either consumer or customer.

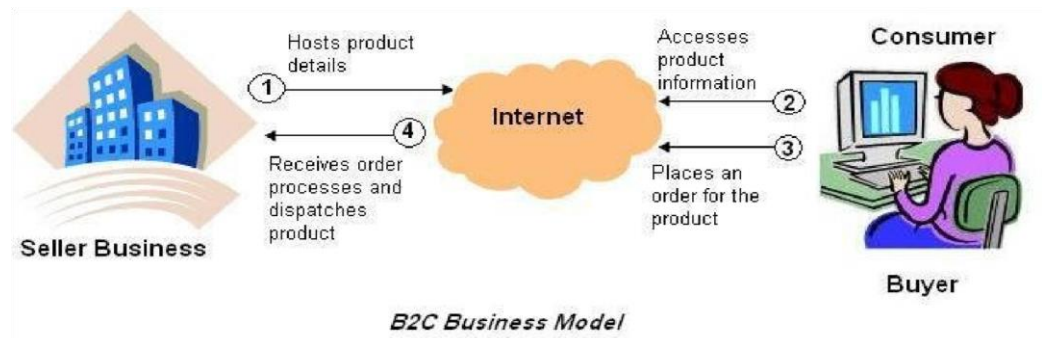## Figure 1.5: B2C Business Model

B2C Business Model

| Table 1.5: LIMITATIONS ON THE GROWTH OF B2C E-COMMERCE	
LIMITING FACTOR	COMMENT
Expensive Technology	Using the internet requires $400 PC (minimal) and a connect charge ranging from about $10 to $60 depending on the speed of service.
Sophisticated Skill set	The skills required to make effective use of internet and e-commerce capabilities are far more sophisticated than say television and news papers
Persistent cultural attraction of physical markets and traditional shopping experiences	For many shopping is a cultural and social event where people meet directly with merchants and other consumers. This social experience is not duplicated yet in digital form (although social shopping is a major new development)
Persistent global inequality limiting access to telephones and personal computers	Much of the world's population does not have telephone service, PCs or cell phones

Business-to-Business (B2B)

In a Business-to-Business E-commerce environment, companies sell their online goods to other companies without being engaged in sales to consumers. In most B2B E-commerce environments entering the web shop will require a log in. B2B web shop usually contains customer-specific pricing, customer-specific assortments and customer-specific discounts.
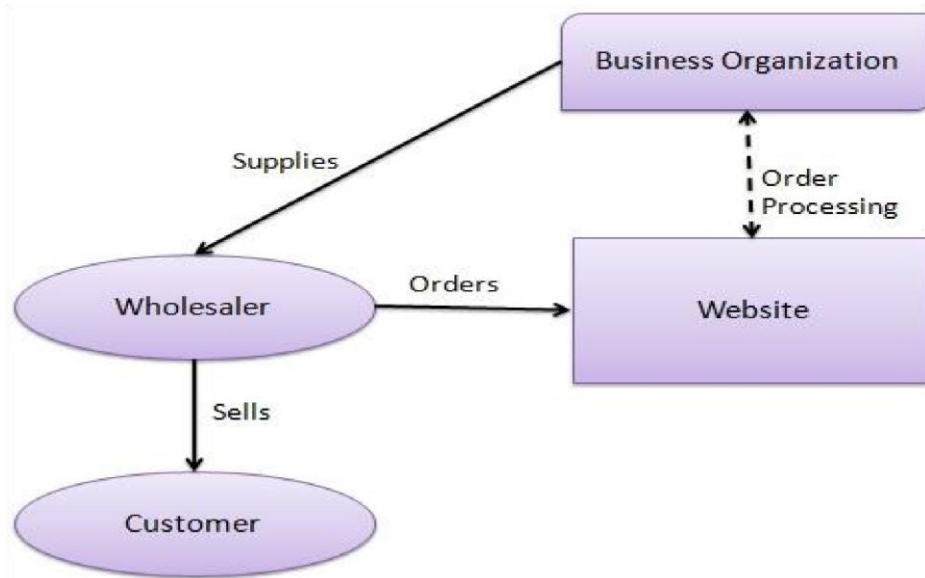
As the name suggests these transactions are between the companies or the businesses including wholesale purchases of services, resources, technology, manufactured parts and components, and capital equipment. It also includes financial transactions such as insurance, commercial credit, bonds, securities and other financial assets. B2B e-commerce refers to the substitution of computer data processing and Internet communications for labor services in the production of economic transactions. Some companies act as intermediaries or middleman between the companies buying and selling goods and services.

B2B business is widely spread difficult to know. According to Jupiter Communications report the total transaction of goods excluding services between businesses in the United States was expected to reach up to $11.5 trillion in 2000, out of that $336 billions are conducted electronically. In 2005, this figure was expected to reach $6.3 trillion out of total of $15.1 trillion. Goldman Sachs in the year 2000 predicted that B2B business worldwide was expected to grow up to $4.5 trillion by 2005. The Gartner Group reports $90 billion B2B transactions in comparison with $16.7 billion B2C transactions using internet including brokerage fees for online financial trading as well as retail sales of goods. Expected Production requirements from B2B are divided into four parts: efficiency of automation of transaction, economical growth of new market intermediaries, merging of demand and supply in categorized exchanges and increase in the rate of vertical integration of companies.

Figure 1.4: Public switched Telephone Network
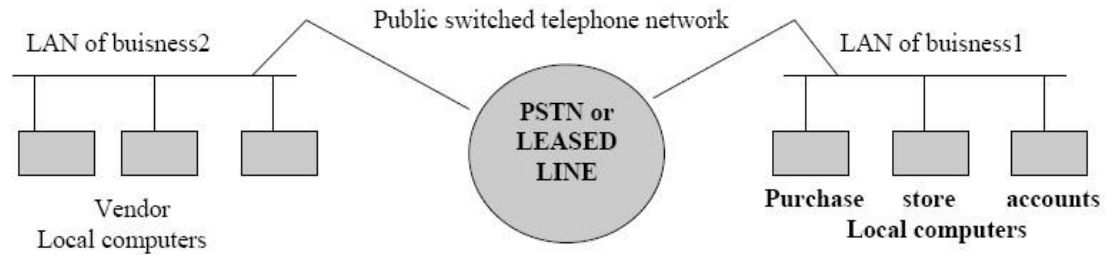
Web-based B-to-B includes:

- ***Direct selling and support to business*** (for example Cisco company) customers can buy as well as can do downloads, patches online, get technical support.

- ***E-procurement*** (also known as industry portals) in which all the works related to purchasing is done by the purchasing agent of the company. He can request for proposals from suppliers and can offer to make purchase at the desired price. For example the auto parts wholesaler (reliableautomotive.com); and the chemical B-to-B exchange (chemconnect.com).

- ***Information sites*** These are the sites giving information about a particular industry for its companies and their employees. This site can be a search site or a trade and industry standards organization site. E.g. newmarket makers.com is a leading portal for B-to-B news. This sites help in automatic exchange of information by saving transaction cost and time. E-commerce can be one of the best tool to integrate your business if it forms a part of the supply chain. B2B ecommerce is growing rapidly. It is used to get serious work done to link suppliers, factories, distributors and retailers directly. B2B e-commerce is efficient to reduce time and cost in the tedious and time consuming tasks. While B2C is used to advertise and sale the product. E.g. Amazon.com B2B involves only the firm's business/trading partners. This includes –

    1) Suppliers

    2) Distributors

3) Dealers

4) Vendors

The entire commerce cycle is included in B2B:

- From awareness to product research

- Supplier sourcing

- Transactions

- Selection

- Fulfillment

- Post sales support

Business to business transactions are also known as marketing transactions. This includes:

- Use of EDI and Electronic mail for purchasing goods and services.

- Buying information and consultancy services □ Submitting requests for proposals.

- Receiving proposals.

80% of the Business-to-Business transactions by internet are for the following purposes-

- ordering parts and supplies

- confirming receipts of deliveries

- taking orders and confirming their shipment

- communications with remote offices and contractors (*ex*. advertising firm)

- tracking inventories
- monitoring of remote activities (building sensors, fuel consumption)

- Stock sales *etc*.

These transactions would account for $3 trillion/year worldwide and is still increasing. This results in replacement of human travel and paper documents by electronic information exchange which in turn results in dematerialization.

Other benefits:

- orders in accurate amount

- orders just in time results in reduction in warehousing

- Improved control of inventories resulting in reduction in energy use and land

- Enhanced quality logistics resulting in less transportation

Consumer-to-Business (C2B)

In a Consumer-to-Business E-commerce environment, consumers usually post their products or services online on which companies can post their bids. A consumer reviews the bids and selects the company that meets his price expectations.
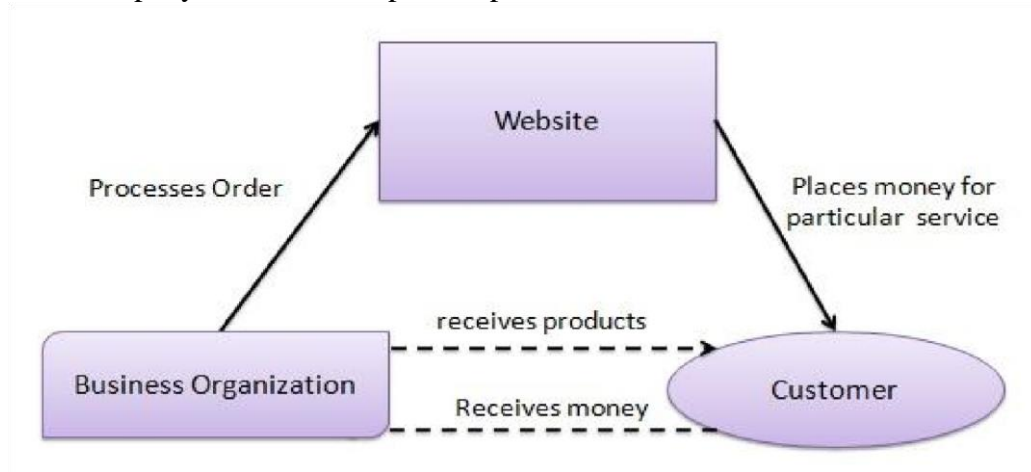
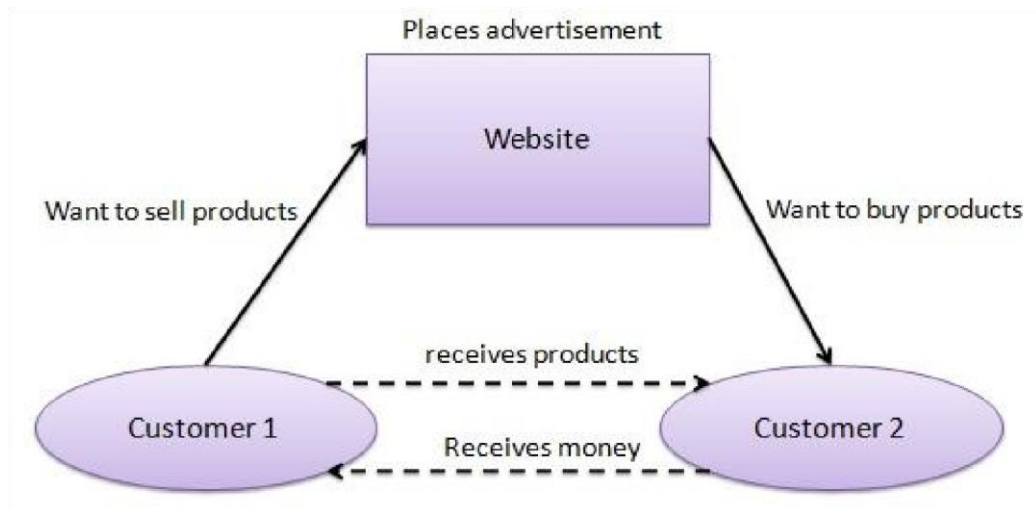
Consumer-to-Business (C-to-B): This is the exchange of products, information or services from individuals to business. A typical example of this is, individuals selling their services to businesses.

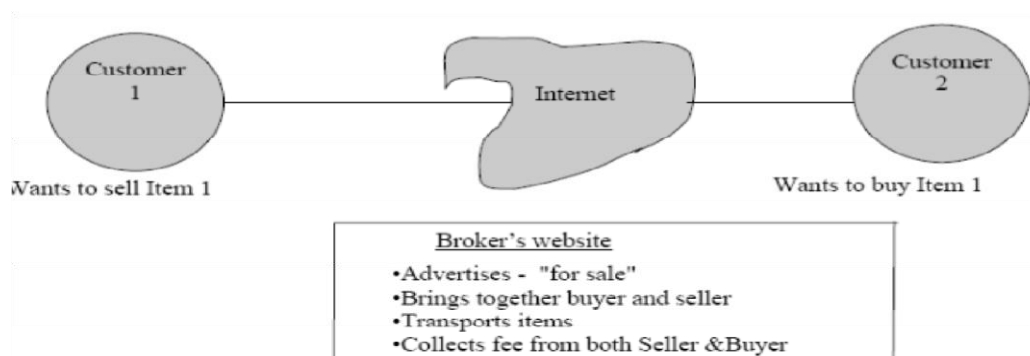**Figure 1.6: C2B Model**
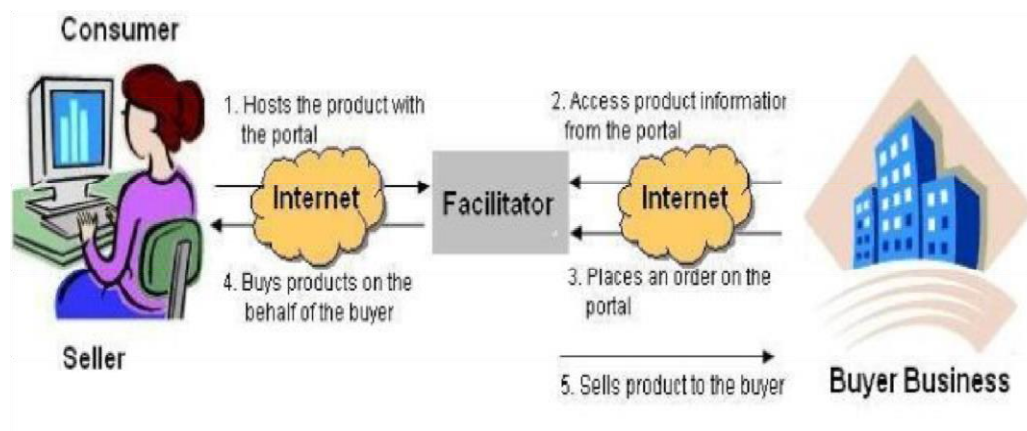
Consumer-to-Consumer (C2C)

In a Consumer-to-Consumer E-commerce environment consumers sell their online goods to other consumers. A well-known example is eBay.

Places advertisement

Website

Want to sell products

Want to buy products

receives products

Customer 1

Customer 2

Receives money

C2C:- The C2C model means transaction between consumers. In C2C category consumer sells directly to another consumer. For example EBay and www.bazee.com are online auction Web sites that provide a consumer to advertise and sell their products online to another consumer.

Here, it is necessary that both the seller and the buyer must register with the auction site. Buyer does not need to pay any amount but the seller has to pay the auction house to sell their products. Buyer and seller meet on the site to conduct deals.

Figure 1.7: Consumer To Consumer Model

Customer 1

Internet

Customer 2

Wants to sell Item 1

Wants to buy Item 1

Broker's website
• Advertises - "for sale"
• Brings together buyer and seller
• Transports items
• Collects fee from both Seller & Buyer

In C2C consumers there is an interaction of consumers directly with other consumers. They exchange information which is of different types -

- *Expert knowledge* There are inquiries from the people and answer is given to the goods of other individuals. For example New York Times joined to abuzz.com website.

Opinions are given by customers about **companies and products for example epinions.com. Some sites like e-bay** and swapitshop.com offer individuals to exchange goods with each other without exchange of money

<mark>E-Governance</mark>:

E-governance is the application of information and communication technology (ICT) for delivering government services, exchange of information communication transactions, integration of various stand-alone systems and services between government-to-customer (G2C), government-to-business (G2B), government-to-government (G2G) as well as back office processes and interactions within the entire government framework.

Through e-governance, government services will be made available to citizens in a convenient, efficient and transparent manner. The three main target groups that can be distinguished in governance concepts are government, citizens and businesses/interest groups. In e-governance there are no distinct boundaries.

Business - to - Government (B2G)

B2G model is a variant of B2B model. Such websites are used by government 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.
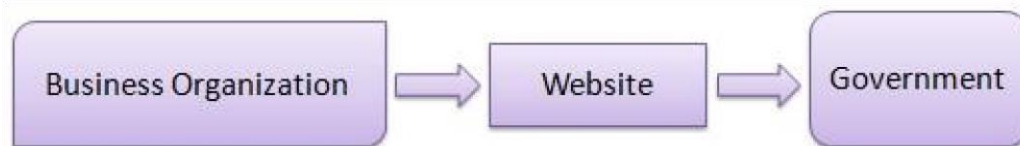

Business-to-Government (B-to-G): Online exchange of information, services and products between business organizations and government agencies. This may include,

1) ***E-procurement services***, It is a service which makes businesses learn about the purchasing needs of agencies and provide services.

2) ***A virtual workplace*** in which a business and a government agency make coordination to do the work online on a contracted project by arranging on-line meetings, review plans and manage progress.

Hiring of on-line applications and databases designed especially for use by government agencies.

Government - to - Business (G2B)

Government uses B2G model website to approach business organizations. Such websites support auctions, tenders and application submission functionalities.
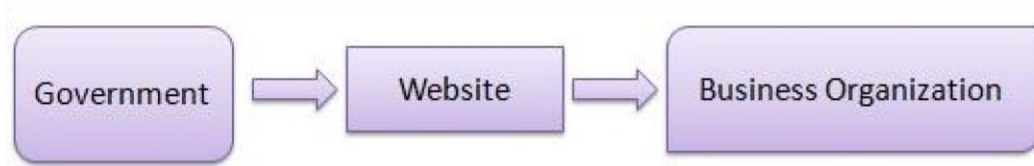
Government - to - Citizen (G2C)

Government uses G2C model website to approach citizen in general. Such websites support auctions of vehicles, machinery or any other material. Such website also provides services like registration for birth, marriage or death certificates. Main objectives of G2C website are to reduce average time for fulfilling people requests for various government services.

Other Business Models of e-commerce

Business-to-Peer Networks (B-to-P):[9] This would be the requirement of hardware, software or other services to the peer networks. An example of this is Napster which provides software and facilities to do peer networking.

Consumer-to-Government (C-to-G): This type of category does not exist as no consumer has provided service to government yet.

Consumer-to-Peer Networks (C-to-P): This is like a peer-to-peer networking is and so is not needed as consumers use their computing facilities while using the peer network.

Government-to-Business (G-to-B): This is related with exchange of information, services and products between government agencies and business organizations. There are many government sites now which allow the exchange between government and businesses such as -

- International Business Information, guidance and advice for international business facilities (e.g. www.dti.org.uk) and sources of money and support (ukishelp),
- A database of industry laws, regulations and government policies.

- Official forms of on-line application and submission (for e.g. company tax, value added tax).

- On-line payment services.

Application of G-to-B improves accuracy, increases speed and reduces costs. Financial incentives are provided for electronic form submission and payment services.

Government-to-Consumer (G-to-C): (Also known as e-government). This are the government sites which provide people with information, forms and facilities to conduct transactions using which user can pay bills and submit official forms like tax returns online.

Government-to-Consumer (G2C) model: In this model, the government contacts with the consumers. By using G2C model tax payments laws can be applied on the consumers by the government over the internet.

- **Consumer-to-Government (C2G) model:** In this model, an individual consumer interacts with the government. For example, income tax or house tax payment online by the individual. As the consumer contacts with government, this type of transaction falls under C2G model.

Government-to-Government (G-to-G): (Also known as e-government). These are the type of transactions between two governments within countries connecting local governments as well as international governments, within European Union, which is the development at the beginning to join different national systems. For example, transactions like buying of oil from Arabian government by American government where there is a transaction between two governments.

Government-to-Peer Network (G-to-P): No example of this type is in existence till now.

Peer–to-Peer Network (P-to-P): This type of networking exists with parties having same capabilities; any party can start a communication session. Internet is used to exchange files and computer resources directly or through a mediating service in recent peer to peer application. Peer to peer technology does not need central web server and any other type of intermediaries to exchange files and computer resources over internet. However P2P technology uses super servers as intermediaries to speed up the process. Since 1999, Business enterprise capitalists and entrepreneurs are using various aspects of peer to peer technology into Peer to peer (P2P) e-commerce. There are many successful applications of P2P only the exception is of illegal downloading of copyrighted music. In the year 2001, a

website named Napster.com was created which offered to share online music files was the well known example of peer-to-peer e-commerce but it was put out of business because of series of negative court decisions. Two more websites with the names Kazaa and Grokster were having a similar website but they were also subjected to legal challenge. In the year 2002 Recording Industry of America a trade organization of the largest recording companies filed a case against Kazaa and Grokster for violating copyright law. The company was blamed for enabling and encouraging member to exchange copyrighted music tracks without paying to the owner. In June 2005, in one case, the Supreme Court issued a decision against the file sharing networks.

Peer Network-to-Consumer (P-to-C): These are nothing but the peer to peer networking services offered to different consumers who are the basic part of peer network.

Peer Network-to-Government (P-to-G): This type is not used till now but if it is used in future it would be like P-to-B but instead of business, the transaction is with government.

Peer Network-to-Business (P-to-B): This type of networking provides resources to business. For example, the tasks requiring high capacity processing power such as the spare processing capacity of individual machines on the network to solve mathematical problems or intensive and repetitive DNA analyses are done using peer network resources. This model was used to divide the customers into different categories and to find the needs, requirements, business processes and services of different customer.

1.5 E-Commerce Categories or Parts of e-commerce (Scope of E-commerce):

See from class notes

Basically e-commerce means commercial transactions on the net. Depending on the type of commercial transaction e-commerce is classified into different parts.
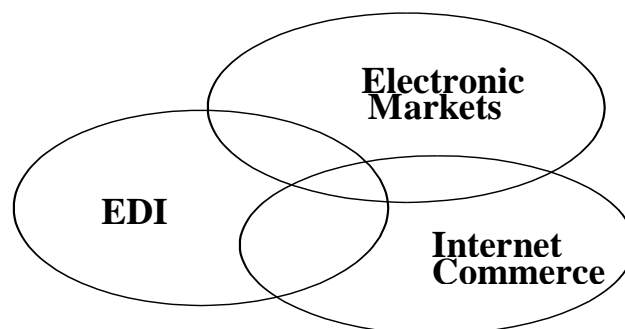

fig:- There are mainly 3 types

1. Electronic Markets

It is mainly about searching for a particular product or service. Airline Reservation system is the biggest example of this type.

<div align="center">OR</div>

Present a range of offerings available in a market segment so that the purchaser can compare the prices of the offerings and make a purchase decision.

Example: Airline Booking System

2. Electronic Data Interchange (EDI)

EDI is exchange of all the commercial documents between different commercial organizations. It is widely used by the retailers and vehicle assemblers when trading with their suppliers.

<div align="center">OR</div>

• It provides a standardized system

• Coding trade transactions

• Communicated from one computer to another without the need for printed orders and invoices & delays & errors in paper handling

• It is used by organizations that a make a large no. of regular transactions

Example: EDI is used in the large market chains for transactions with their suppliers

3. Internet Commerce

It is generally used for once off trading transactions. It is used for advertising goods and services. It is used both for B2B and B2C transactions.

<div align="center">OR</div>

• It is use to advertise & make sales of wide range of goods & services.

• This application is for both business to business & business to consumer transactions. Example: The purchase of goods that are then delivered by post or the booking of tickets that can be picked up by the clients when they arrive at the event.

1.6 Threats of E-commerce:

Hackers attempting to steal customer information or disrupt the site a server containing customer information is stolen.

Imposters can mirror your ecommerce site to steal customer money
Authorised administrators/users of an ecommerce website downloading hidden active content that attacks the ecommerce system.

- A disaffected employee disrupting the ecommerce system.
- It is also worth considering where potential threats to your ecommerce site might come
- from, as identifying potential threats will help you to protect your site. Consider:
- Who may want to access your ecommerce site to cause disruption or steal data; for example competitors, ex-employees, etc.
- What level of expertise a potential hacker may possess; if you are a small company that would not be likely to be considered a target for hackers then expensive, complex security may not be needed.

1.7   Features of E-Commerce:

➢ **Ubiquity**

Internet/Web technology is the marketplace is extended beyond traditional available everywhere: at work, at home, and boundaries and is removed from a temporal and elsewhere via mobile devices, anytime. geographic location. ―Marketspace‖ is created; shopping can take place anywhere. Customer convenience is enhanced, and shopping costs are reduced.

➢ **Global reach**

The technology reaches Commerce is enabled across cultural and across national boundaries, around the earth. national boundaries seamlessly and without modification.

―Marketspace‖ includes potentially billions of consumers and millions of businesses worldwide.

➢ **Universal standards**

There is one set of There is one set of technical media standards technology standards, namely Internet across the globe.

➢ **Richness**

Video, audio, and text messages Video, audio, and text marketing messages are are possible. integrated into a single marketing message and consuming experience.

➢ **Interactivity**

The technology works Consumers are engaged in a dialog that through interaction with the user. dynamically adjusts the experience to the individual, and makes the consumer a coparticipant in the process of delivering goods to the market.

> **Information density**

The technology Information processing, storage, and reduces information costs and raises quality. communication costs drop dramatically, while currency, accuracy, and timeliness improve greatly. Information becomes plentiful, cheap, and accurate.

> **Personalization/Customization**

The Personalization of marketing messages and technology allows personalized messages to customization of products and services are be delivered to individuals as well as groups. based on individual characteristics.

E-Commerce vs Traditional Commerce

- E- Commerce is about the sale and purchase of goods or services by electronic means, particularly over the internet. In a pure e-commerce system, transactions take place via electronic means. In this case, you will access a cyber bookstore and download a digital book from a server computer.
- In a physical or traditional commerce system, transactions take place via contact between humans usually in a physical outlet such as a bookstore.
  For e.g. if you want to buy a book, you will go to a physical bookstore and buy the physical book from a salesman.
- E-Commerce is more suitable for standard goods, intangible goods; whereas traditional commerce is more suitable for non standard goods, perishable goods, and expensive goods.
- Complex products such as cars are better served by integrating e-commerce and physical commerce.

Difference between Traditional Commerce and E-commerce

SNO	Traditional Commerce	E-commerce
1.	Customers can easily identify and authenticate a merchant by seeing him directly.	It is not easy in this case.
2.	Customers can directly talk to merchant. Communication pages is not in the hands of a third party.	Customers can only see the representation & can only see the web.

SNO	Traditional Commerce	E-commerce
3.	Customers can interact with other customers and gain feedback about merchant from other customers.	Customers cannot interact with other customers.
4.	It is not available all the time	It is always available 24*7*365 hours.
5.	It is a slow method.	It is a fast method.

| SNO	Traditional Commerce	E-commerce
6.	Customers just give cash to merchant & there is no need to give their name or address. So there is no worry about personal information.	Customers have to give their personal information to purchase the product.

E-Business

- "E-Business is the conduct of business on the Internet, not only buying and selling but also servicing customers and collaborating with business partners".
- E-Business means connecting critical business systems directly to customers, vendors and suppliers- via the Internet, Extranet and Intranets.
- Therefore it means using electronic information to boost performance and create value by forming new relationships between and among businesses and customers.
- One of the first to use the term was IBM, in October 1997, when it launched a campaign built around e-business.

E-Business enables organizations to accomplish the following goals:-

- Reach new markets.
- Create new products or services.
- Build customer loyalty
- Make the best use of existing and emerging technologies.

- Achieve market leadership and competitive advantage.
- Enrich human capital.
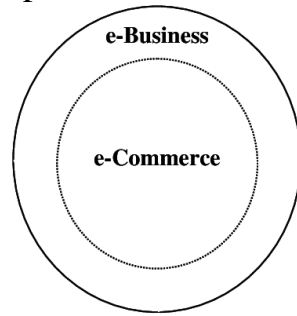
e-Commerce is a subset of
e-Business

Functions of E-Commerce

- **Marketing**:- One of the areas it impacts particularly is direct marketing. In the past this was mainly door-to-door, home parties (like the Tupperware parties) and mail orders using catalogues or leaflets. This moved to telemarketing and TV selling with the advance in television technology and finally developed into e-marketing.
- **Human Resource Management**:- Issues of on-line recruiting, home working and 'entrepreneurs' working on a project by project basis replacing permanent employees.
- **Business law and ethics**:- The different legal and ethical issues that have arisen as a result of a global 'virtual' market. Issues such as copyright laws, privacy of customer information etc.
- **Management Information System**:- Analysis, design and implementation of e-business systems within an organization ; issues of integration of front-end and back-end systems.
- **Product Operations and Management**:- The impact of on-line processing has led to reduced cycle time. It takes seconds to deliver digitized products and services electronically; similarly the time for processing orders can be reduced by more than 90 percent from days to minutes.

- **Finance and Accounting**:- On-line banking ; issues of transaction costs ; accounting and auditing implications where 'intangible' assets and human capital must be tangibly valued in an increasing knowledge based economy.
- **Economy**:- The impact of E-commerce on local and global economies; understanding the concepts of a digital and knowledge based economy and how this fits into economic theory.

E-Commerce Applications

- E-Marketing
- E-Advertising
- E-Banking
- E-Learning
- Mobile Commerce
- Online Shopping
- Entertainment

• E-Marketing:-
- E-Marketing also known as Internet Marketing, Online Marketing, Web Marketing.
- It is the marketing of products or services over the internet.
- It is consider to be broad in scope because not refers to marketing on the internet but also done in Email and wireless media.
- E-Marketing ties together the creative and technical aspects of the internet, including design development, advertising and sales.
- Internet marketing is associated with several business models i.e., B2C, B2B, C2C.
- Internet marketing is inexpensive when examine the ratio of cost to the reach of the target.

• E-Advertising:-
- It is also known as online advertising it is a form of promotion that uses internet and World Wide Web to deliver marketing messages to attracts customers.
    Example: Banner ads, Social network advertising, online classified advertising etc.
- The growth of these particular media attracts the attention of advertisers as a more productive source to bring in consumers.

• E-Banking:-
- Means any user with a personal computer and browser can get connected to his banks, website to perform any of the banking functions. In internet banking system the bank has a centralized data base i.e., web-enabled.
- Best example for E-Banking is ATM.
- An ATM is an electronic fund transfer terminal capable of handling cash deposits, transfer, Balance enquiries, cash withdrawals, and pay bills.
- SERVICES THROUGH E-BANKING:
- Bill Payment Service
- Fund Transfer
- Investing through Internet Banking
- Shopping

• E-Learning:-
- E-Learning comprises all forms of electronically supported learning and teaching.
- E-Learning applications and processes include web-based learning, computer-based learning.
- Content is delivered via. The internet, intranet/extranet, audio, or video tape, satellite TV.

☐ E-Learning is naturally suited to distance and flexible learning, but can also be used conjunction with face-to-face teaching.

☐ E-Learning can also refer to the educational website such as those offering learning scenarios worst and interactive exercises for children.

☐ A learning management system (LMS) is software used for delivering, tracking, and managing training /education.

- **Mobile Commerce**:-

☐ Mobile Commerce also known as M-Commerce, is the ability to conduct, commerce as a mobile device, such as mobile phone.

☐ Banks and other financial institutions use mobile commerce to allow their customers to access account information and make transactions, such as purchasing, withdrawals etc.,

☐ Using a mobile browser customers can shop online without having to be at their personal computer.

- SERVICES ARE:

    1. Mobile ticketing

    2. Mobile contract purchase and delivery mainly consumes of the sale of ring tones, wallpapers and games of mobile phones.

    3. Local base services

- Local discount offers

- Local weather

    4. Information services

- News

- Sports, Scores

- **Online Shopping**:-

☐ Online shopping is the process whereby consumers directly buy goods or services from a sell in real time, without intermediary services over the internet.

☐ An online shop, e-shop, e-store, internet shop web shop, web store, online store, or virtual shop evokes the physical analogy of buying products or services in a shopping center.

☐ In order to shop online, one must be able to have access to a computer, a bank account and debit card.

☐ Online shoppers commonly use credit card to make payments , however some systems enable users to create accounts and pay by alternative means ,such as

- Cheque.

- Debit cards.

- Gift cards

☐ Online stores are usually available 24 hours a day

- **Entertainment**:-

☐ The conventional media that have been used for entertainment are

    1. Books/magazines.

    2. Radio.

    3. Television/films.

    4. Video games.

    Online books /newspapers, online radio, online television, online firms, and online games are common place in internet where we can entertain.

☐ Online social networking websites are one of the biggest sources of E-entertainment for today's tech-savvy generation.