

Unit-1 Introduction to E-Commerce

Definitions and Concept: Defining E-Business, Pure Versus Partial EC, EC Framework, Classification of EC, Benefits of E-commerce, Electronic Market, Role of Internet and Web in E-Commerce, The limitations Barriers of EC, Social Networking and Social Network Services

M-Commerce: Concept, Scope, Attributes, Benefits, Location-based M-Commerce, M-Commerce Infrastructure, Location-Based Services and Application. [7 LH]

Commerce

Commerce is a division of trade or production which deals with the exchange of goods and services from producer to final consumer.

- It comprises the trading of economic values as goods, services, information or money between two or more entities.
- Commerce primarily expresses the abstract notions of buying and selling.

E-commerce

Electronic commerce, in a broad sense, is the use of computer networks to improve organizational performance. Increasing profitability, gaining market share, improving customer service, and delivering products faster are some of the organizational performance gains possible with electronic commerce. Electronic commerce is more than ordering goods from an on-line catalog. It involves all aspects of an organization's electronic interactions with its stakeholders, the people who determine the future of the organization. Thus, electronic commerce includes activities such as establishing a Web page to support investor relations or communicating electronically with college students who are potential employees. In brief, electronic commerce involves the use of information technology to enhance communications and transactions with all an organization's stakeholders.



The term "Electronic Commerce" (or e-Commerce) refers to the use of an electronic medium to carry out commercial transactions. Most of the time, it refers to the sale of products via Internet, but the term e-Commerce also covers purchasing mechanisms via Internet.

- It is commonly known as electronic Commerce.
- It consists of buying and selling goods and services over an electronic system such the internet.
- Electronic commerce (EC) refers to networks (e.g., intranets) to purchase, sell, transport, or trade data, goods, or services.
- E-commerce is the purchasing, selling & exchanging goods and computer network or internet through which transactions or terms of sale are performed electronically. services Over computer network or internet through which transaction or items of sale are performed electronically.

E-Commerce or modern Electronic Commerce is a methodology of business which addresses the need of business organizations, vendors and customers to reduce cost and improve the quality of goods and services while increasing the speed of delivery. E-commerce refers to paperless exchange of business information using following ways:

- Electronic Data Exchange (EDI)
- Electronic Mail (e-mail)
- Electronic Bulletin Boards
- Electronic Fund Transfer (EFT)
- Other Network based technologies.

Electronic commerce under different Perspective:

- **Communications Perspective:** E-commerce is the delivery of information, product or services and payments over the networks (internet) or any electronic means.
- **Business Process Perspective:** E-Commerce is the application of technology towards the automation of business transactions and workflow.
- **Service Perspective:** E-Commerce is the tool that addresses businesses, customers and management to cut service cost while improving the quality of goods and services with increasing speed of delivery.
- **Online Perspective:** E-commerce provides the capability of buying and selling products, services and information on the internet and other online services or platforms.

How E-Commerce works:

The working of e-commerce is like that of any offline or retail business. The main three functions in e-commerce are receiving orders, processing order information, and shipping. Let us look at the detailed understanding of the virtual process that takes place from computer surfing to dispatch. **These steps are:**

1. **The business created an e-commerce website:** You can use an e-commerce website builder to launch an online store, sometimes for free.
2. **The business lists products and services:** Once your website is live, you can add products in a variety of colors and sizes. The best online store builders let you list unlimited products. You may also be able to list products on social media websites like Instagram or third-party marketplaces like Amazon.
3. **A customer chooses what they want to buy:** Shoppers can browse your catalog and place items in their online shopping cart.
4. **The customer uses a online payments to pay for it:** You'll need a payment processing service to facilitate these transactions, but one may come built into your e-commerce website.
5. **The business receives the order:** Most online store builders include a dashboard where you can see all the orders you've received and track their status.
6. **The business ships the product or provides the service:** Lastly, you'll need to give the customer what they paid for. Again, some e-commerce website builders offer tools to help, including shipping label printing and package tracking.



E-Business:

The term e-business came into existence in the year 1996. Conducting business activities over the internet or any other computer network is known as e-business or Electronic Business. e-business conducts all business activities, like trade, commerce, and industry; electronically. It is about using the internet and other computer networks and technologies to provide superior customer service, increase sales and reduce costs. Computer networks, which are more secure, effective, and efficient as compared to the internet are often used in e-business.

E-Business refers to the broader definition of E-Commerce, not just the buying and selling of goods and services. It is the way of conducting all kinds of business activities online such as customer services, collaborating with business partners, delivering e-learning materials, conducting electronic transactions within organizations and so on. E-business is not only the activities involving in buying and selling through internet it includes all business activities. E-commerce is a subset of E-business. E-Commerce refers to the performing online commercial activities, transactions over internet. E-Business refers to performing all type of business activities through internet.

Types of E-Commerce based on behavior:

- Pure Electronic Commerce
- Partial Electronic Commerce

1. **Pure Electronic Commerce:** Pure electronic commerce, often referred to as "pure e-commerce," involves transactions that are conducted entirely online. In this model, the entire transaction process, from browsing products/services to making payments and receiving goods or services, occurs electronically through the internet. Pure e-commerce businesses typically do not have physical storefronts or rely minimally on physical interactions.

Characteristics of Pure E-commerce:

- Transactions are entirely digital and directed online.
 - Customers interact with the business through digital channels only (websites, apps, etc.).
 - Products and services may be digital (e.g., software downloads, e-books) or physical (e.g., clothing, electronics).
 - Examples include online retail stores like Amazon, digital services like Netflix, and digital marketplaces like eBay.
2. **Partial Electronic Commerce:** Partial electronic commerce, also known as "partial e-commerce" or "partial brick-and-click," describes businesses that operate both online and offline. These businesses have a presence in physical locations as well as online platforms (e-commerce platforms or websites).

Characteristics of Partial E-commerce:

- Businesses have both physical stores and online stores.
- Customers can choose to shop either online or in physical locations.
- Transactions can occur through online platforms or in-store interactions.
- Examples include traditional retailers that also have e-commerce websites, such as Walmart, Target, and Best Buy.

Key Differences:

- **Nature of Transactions:** Pure e-commerce transactions are conducted entirely online, whereas partial e-commerce involves transactions through both online and offline channels.
- **Business Store:** Pure e-commerce businesses often operate only in the digital store, while partial e-commerce businesses have a physical store as well as online operations store.
- **Customer Interaction:** Pure e-commerce depends heavily on digital interactions, while partial e-commerce offers customers the flexibility to interact in person or online.

Both pure and partial electronic commerce models have their advantages and cater to different customer preferences and business strategies. Each activity can be done physically or digitally.

Features of E-commerce:

Online Presence: E-commerce is presented entirely online, allowing businesses to reach a global audience without the limitations of physical locations.

Digital Products and Services: E-commerce facilitates the sale of digital goods such as software, e-books, music, and online courses, as well as services like software as a service (SaaS), referring, and freelance work.

Transaction Processing: E-commerce platforms provide secure payment gateways to process transactions electronically, ensuring convenience and security for both buyers and sellers. Which leads to a Non-Cash Payment system.

Global Reach: E-commerce enables businesses to reach customers worldwide, breaking down geographical barriers and expanding market reach significantly.

24/7 Availability: Unlike traditional brick-and-mortar stores, e-commerce stores are accessible 24/7, allowing customers to shop at their convenience.

Personalization: E-commerce platforms often utilize customer data to offer personalized shopping experiences through features like product recommendations, targeted advertising, and customized content.

Customer Reviews and Feedback: E-commerce platforms often feature customer review systems that help build trust and influence purchasing decisions.

Data Security: E-commerce platforms prioritize data security to protect sensitive customer information and maintain trust.

Analytics and Reporting: E-commerce platforms provide tools for businesses to analyze sales data, customer behavior, and other metrics to optimize operations and marketing strategies.

Customer Support: E-commerce businesses often provide various channels for customer support, including live chat, email, and phone, to address inquiries and issues promptly.

Limitation of EC

Technical Limitations

- Lack of system security
- Software development tools are still evolving and changing rapidly.
- Vendors may need special web servers and other infrastructures, in addition to the network servers.
- Some e-commerce software might not fit with some hardware

Non- Technical Limitations

- Initial cost
- User resistance
- Security / Privacy
- Lack of touch or feel of products during online shopping.
- E-Commerce applications are still evolving and changing rapidly.
- Internet access is still not cheaper and is inconvenient to use for many customers living in remote villages.

Limitation and barriers of EC

Technological limitations

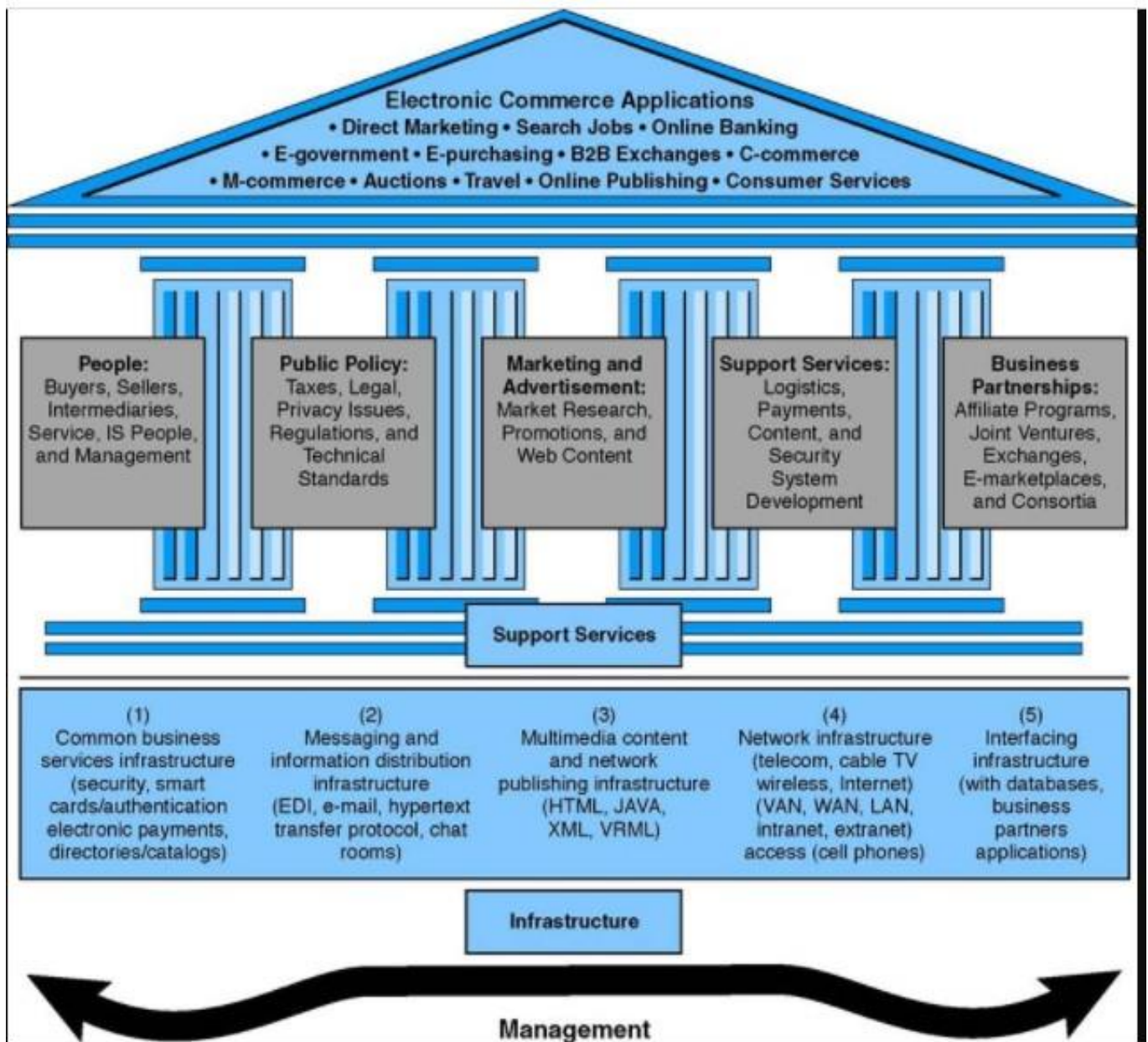
- Need for universal standards for quality, security, and reliability
- The telecommunications bandwidth be insufficient, especially for m-commerce, videos, and graphics
- Software development tools are evolving.
- It is difficult to integrate Internet and EC software with some existing (especially legacy) applications and databases.
- Special Web servers are needed in addition to the network servers, which add to the cost of EC.
- Internet accessibility is still expensive and/or inconvenient for many Large-scale B2C requires special automated warehouses for order fulfillment.

Non- Technological limitations

- Security and privacy concerns deter from buying.
- Lack of trust in sellers, in computers, and buying faceless transactions hinders buying.
- Resistance to change
- Many legal and public policy issues are not resolved or are not clear
- National and international government regulations sometimes get in the way
- Global competition intensifies
- It is difficult to measure some of the costs and benefits of EC
- Not enough customers. Lack of collaboration along the supply chain Management

E-Commerce Framework:

In general, a framework is a real or conceptual structure intended to serve as a support or guide for building of something that expands the structure in something useful. E-commerce framework is the framework for establishing a proper functioning of an E-business.



The Electronic commerce application can only be executed or performed or used able if following properties are fulfilled.

1. Right Information
2. Technology Infrastructure
3. Support and Services

E-commerce management coordinates the applications, infrastructure and management. It also includes internet, marketing and advertisement. Infrastructure includes:

1. Common Business Services Infrastructure
 - a. Security
 - b. Smart Cards/ Authentication
 - c. Electronic Payments
 - d. Directories/ Catalogs
2. Messaging and information distribution Infrastructure
 - a. Email
 - b. Hypertext Transfer Protocol
 - c. Chat rooms

3. Multimedia Content and network publishing infrastructure
 - a. HTML
 - b. JAVA
 - c. XML (Extensible Markup Language)
 - d. VRML (Virtual Reality Modeling Language)
4. Network Infrastructure
 - a. Telecom
 - b. Cable TV
 - c. Internet
 - d. VAN (value-added network)
 - e. WAN
 - f. LAN
 - g. Intranet
5. Interfacing infrastructure:
 - a. Databases
 - b. Business partners applications

Electronic Market

Due to the increase in online users, businesses increasingly rely on e-marketing (electronic marketing) to support their marketing efforts. E-marketing is often referred to as Online Marketing or Internet Marketing. E-marketing is the marketing of goods and services through the internet. It makes it easy for businesses to reach a wide range of potential customers due to the large number of people using the internet today.



Basically, an electronic market is a website where companies can buy from and sell to each other using a common technology platform. They are the commerce sites on the internet that allow many buyers and suppliers to meet and trade with each other. They are also known as electronic marketplaces, online markets or e-hubs.

- EC can be conducted in an electronic market (e-marketplace), an online location where buyers and sellers conduct commercial transactions such as selling goods, services, or information.
- Electronic markets are connected to sellers and buyers via the Internet or to its counterpart within organizations, an intranet. Polish
- An intranet is a corporate or government internal network that uses Internet tools, such as Web browsers and Internet protocols.
- Another computer environment is an extranet, a network that uses Internet technology to link intranets of several organizations in a secure manner.
- Examples: E-commerce sites, online stock market, etc.

Types of E-Marketing

E-marketing can be broken down into eight main categories:

- **Search engine optimization (SEO):** Search engine optimization is the process of improving the quality and quantity of website traffic to a website or a web page from search engines.
- **Pay-per-click (PPC):** Pay-per-click is an internet advertising model used to drive traffic to websites, in which an advertiser pays a publisher when the ad is clicked.
- **Social media marketing:** Social media marketing is the use of social media platforms and websites to promote a product or service. Although the terms e-marketing and digital marketing are still dominant in academia, social media marketing is becoming more popular for both practitioners and researchers.



- **Content marketing:** Content marketing is a marketing strategy used to attract, engage, and retain an audience by creating and sharing relevant articles, videos, podcasts, and other media. This approach establishes expertise, promotes brand awareness, and keeps your business top of mind when it's time to buy what you sell.
- **Email marketing:** Email marketing is when a business uses email to communicate and connect with their customer base. This is a form of direct marketing used to inform customers, increase brand awareness, and promote specific products and services.
- **Mobile marketing:** Mobile marketing is an advertising activity that uses mobile devices, such as text promos and apps via push notifications. Mobile marketing audiences are grouped by behaviors and not by demographics. Mobile marketing is a subset of mobile advertising.
- **Affiliate marketing :** Affiliate marketing is a marketing model in which third-party publishers promote a merchant's goods or services and receive a percentage of the sales or web traffic made as a result.
- **Influencer marketing:** Influencer marketing is a form of social media marketing involving supports and product placement from influencers, people and organizations who have expert level of knowledge or social influence in their field.

Characteristics of E-markets

- Online platform for large number of buyers and sellers
- Maintain electronics transaction and EDI (Electronic Data Interexchange)
- Provide legal infrastructure and proper integration of trading processes like
 - ☞ Search
 - ☞ Valuation
 - ☞ Payment
 - ☞ Negotiate
 - ☞ Logistics
 - ☞ Authentication
- Maintain online community forums and discussion groups
- Advertisement and marketing to promote products

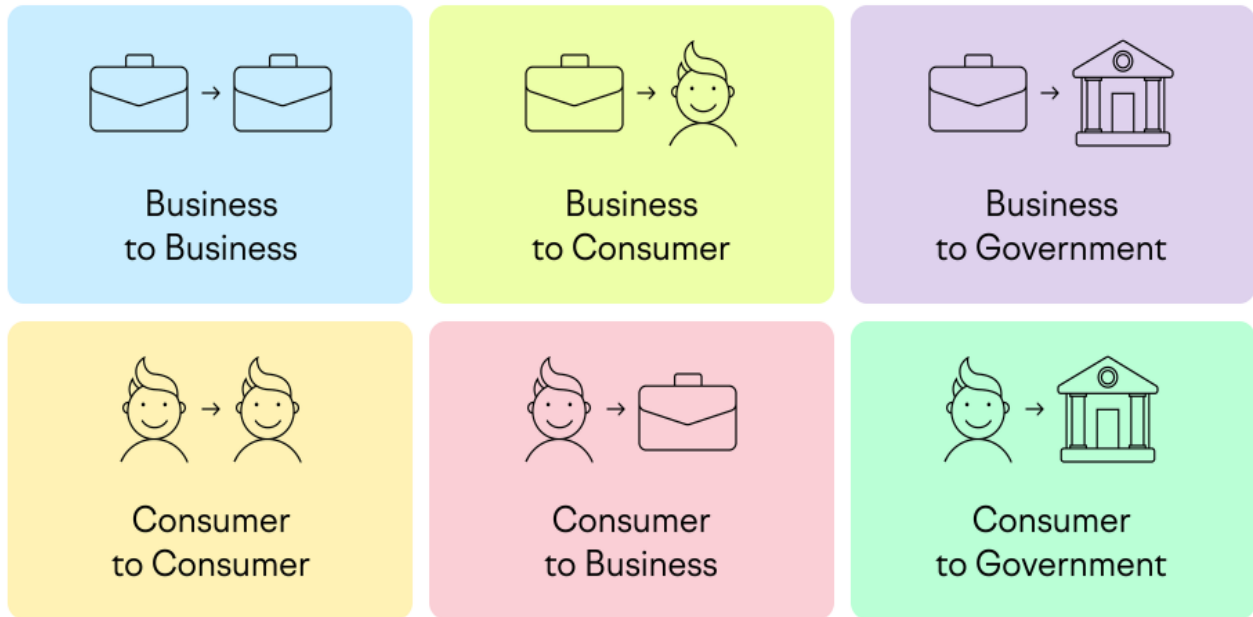
Role of Internet and web in E-commerce

- The World Wide Web improves communication and efficiency between businesses and customers. It allows for rapid communication and interaction, allowing businesses to respond more quickly.
- Customers can purchase products online 24/7 without visiting a store in person.
- The Internet and World Wide Web (WWW) enables people from all over the world to connect in a cost-effective and reliable manner. It is a global collection of networks connected to share information utilizing a standard set of protocols as technical infrastructure.
- The Internet is an enabler for e-commerce because it allows businesses to showcase and sell their products and services online while also providing potential customers, prospects, and business partners with information about these businesses and their products and services that could lead to a purchase.
- The advancement of web technologies from web 1.0, 2.0 to 3.0 have brought tremendous growth in electronic commerce.
- Search Engine Optimization helps buyers to search for their desired product more easily and efficiently.
- 3D graphics makes E-commerce more interactive and immersing
- Cloud technologies are making EC more cost effective by using appropriate services like Infrastructure as a service (IaaS), Platform (PaaS), Software (SaaS).
- Social Networks are being used as medium for commerce and business nowadays.
- Development of strong and more powerful mobile apps is helping in the growth of E-commerce
- Integration of AI and machine learning in EC sites helps to better recognize the needs of users and helps in decision making process of the business.
- It gives potential customers, prospects and businesses partners access to information about those businesses' houses and their products and services which might led to increase in purchasing.



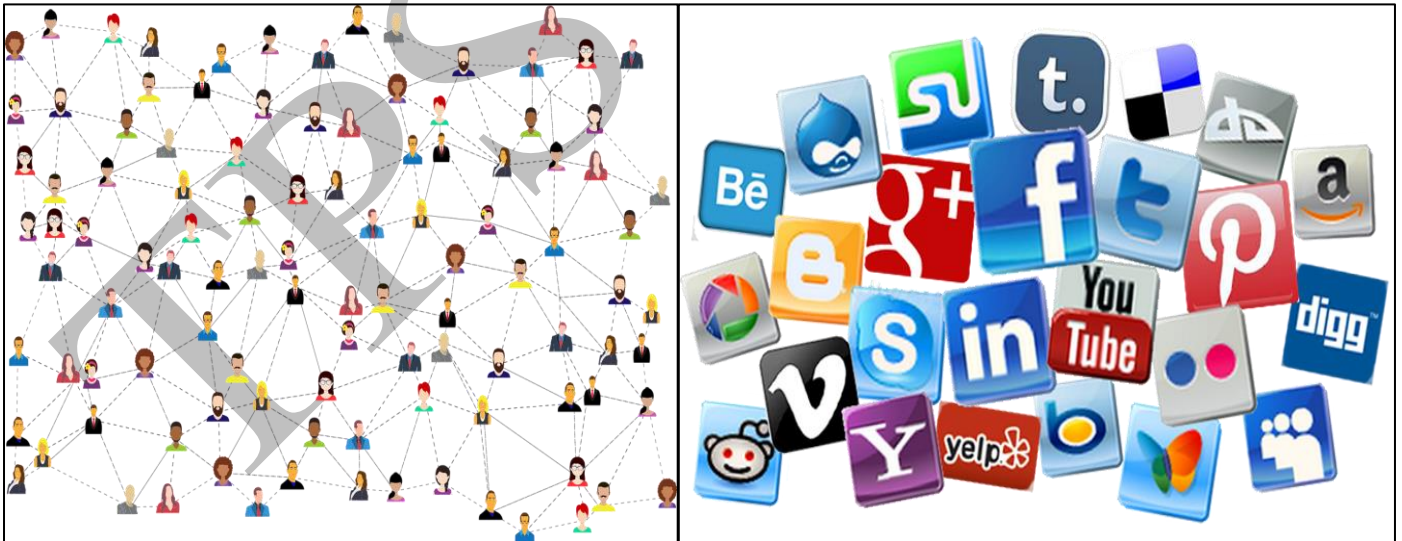
Classification of E-commerce:

Types of Ecommerce



Social Network and Services:

A social networking service is an online platform that people use to build social networks or social relationships with other people who share similar personal or career interests, activities, backgrounds or real-life connections.



Social networks are an online platform for connecting people around the globe.

A social networking service (SNS) is an online vehicle for creating relationships with other people who share an interest, background, or real relationship. Social networking service users create a profile with personal information and photos and form connections with other profiles.

Characteristics:

- While social networking services may take many forms, they share several characteristics, such as all utilizing the internet. Other similar characteristics include

- User-generated content, such as photos, videos, and posts that inform other users about the activities and interests of the poster.
- The ability to connect individuals from all over the world, though some platforms recommend that individuals know one another in real life before connecting online.
- They are free. Their business model is based on breadth of membership, therefore charging for use would be counterproductive. Still, the possibility remains that if a network grew large and useful enough, charging a fee may be possible.
- They connect people with common histories, such as school attendance, work colleagues, or people who share a common interest.
- They may help forge and develop relationships between people who share a profession or business network.
- They may be used to help individuals find information, products, services, or resources that are relevant to them.

Mobile Commerce:

The term mobile commerce was originally coined in 1997 by Kevin Duffey at the launch of the Global Mobile Commerce Forum, to mean "the delivery of electronic commerce capabilities directly into the consumer's hand, anywhere, via wireless technology."

M-commerce (mobile commerce) is the buying and selling of goods and services through wireless handheld devices such as smartphones and tablets. M-commerce is a form of e-commerce that enables users to access online shopping platforms without the use of a desktop or laptop computer. It is dependent on mobile based applications (apps).



Main concept of M-commerce is that people can use their mobile phones to carry out the business transactions anytime and anywhere they go.

- M-commerce provides an opportunity to deliver new services to existing customers and to attract new customers to EC anytime, anywhere.
- Initially, the small screen size and slow bandwidth limited the usefulness to consumers.
- However, this situation is changing rapidly due to the widespread use of smartphones and tablet computers.
- In addition, now consumers are more accepting of the handheld culture.
- Furthermore, the adoption of m-commerce is accelerating due to the spread of 4G networks (and soon 5G). Finally, free Wi-Fi Internet access in many locations helps.

M-Commerce: Attributes

➤ Specific attributes of M-commerce

- ☞ **Mobility:** Mobile computing and m-commerce are based on the fact that users carry a mobile device anywhere they go.
- ☞ **Broad Reach:** In mobile computing, people can be reached at any time. Of course, users can block certain hours or certain messages, but when users carry an open mobile device, they can be reached instantly.

➤ Value-added attributes of M-commerce

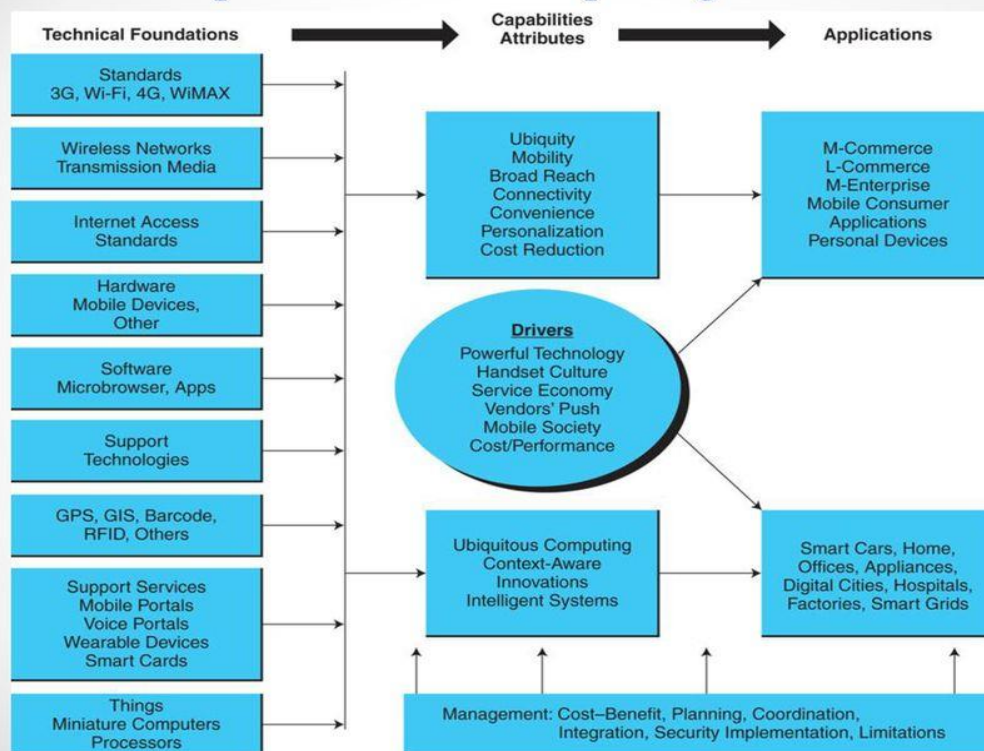
- ☞ **Ubiquity:** The availability of any products or services at any location at any given time.
- ☞ **Convenience:** Users can operate the wireless devices in any environment.
- ☞ **Instant connectivity:** Connections are available quickly and easily at anytime and anywhere.
- ☞ **Personalization:** The ability to customize information to the customers.
- ☞ **Localization of products and services:** Knowing the exact locations of the customers to offer product or services information is the key factor to success.

Types of M-Commerce Applications



1. **Mobile shopping:** This is like eCommerce but accessible via your mobile phone (iOS or Android). Mobile shopping is now possible through mobile-optimized websites, dedicated shopping apps, and social media platforms.
2. **Mobile banking:** Mobile banking is very much like online banking. However, in mobile banking, some transaction types are restricted to mobile devices. It generally involves a dedicated mobile app, though some banks have started experimenting with using messaging apps and chatbots.
3. **Mobile payments:** Mobile payments are now an alternative to traditional payment methods, like cash, check, debit, and credit cards. This payment type enables users to purchase products using a mobile device. Digital wallets, such as Amazon Pay and Apple Pay, facilitate customers to buy products without paying with cash or swiping a card. Some popular options are mobile payment apps like PayPal, Xoom, and Venmo. QR codes are also one such mode of payment through mobile. Users can send money directly to the recipient's cell phone number or bank account with the help of mobile payment.

The Landscape of Mobile Computing and M-Commerce



The Benefits of M-commerce

M-commerce has many benefits to organizations, individuals, and society. As a result, many believe that the future of EC mobile applications.

Benefits for Organizations

1. Increases sales due to ease of ordering by customer from anywhere, anytime
2. Allows location-based commerce customers from anywhere, more sales and revenue.
3. Provides an additional channel for advertising and distribution of coupons (wider reach)
4. Increases customers' loyalty.
5. Improves customer satisfaction through real-time apps
6. Increases collaboration, advertisement, customer service, and sales by using IoT.
7. Enables many enterprises application
8. Facilitates CRM and collaboration.
9. Reduces employee training time and US help desk resources.
10. Improves time utilization and productivity of mobile employees.
11. Expedites information flow from mobile employees.
12. Delivers digitized products and services directly to mobile devices.
13. Reduces order lead-time and fulfillment cycle.
14. Allows for lower, competitive pricing.
15. Ability to work at home and have flextime

Benefits for Individuals and Customers

1. Allows e-commerce from any place, anytime.
2. Assists in shopping by providing real-time information and other shopping app.
3. Helps organization and communication while traveling
4. Expediting banking and financial services.
5. Provides rich media entertainment anytime and anywhere.
6. Facilitates the finding of new friends and whereabouts of existing ones.
7. Provides a choice of mobile devices for transactions.
8. Expedites communication (e.g., locate people, get fast answers to queries, compare prices while in physical stores or via shopping comparison sites/apps)
9. Increases affordability over the cost of using desktop computing in some countries
10. Allows "smart" applications.

Benefits to Society

1. There are many benefits to society. For example, self-driving cars can reduce accidents; smart cities can benefit the dwellers and visitors.
2. Contributions are in to almost any field, from medical care and education to law Enforcement.
3. Significant reductions in energy expenses are achieved by using smart grids.
4. Traffic jams can be reduced by using wireless sensors and much more.

Location-based commerce (L-commerce)

L-commerce, short for location-commerce, is the act of using location-based services such as GPS tracking for business purposes, for example, to enhance the customer experience and maximize sales. It is referring to the use of location-finding systems such as GPS-enabled devices or similar technologies (e.g cell-based stations) to find where a customer with a mobile device or an object is located and provide relevant services, such as an advertisement or vehicle route optimization. LBC is also known as LBS (location-based systems).

- LBS is "a software application for an IP-capable mobile device that requires knowledge about where the mobile device is located.
- L-commerce offers convenient services to consumers such as connections with friends, the ability to receive relevant and timely sales information, safety features (e.g. emergency assistance), and convenience (a user can locate what facility needed is nearby without consulting a directory or a map).

- Sellers get the opportunity to advertise and provide or meet a customer's needs in real time. In essence, LBC is the delivery of m-commerce transactions to individuals who are in a known specific location, at a specific time.
- E-commerce applications provided to customers based on a user's specific location

Location-based technologies

- **Global positioning systems (GPS):** a wireless system that uses satellites to enable users to determine their position anywhere on the earth.
- **Geographical information systems (GIS):** relates longitude and latitude of GPS into place or address (mapinfo.com)
- **Location Based Mobile System (LBMS):** Real time location tracking feature of the smartphone.

Basic Concepts in L-Commerce:

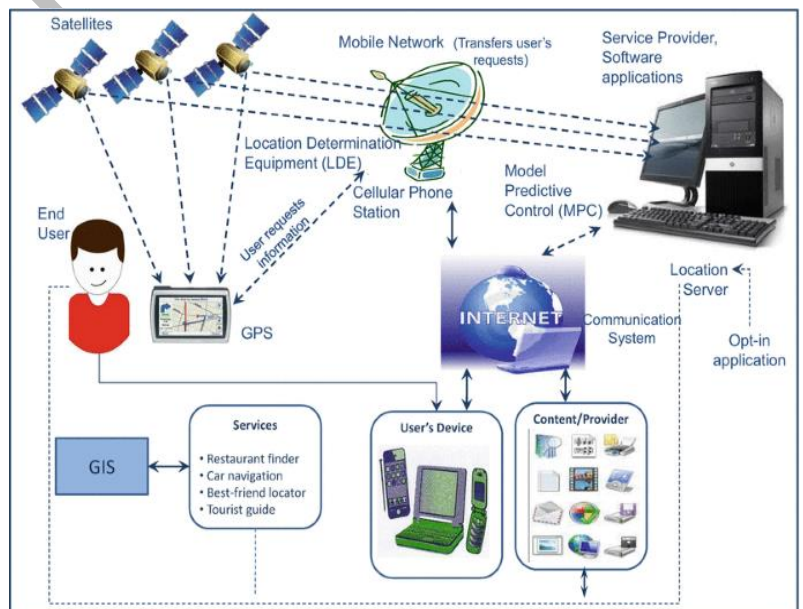
Location-based m-commerce mainly includes five possible activities, all done in real time:

1. **Location:** Finding where a person (with a smartphone) or another mobile device or a thing (e.g., a truck) is Located
2. **Navigation:** Finding and illustrating a route from one location to another (e.g., as is done in Google Maps)
3. **Tracking:** Monitoring the movements and whereabouts of people or objects (e.g., a truck, airplane)
4. **Mapping:** Creating maps of certain geographical locations with superimposed data if needed (e.g., GIS, Google Maps)
5. **Timing:** Determining the arrival or departure time of something at a specific location (e.g., arrival of a bus to a specific bus stop or an airplane to an airport)
 - For example, WeatherBug (weather.weatherbug.com) and Send Word Now (sendwordnow.com) have combined some of these five services to ensure the safety of customers, employees, and stores during severe weather and other emergencies.
 - A recent development of L-commerce is known as real-time location systems (RTLS), which are used to track and identify the location of objects in real time.

L-Commerce Infrastructure

L-commerce is based on an infrastructure. The components depend on the applications. However, the following conditions usually exist:

1. **Location finder (positioning) component:** A GPS (or other device) that finds the location of a person or a thing.
2. **Mobile Positioning Center:** This includes a server that manages the location information received from the location finder.
3. **User:** The user can be a person or thing (e.g., a vehicle).
4. **Mobile devices:** The user needs a mobile device (e.g., a smartphone) that includes a GPS or other feature that locates the location (position) of something or someone.
5. **Mobile communication networks:** The network(s) that transfers user requests to the service providers and then transmits the reply to the user.
6. **Service or application providers:** Providers are responsible for servicing a user's request. They may use applications such as GIS.



Location-based services and Applications:

A location-based service (LBS) is a mobile device-based computerized service, which utilize information about the geographical position of a user's mobile device (e.g. mobile phone tracking) for delivering a service (e.g. advertisers can target ads to specific location), to the user. There are many LBS applications. For a list of

location-based services (applications). Location based services can be used in marketing, operations, services, finance, and so forth. LBS also works in asset tracking (e.g. of parcels at USPS or FedEx) and in vehicle tracking LBS also includes location-based games.

Other examples of location-based services are:

1. Recommending public events in a city to tourists and residents
2. Asset recovery, for example, finding stolen cars
3. Pointing a user to the nearest business (e.g. a gas station) to his (her) location
4. Providing detailed navigation from any place to any address (sometimes with voice prompts)
5. Location things (such as trucks) and displaying them on the mobile device map
6. Inventory tracking warehouses
7. Delivering alerts, such as notification of a real time sale in a specific store.

Barriers to Location Based M-Commerce

1. **Lack of GPS in some mobile phones:** Without GPS, it is difficult to use LBS. However, GPS-enabled phones are increasing in availability. In addition, the use of cell phone towers helps.
2. **Accuracy of device:** Some of the location finding tools are not too accurate. A good, but expensive, GPS provides accuracy of 10 ft. Less accurate locators provide accuracy of about 1500 ft.
3. **The cost- benefit justification:** The benefits of location-based services may not justify the cost. For customers, it may be inconvenient to utilize the service.
4. **Limited network bandwidth:** Wireless bandwidth is still limited. As bandwidth improves with 4G and 5G, applications will expand, which will increase the use of the technology.
5. **Invasion of privacy:** Many people are reluctant to disclose their whereabouts and have their movements tracked.

Some Important Questions.

1. Describe some of the benefits of studying EC.
2. Define EC and e-business.
3. Distinguish between pure and Partial EC
4. Describe the key elements of the L-commerce infrastructure.
5. Define intranets and extranets.
6. List the major components of EC framework.
7. What is GPS? How does it work?
8. What are some of the basic questions addressed by location-based services?
9. List five benefits each to customers, organizations, and society.
10. Define geographical information systems. How do they relate to LBS?
11. Define social networks.
12. Describe the capabilities of networking services (SNSs).
13. Define Social commerce.
14. List the services enabled by LBS.
15. Define social commerce.
16. Describe social location-based marketing.
17. List some applications of LBC.
18. List the major technological and non-technological barriers and limitations to EC.
19. List the major barriers of LBC.
20. Define m-commerce.
21. List and briefly describe drivers of m-commerce.
22. Describe the major online enterprise applications.
23. List five major mobility trends 20. Briefly describe the five attributes of m-commerce.
24. Describe the framework of m-commerce applications.
25. What are the major categories of m-commerce applications?
26. Describe the landscape of m-commerce.
27. What are the major benefits of m-commerce