Unit 1: Introduction to E-Commerce

Traditional Commerce:

- Commerce is simply the process of buying, selling and exchanging products and services between and among organizations and individuals.
- Every commercial transaction involves following three main components or dimensions.
  - Product or Service
  - Process
  - Delivery agent (or intermediary)
- The commerce in which all the above components are physical is called traditional commerce.
- For example, if we go to supermarket, we purchase some fruits, vegetables and other physical products, pay bill at counter.
- Traditional commerce normally buys, sells or exchanges products and services within a single industry and in some cases within a specific geographical area.
- It relies on operating business hours during a specific period of time and requires housing inventory or occupying retail stores.
- The traditional commerce is based on the following facts:
  - It needs to hire sales executives, sales managers, accountants and other staff.
  - It operates at business hours within a certain period of time.
  - It does not share your information with the competitors.
  - It often relies on face-to-face interaction with consumers and its success is based on word of mouth, networking and customer referrals.

E-Commerce:

- The commerce in which all or at least one of the above components (product or services, process, delivery agent) is digital is called e-commerce.
- In its broadest definition, E-Commerce is digitally enabled commercial transactions between and among organizations and individuals.
- Digitally enabled means, for the most part, transactions that occur over the Internet and World Wide Web (WWW).
- E-Commerce is a modern business methodology that addresses the needs of organizations, merchants, and consumers to cut or reduce costs while improving the quality of goods and services and increasing the speed of service delivery.
- More commonly, e-commerce is associated with the buying and selling of information, products, and services via digital networks.
- Electronic commerce can take several forms depending on the degree of digitization (the transformation from physical to digital) involved.
- The degree of digitization can relate to:
  - The product (service) sold
  - The process
  - The delivery agent (for intermediary).
- A product can be physical or digital, the process can be physical or digital, and the delivery agent can be physical or digital.
- For example, buying a shirt at Walmart Online, or a book from Amazon.com is partial E Commerce, because the merchandise is physically delivered.
- However, buying an e-book from Amazon.com or a software product from Buy.com is pure E Commerce, because the product, its delivery, payment, and transfer agent are all done online.

E-commerce is based on the following facts.

- It needs to deploy a sophisticated web site to facilitate order, payment, and delivery or at least any one of these dimensions.
- It operates at any time.
- It shares information such as price of products with the competitors.
- It often relies on efficient services provided to customers and its success is based on reduction in cost by lowering overheads.

How E-Commerce Differs from Traditional Commerce?

1. ***Core Strategy Decisions are Technology Based:***
   Core strategic decisions such as virtual storefront, customer service, content of web sites etc. are highly integrated with technology in case of E-commerce and such decisions are not tightly integrated with technology in case of traditional commerce.
2. ***Real-time Competitiveness:***
   With E-Commerce, speed of decision making can be reduced to a minute from a month and organizations can engage in dynamic dialogues with customers which is not possible in traditional commerce.
3. ***The Store is Always Open:***
   The web store is always expected to be open which has great significance for customers and suppliers. Buyers can gather Information, search products, compare prices, and order products at any time. This is almost impossible with traditional commerce.
4. ***Technology Based Customer Interface:***
   E-commerce supports screen-to-face interaction which has the potential to increase sales and decrease cost. Human Intervention in the process of buying and selling may be eliminated or at least reduced. On the other hand, human intervention is necessary in traditional commerce which may take more time and may also increase.
5. ***Customer Controls the Interaction***:
   E-Commerce largely adopts the self-service model. Customers themselves search products, compare prices, and make the decision of purchasing. But, in traditional E-Commerce sales persons may influence the decisions of customers.
6. ***Knowledge of Customer Behavior:***
   E-Commerce systems can store Information about purchasing behavior of customers and use it to provide customized offerings, making recommendations for them etc. which is not possible with traditional commerce.

E-commerce Terminologies and Fundamentals:

Electronic Business:

- Electronic Business is commonly referred to as "E-Business" or "e-business" and is defined as the application of information and communication technologies to support all the activities of business.
- It is not only the buying and selling of goods, but also serving customers and collaborating with business partners.
- Commerce constitutes the exchange of products and services between businesses, groups and individuals and can be seen as one of the essential activities of any business.
- Electronic business methods enable companies to link their internal and external data processing systems more efficiently and flexibly, to work more closely with suppliers and partners, and to better satisfy the needs and expectations of their customers.
- Actually, e-business is more than just e-commerce. While e-business refers to more strategic focus with an emphasis on the functions that occur using electronic capabilities, e-commerce is a subset of an overall e-business strategy.
- E-commerce seeks to add revenue streams using the World Wide Web or the Internet to build and enhance relationships with clients and partners and to improve efficiency.
- For example, a company's online inventory control mechanisms are a component of e-business and online selling of company products is e-commerce.

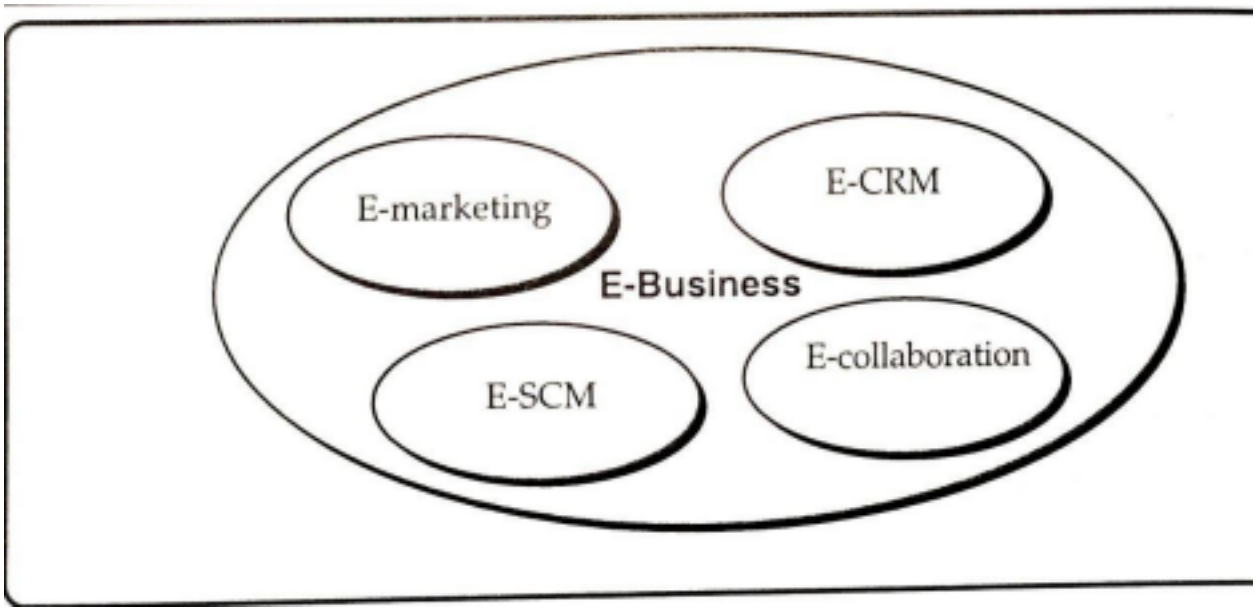


Figure: E-Business

Electronic Market:

- Electronic market or electronic market place is a place where shoppers and sellers meet electronically.
- In electronic markets, sellers and buyers negotiate, submit bids, agree on an order, and finish the execution on-line or off-line.
- There are many different types of marketplaces operating today. We may divide e-marketplaces

into those controlled by sellers, those controlled by buyers and those controlled by neutral third parties.

- Services offered by e-marketplaces include electronic catalogs for online purchasing of goods and services, business directory listings and online auctions.
- Electronic market is also referred to from many other terms like electronic exchanges/internet exchanges/ online exchanges, or electronic hubs/trading hubs or trading exchanges etc.
- An electronic exchange can trade different types of materials.
- The materials that are used in production, such as paper in books, are called direct material. • On the other hand, the materials that are used for supporting productions, such as light bulbs, office supplies etc., are called indirect materials.
- Purchasing goods and services as they are needed at an existing market price is called spot sourcing. In this case price is normally determined by supply and demand. Stock prices at stock exchanges, commodity exchanges such as oil, sugar etc. are examples of spot sourcing.
- On the other hand, purchasing goods and services on the basis of long-term contracts is called systematic sourcing or strategic sourcing.
- The market that deals with products as services in one industry or segment is called vertical market. E.g.: steel, chemical
- And the market that deals with products and services required for all types of industries is called the horizontal market. E.g.: PCs
- If strategic sourcing of direct material is done, market makers collect buyers, sellers or both and provide a platform for negotiation and contract. Such exchanges are called vertical distributors. E.g.: www.plastics.com
- On the other hand, if systematic sourcing of indirect material is done, market makers aggregate catalogs from many sellers and connect to the order processing system. Buyers can browse items provided by sellers and compare prices. Such exchanges are called horizontal distributors. E.g.: www.mro.com

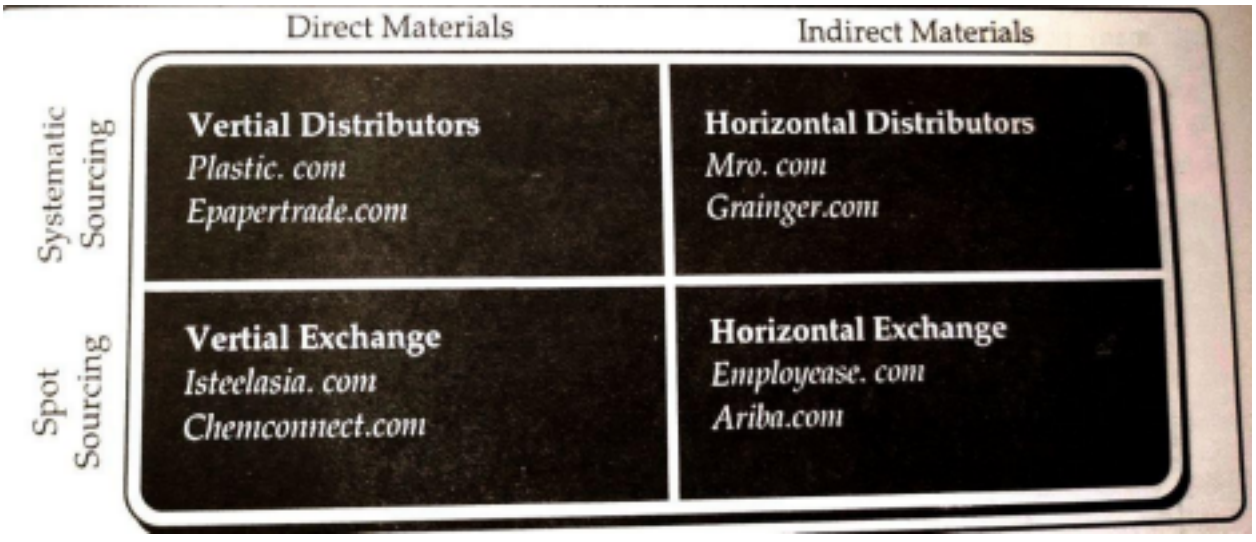


Figure: E-Markets

Portal:

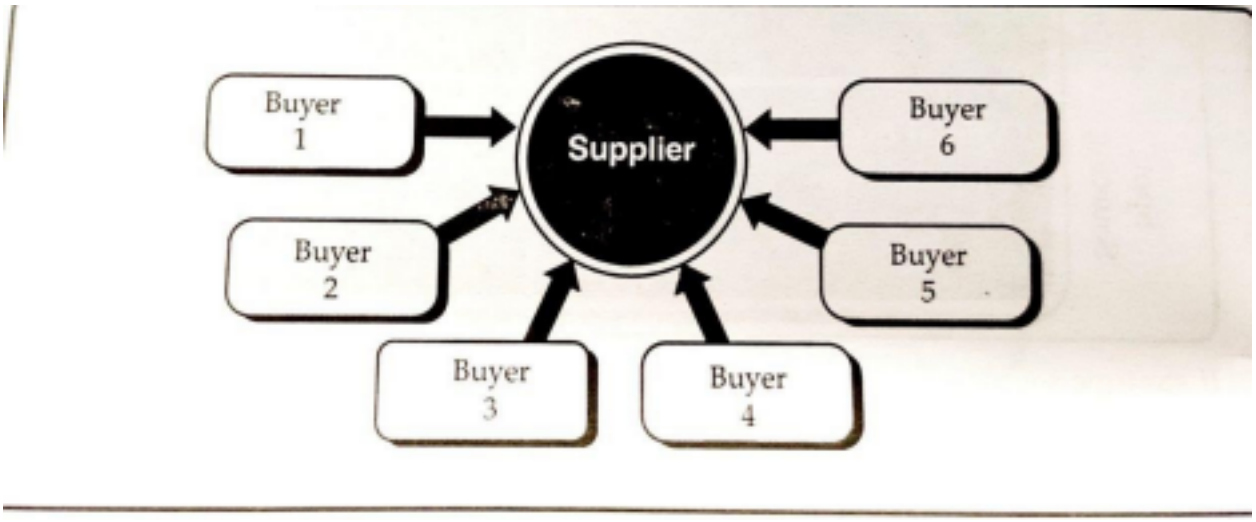
- A portal is a Web site that offers a broad array of resources and services, such as e-mail, online discussion groups, search engines, and online shopping malls.
- There are general portals and specialized or niche portals.
- Leading general portals include Yahoo! Netscape, Microsoft, and America Online. • Examples of niche portals include Garden.com (for gardeners), Fool.com (for investors), and SearchNetworking.com (for network administrators).

Electronic Catalog:

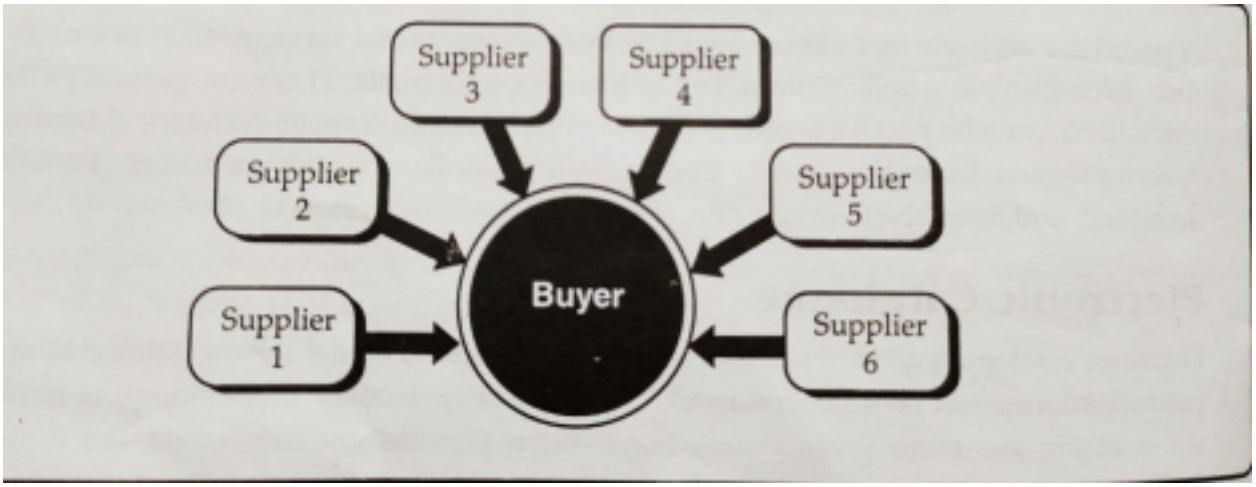
- Electronic catalog is a list of products and services offered by the sellers. Some catalogs list product information on a general level, others are very detailed.
- Some are quite informative while others are more promotional. Some carry pictures and others do not.
- Catalogs facilitate the search for products and suppliers in industries with a wide range of products and producers.
- Prices published in a catalog are generally fixed and often not disclosed to customers prior to registration since different buyers might have agreed on different prices.

Electronic Auction

- Online auctions are computerized versions of traditional auctions where buyers bid against each other.
- Main power of electronic auction is that vast numbers of businesses or individuals can bid allowing sellers or buyers to get the best price.
- For e.g.: www.ebay.com, www.bazee.com etc. are examples of auction sites.
- And at the same time smart buyers can cut the time and cost of procurement.
- The two main types of auctions are: forward auctions, and reverse auctions.
- **Forward auctions** are electronic auctions, which can be used by sellers to sell their items to many potential buyers. Sellers and buyers can be individuals, organizations etc.
- Items are commonly placed at a special site for auction. Here the highest price bid acceptable to the seller wins.



• **Reverse auctions** are auctions where the bidder is the seller and not the buyer. The bid reflects how much the buyer is being asked to pay.
• In this case the bidder with the lowest amount is the winner.
• Web-based reverse auctions have become extremely popular for purchasing large amounts of goods or services at the corporate level.
• E-procurement is most often used to describe those business-to-business reverse auctions.



Electronic Store-front:

• Electronic store-front or e-shop is a single company's Web site where products and services are sold.
• Mechanisms of e-storefronts for conducting sales includes electronic catalogs, search engine that helps to find products in the catalog, electronic cart for holding items until check-out etc. • Web site of Walmart is an example of an electronic store-front.
• www.bbsm.com.np (Bhatbhateni) is another example of electronic store-front.

Electronic-mall:

• An online shopping center where many stores are located is called e-mall.
• These are the internet-based counterpart of physically existing shopping malls. • They can be defined as a collection of multiple online shops within the same website. • E-malls provide customers with a wide variety of services and products and they are considered to be more convenient to search than individual electronic store-front.
• Multivendor e-commerce sites can also be treated as e-mall. www.daraz.com is an example.

Unique Features of E-Commerce Technology:

The features that set E-Commerce technology apart from others used in traditional commerce are:

• Ubiquity: Anytime, anywhere availability 24/7/365
• Global Reach
• Universal Standards: Technical standards of the internet are universal.
• Richness: Any type of messages and data formats can be used.
• Interactivity
• Information Density: Information plentiful, cheap and accurate
• Personalization/Customization

Benefits of E-Commerce:

- E-Commerce helps in facilitating and redefining the relationships between or among organizations, and between organizations and Individuals for value creation.
- E-Commerce advantages can be broadly classified in three major categories: ○
  Benefits to Organizations
  - Benefits to Consumers
  - Benefits to Society

Benefits to Organizations:

• E-Commerce helps to expand the marketplace to national and international markets. • It decreases the cost of creating, processing, distributing, storing and retrieving paper-based information.

- It allows reduced inventories and overhead by facilitating pull-type supply chain management. In pull type supply management, a business process starts when a request comes from a customer and it uses just-in-time manufacturing.
- The pull-type processing allows for customization of products and services which provides competitive advantage to its implementers.
- E-commerce helps organizations to provide better customer services and hence improves the brand image of the company.
- It supports business processes reengineering (BPR) efforts and provides organizations with integrated departments and increased flexibility.
- E-commerce lowers telecommunications cost by enabling other forms of communication such as email.

Benefits to Consumers:

- Enables consumers to shop or do other transactions 24 hours a day, all year round from almost any location.
- E-Commerce application provides users with more options and quicker delivery of products and services especially with digitized products.
- E-Commerce application provide user more options to compare and select the cheaper and better option.
- A customer can put review comments about a product and can see what others are buying or see the review comments of other customers before making a final buy.
- Consumers can receive relevant and detailed information in seconds, rather than in days or weeks.
- Commerce increases competition among the organizations and as a result organizations provide substantial discounts to customers.

***Benefits to Society*:**

- Enables more individuals to work at home, and to do less traveling for shopping, resulting in less traffic on the roads, and low air pollution.
- E-Commerce helps reduce cost of products so less affluent people can also afford the products.
- E-Commerce has enabled access to services and products to rural areas as well which are otherwise not available to them.
- E-Commerce helps the government to deliver public services like health care, education, social

services at reduced cost and in an improved way.

Limitation of E-Commerce:

- Most of the limitations of electronic commerce stem from the newness and the rapidly developing pace of the underlying technologies.
- These limitations will disappear as electronic commerce matures and becomes more available to and accepted by the general population.
- E-Commerce disadvantages can be broadly classified in two major categories: ○ Technical Limitations
  - Non-Technical Limitations

Technical Limitations:

- There can be a lack of system security, reliability or standards owing to poor implementation of e Commerce.
- Software development industry is still evolving and keeps changing rapidly.
- In many countries, network bandwidth might cause an issue as there is insufficient telecommunication bandwidth available.
- Special types of web server or other software might be required by the vendor setting the e-commerce environment apart from network servers.
- Sometimes, it becomes difficult to integrate E-Commerce software or website with existing application or databases.
- There could be software and hardware compatibility issues as some E-Commerce software may be incompatible with some operating system or any other component.

Non-Technical Limitations:

- Initial Cost: The cost of creating or building an E-Commerce application in-house may be very high. There could be a delay in launching the E-Commerce application due to mistakes, lack of experience.
- User Resistance: User may not trust the site being an unknown faceless seller. Such mistrust makes it difficult to make users switch from physical stores to online or virtual stores.
- Security and Privacy: Difficult to ensure security or privacy on online transactions. • Lack of touch or feel of products during online shopping which makes it not suitable for some products. For example, customers may want to purchase body spray only after smelling its smell. • E-Commerce applications are still evolving and changing rapidly.
- Internet access is still not cheaper and is inconvenient to use for many potential customers like one living in remote villages.

E-Commerce Framework:

- Only those organizations can survive that have strong fundamental framework based on sound business and market understanding.
- Framework tells about the detail of how e-commerce take place. It defines actually how e commerce can be implemented, how online trading or business can be done. It defines important components that should be present to do some transaction.
- Commerce framework is the combination of following three basic elements. ○ Supportive infrastructure
  - Business applications
  - Public Policies and Technical Standards

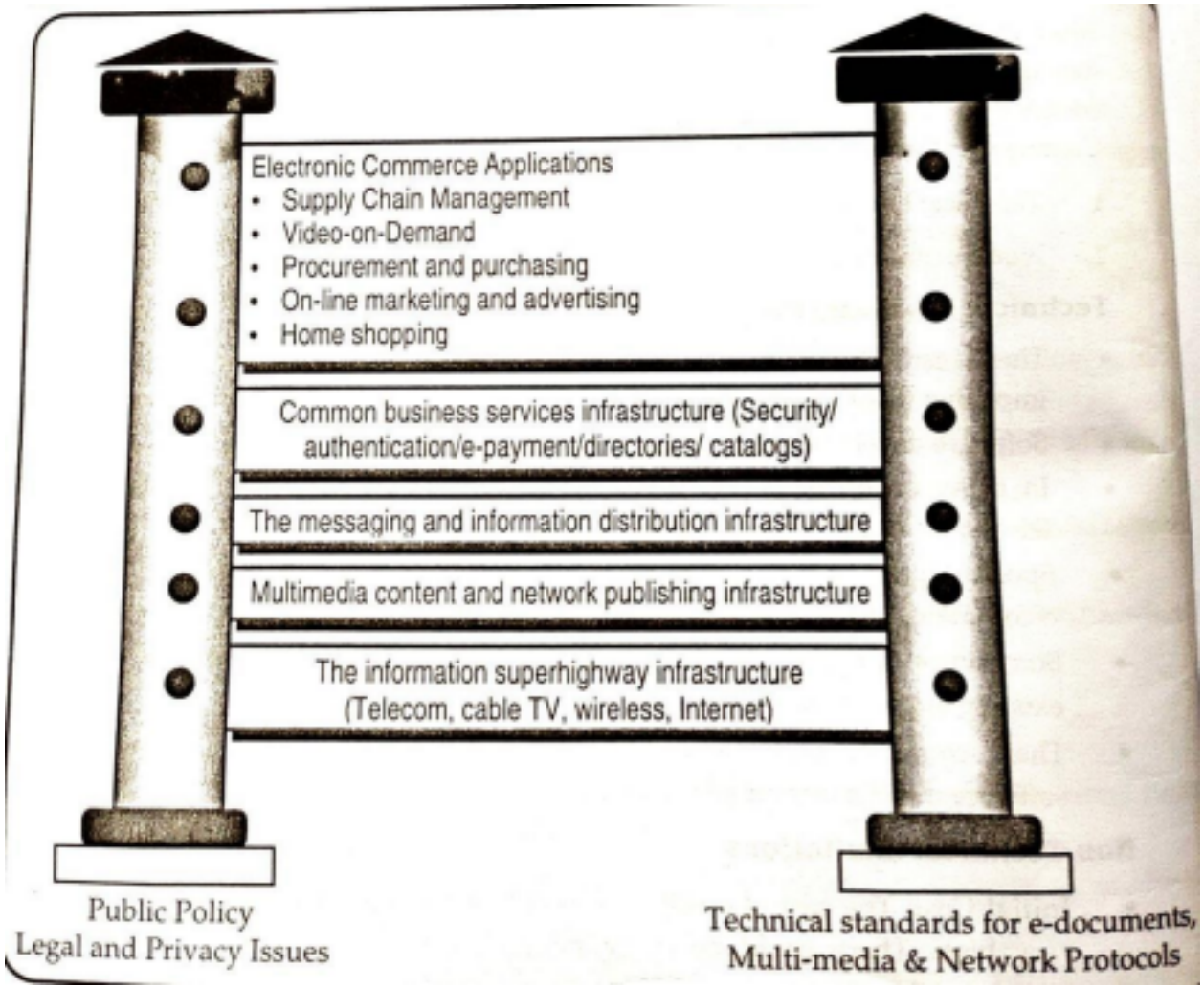


Figure: E-Commerce Framework

Infrastructure:

- E-Commerce applications will be built on the existing technology infrastructure which is a combination of a myriad of computers, communication networks, and communication software. • An infrastructure is defined as "the foundation of a system."
- The hardware backbone of computers, routers, servers, fiber optics, cables, modems, and other network technologies provides half of the technology equation.

- The other half includes the software and communications standards that run on top of the hardware, including the core protocols for the Web.

Building blocks of the infrastructure consist of following components:

Common Business Service:

- This infrastructure includes different methods for facilitating online buying and selling processes.
- In online commerce, the buyers send an electronic payment as well as some remittance Information to the seller.
- Settlement occurs when the payment and remittance Information are authenticated by the seller and accepted as valid.
- In order to enable online payment for information and ensure its sale delivery, the payment services Infrastructure needs to develop encryption and authentication methods that ensure security of contents traveling on the network.

Messaging and Information Distribution:

- The Information content transferred over the network consists of text, numbers, pictures, audio and video.
- Once contents have been created and stored on a server, messaging and Information distribution methods carry that content across the network.
- Messaging vehicle is called middleware software. Messaging and information distribution include translators that interpret and transform data formats.
- Different applications used for this purpose includes EDI, email, P2P file transfer etc.

Multi-media Content and Network Publishing:

- The Information Superhighway is the transportation foundation that enables the transmission of content.
- The most prevalent architecture that enables networking publishing is the World Wide Web.
- The web allows small businesses and Individuals to develop content in the form of Hypertext Markup Language (HTML) and publish it on a web server.

Information Superhighway Infrastructures

- It is the path through which actual Information flows and moves between sender and receiver.

- Information Superhighway consists of telecommunication companies that provide telephone lines, Cable TV systems that provide coaxial cables and direct broadcast satellite networks, Wireless companies that provide mobile radio and satellite networks, Computer networks Include private networks and public data networks like the Internet.
- All these modes of communication are interconnected. They are connected with routers, switches, bridges, gateways etc.

Business Applications:

- These are the web applications that are accessed by customers for the purpose of buying and selling products or services.
- It includes both inter and intra-organizational and electronic markets. Some of E-Commerce applications are listed below:

- *Online Shopping and Advertising:* With the use of e-commerce, one can do online shopping. Unlike the traditional model, customer need not to go to store, he or she can visit any website and find all the information regarding any product at screen of his computer and places the order.
- *Online Banking*: Online Banking means one can operate his or her account while sitting at their home. That is, customers can manage their account from somewhere else. They need not to go to the bank to manage their account.
- *Supply Chain Management:* Supply Chain Management is a term that encompasses the coordination of various departments of a company. It includes order generation, order taking, order fulfillment and distribution of products or services or information.
- *Video on demand (display) (VOD*): These are systems which allow users to select and watch/listen to video or audio content when they choose to, rather than having to watch at a specific broadcast time. IPTV technology is often used to bring video on demand to televisions and personal computers.
- *Online Gaming:* Online gaming can refer to any type of game that someone can play through the Internet or over a computer network. Most of the time, it refers to video games played over the Internet, where multiple players are in different locations across the world.
- *E-Procurement:* E-procurement is the business-to-business purchase and sale of supplies and services over the Internet. Typically, e-procurement Web sites allow qualified and registered users to look for buyers or sellers of goods and services.

Public Policy and Technical Standards:

- These are the main components of the framework of e-commerce. By following all these, trade can be done efficiently on the network.
- Public Policy and Technical Standards are two support pillars for all e-commerce applications and infrastructure.
- *Public Policy:* It is related to e-commerce encompasses issues such as universal access, privacy and information pricing. It should take into consideration of:
    - Cost of accessing information
    - Regulation to protect consumers from fraud and protect their right to privacy.
    - Policing global information traffic to detect information pirating and obscene sites.
- *Technical Standards:* It dictates the specifics of information publishing tools, user interfaces and transport. Standards are essential to ensure compatibility across the entire network of the world.

Elements of E-commerce Applications:

- All E-Commerce applications basically follow the client server model.
- Clients are the machines requesting services and servers are machines providing services to the client.
- Basically, every E-Commerce application has four basic elements:
    - Consumer Access Devices
    - Multimedia Content
    - Network Service Provider and
    - Information Delivery Servers

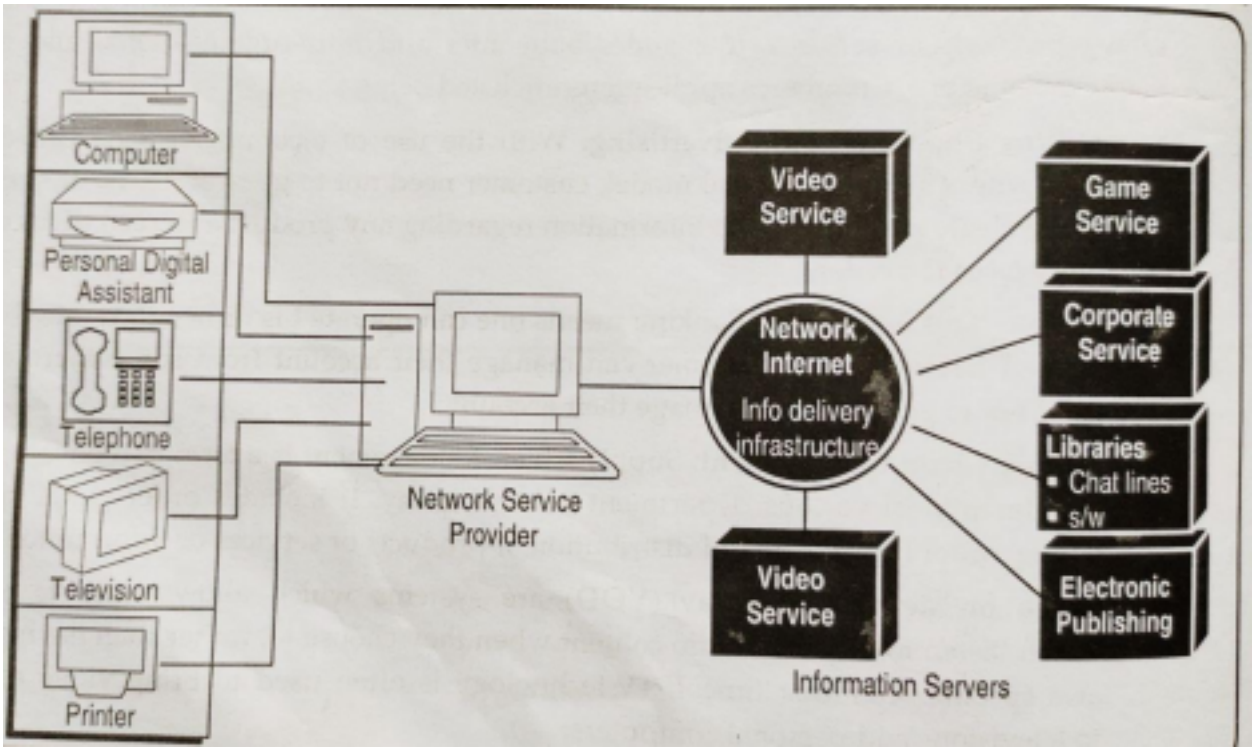


Figure: Elements of E-Commerce Applications

Multimedia Content:

• Multimedia content can be considered both fuel and traffic for electronic commerce applications. • The technical definition of multimedia is the use of digital data in more than one format, such as the combination of text, audio, video, images, graphics, numerical data, holograms, and animations in a computer file/document.

• Multimedia is associated with Hardware components of different networks.

• The Accessing of multimedia content depends on the hardware capabilities of the customer.

Consumer Access Devices:

• Consumer access devices are client machines used for accessing the ecommerce applications. • Some examples of consumer access devices are personal computers, mobile phones, PDAs (personal digital assistants), two-way televisions.

• Such televisions are equipped with devices called set-top boxes. Out of these access devices interactive TV is considered as an information access device of the future.

• The reason behind this is that almost all has a TV and everyone is far more comfortable with using a TV than a PC.

• Consumer access devices are used for entertainment on demand including video, games, news on-demand, electronic retailing via catalogs etc.

Network Service Providers:

• Network is the backbone of E-Commerce. It needs a network infrastructure to transport the contents. • Such network infrastructure is provided by a combination of telecom networks, cable TV networks, wireless networks such as satellites, and microwaves, private networks etc.

• Basically, E-Commerce needs a high capacity (broadband) interactive (two way) electronic pipeline for simultaneously supporting a large number of E-Commerce applications.

Information Delivery Servers:

• E-Commerce needs different servers to store and distribute large amounts of digital content to consumers.

• These servers captures, processes, manages, and delivers text, images, audio and video. • There may be different servers for providing services like game server, multimedia server, government server, etc.

• These servers must be able to handle thousands of simultaneous users and are made up of high end symmetric multiprocessors, clustered architecture and massive parallel systems.

M-Commerce:

• M-commerce (mobile commerce) is the buying and selling of goods and services through wireless handheld devices such as cellular telephone and personal digital assistants (PDAs). • This definition is not able to include all factors of modern M-Commerce.

• A more generalized definition of M-Commerce can be given as: Mobile Commerce is any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of an electronic device. It is known as next-generation e-commerce.

• M-commerce enables users to access the Internet without needing to find a place to plug in. As content delivery over wireless devices becomes faster, more secure, and scalable, there is wide speculation that m-commerce will go beyond wire line e-commerce as the method of choice for digital commerce transactions.

• The industries affected by m-commerce include:

- **Financial Services**, which includes mobile banking (when customers use their handheld devices to access their accounts and pay their bills) as well as brokerage services, in which stock quotes can be displayed and trading conducted from the same handheld device.
- **Telecommunications**, in which service changes, bill payment and account reviews can all be conducted from the same handheld device.
- **Service/retail**, as consumers are given the ability to place and pay for orders on-the-fly. ○ **Information Services**, which include the delivery of financial news, sports figures and traffic updates to a single mobile device.

Features of Mobile Commerce

Mobile Commerce is characterized by some unique features that equip it with certain advantages against conventional forms of commercial transactions, including Electronics Commerce

• **Ubiquity**: Ubiquity means that the user can avail of services and carry out transactions largely independent of his current geographic location (anywhere features). This feature can be useful in many situations, e.g., to cross-check prices while standing in a supermarket.

• **Immediacy**: It means real-time availability of services (anytime feature). This feature is particularly attractive for services that are time-critical and demand a fast reaction e.g. stock market information for a broker. Additionally, the consumer can buy goods and services, as and when

he feels the need. The immediacy of the transaction helps to capture consumers at the moment of intention so that sales are not lost in the discrepancy between the point of intention and that of the actual purchase.

- **Localization**: Positioning technologies, such as the Global Positioning System (GPS) allow companies to offer goods and services to the user specific to his current location. Location based services can be, thus, offered to meet consumers' needs and wishes for localized content and services.

• **Instant connectivity**: Ever since the introduction of the General Packet Radio Service (GPRS) mobile devices are constantly online, i.e., in touch with the network (always-on feature). • **Pro-active Functionality:** Due to immediacy and localization features, new avenues for push marketing are created. Services like Opt-in advertising can be offered, so that a user may choose the products, services and companies which he wants to be kept informed about. The Short Message Service (SMS) can be used to send brief text messages to consumers informing them of relevant local offerings that best suit their needs. This feature ensures that the right (relevant) information can be provided to the user at the right place at the right time.

- **Simple Authentication Procedure**: Mobile telecommunication devices function with an electronic chip called Subscriber Identity Module (SIM). The SIM is registered with the network operator and the owner is thus unambiguously identifiable. The clear identification of the user in combination with an individual Personal Identification Number (PIN) makes any further time-consuming complicated and potentially inefficient authentication process needless.

These unique features of Mobile Commerce can provide the user with some concrete and specific advantages. These are:

- **Context-specific Services**: Mobile Commerce makes it possible to offer location-based services, which are specific to a given context (e.g., time of the day, location and Interests of the user). Such services offer new opportunities for personalized push marketing in close proximity to the vendor thereby increasing the probability of sales. It enhances brand presence and thus encourages consumers to remain loyal to brands they are acquainted with.
- **Time-critical Situations:** The ubiquity and immediacy of Mobile Commerce allows the user to perform urgent tasks in an efficient manner, e.g., fast reaction to stock market developments irrespective of his current geographic location. It is also useful in emergency situations.
- **Spontaneous Decisions and Needs**: Spontaneous needs are not externally triggered and generally involve decisions that do not require a very careful consideration, e.g., purchase decisions involving small amounts of money. An example of such a service would be reserving a place in a restaurant or cinema spontaneously. Users may also be provided with access to entertainment content, e.g., horoscope, music or sports news while on the move and with free time on hand. • **Efficiency Increase**: Mobile Commerce helps increase the productivity of the workforce by increasing the efficiency of their daily routines. Time-pressured consumers (employees) can use 'dead spots' in the day, e.g., during the daily travel to and from the workplace, more effectively.

Limitations of M-Commerce

Despite the fact that the use of M-Commerce is growing rapidly there are still limitation that causes limited use of M-Commerce

- **Bandwidth**: The limited bandwidth that can be supported by mobile devices currently is very small which causes web developers to reduce the usage of rich data.

- **Screens Size**: The screen size of a mobile device is very limited. This also limits the viewing capacity of the user.
- **Less Powerful Processors**: Due to the slow processing speed, web developers would have to use server-side scripting which will bring more load to the servers.
- **Cost of Wireless Connection:** As wireless connection of a mobile device to the internet is still a relatively new technology, the cost of using such connection is also expensive as the technology is still under heavy development.

Applications of M-Commerce

- **Mobile Banking:** This application makes it possible to complete bank related transactions, e.g., checking account status, transferring money and selling stocks, via mobile devices, independent of the current user location.
- **Mobile Entertainment:** On one hand, this application contains services that provide the user digital data with entertainment value on mobile devices, e.g., ringtones, music and videos. On the other hand, it opens an array of interactive services, e.g., betting gaming, dating and chatting.
- **Mobile Information Services:** This term refers to mobile services that provide subscribers with content of informational character. Examples of such services are news updates of any nature (finance, politics, sport etc.), travel information, access to search engines and Mobile Office (e mails, appointments etc.).
- **Mobile Marketing**: This term refers to services based on mobile communication technologies that provide firms with new, innovative instruments, e.g., to increase sales, win and retain customers, improve after-sales services, build and sustain a positive and modern image/brand and carry market research.
- **Mobile Shopping**: This application bundles services that allow for mobile processing of transactions involving purchase of goods of daily use. The user can purchase products by choosing them from a catalog accessible from a mobile device. The products need not be of a digital nature.
- **Mobile Ticketing:** This application ensures that the user can purchase a right to utilization/entry (ticket) via a mobile device, replacing the conventional paper ticket. The ticket is sent in digital form to the mobile device.

E-Commerce Vs M-Commerce

- The adjective electronic, used within the specific contexts of Electronic Business or Electronic Commerce, signifies an anytime access to business processes managed by computer-mediated networks.
- Furthermore, the access to such networks is, in this case, stationary.
- The services are therefore not available independent of the geographic location. The access takes place using mobile communication networks, making the services independent of the geographic location of the user.
- It would be useful to differentiate between the terms: mobile and wireless. • As opposed to the term mobile that signifies an anytime, anywhere access to computer-mediated networks, wireless is just a method of communication between electronic devices, e.g., with the help of infrared interfaces.
- Every wireless device may not be suitable for feasible mobile applications.
- For example, Wireless Local Area Networks (WLAN) with a limited range of maximum 300 meters

cannot support feasible mobile applications.

Types of E-Commerce:

• There are many different ways to categorize E-Commerce. It can be categorized on the basis of transaction types or on the basis of relationship between entities involved in the transaction. • E-commerce can be classified on the basis of transaction partners as below: ○ Business-to-consumer(B2C)

- ○ Business-to-business (B2B)
- ○ Consumer-to-consumer(C2C)
- ○ Consumer-to-business(C2B)

B2B E-Commerce

- B2B e-commerce is simply defined as e-commerce between companies. This is the type of e-commerce that deals with relationships between and among businesses.
- About 80% of commerce is of this type, and most experts predict that B2B e-commerce will continue to grow faster than other types of E-commerce Website following a B2B business model sells its product 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 the wholesaler's retail outlet.

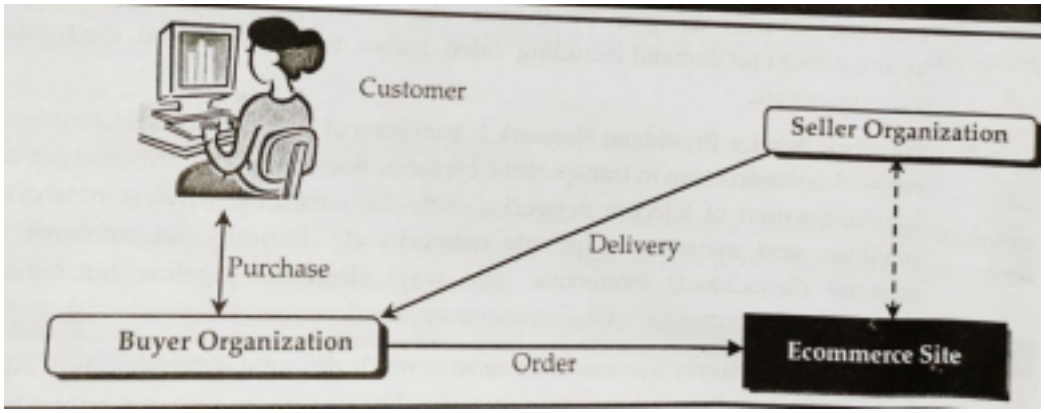


Figure: B2B E-Commerce

- As we know, www.amazon.com is an online bookstore that sells books from various publishers including Wrox, O'Reilly, Premier Press, and so on.
- In this case, the publishers have the option of either developing their own site or displaying their books on the Amazon site (www.amazon.com), or both.
- The publishers mainly choose to display their books on www.amazon.com as it gives them a larger audience. Now, to do this, the publishers need to transact with Amazon, involving business houses on both the ends.
- Thus, we can say that www.amazon.com is an example of a web site that adopts a B2B business model.
- Another example is www.alibaba.com

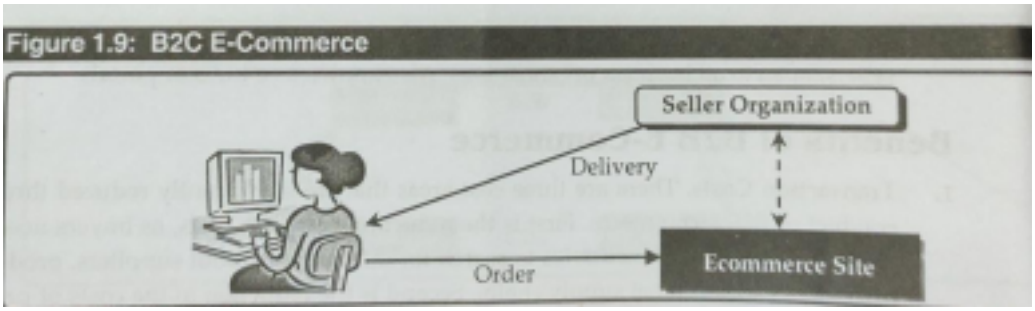
- Following are the architectural models in B2B e-commerce:
    - ***Sell-side Marketplace***: B2B model in which organizations sell to other organizations from their own private e-marketplace and/or from a third-party site. The key mechanisms in the sell-side model are: Electronic catalogs that can be customized for each large buyer and Forward auctions.
    - ***Buy-side Marketplace***: B2B model in which organizations buy needed products or services from other organizations electronically often through a reverse auction.
    - ***Electronic Exchanges:*** Refers to e-market places where there are many buyers and many sellers, open to all business organizations. Also known as e-hubs or portals.

Benefits of B2B E-Commerce

- **Transaction Costs:** There are three cost areas that are significantly reduced through the conduct of B2B e-commerce.
    - First is the reduction of search costs, as buyers need not go through multiple intermediaries to search for information about suppliers, products and prices as in a traditional supply chain.
    - Second is the reduction in the costs of processing transactions (e.g., invoices, purchase orders and payment schemes), as B2B allows for the automation of transaction processes and therefore, the quick implementation of the same compared to other channels. ○ Third, online processing improves inventory management and logistics.
- **Disintermediation:** Through B2B e-markets, suppliers are able to interact and transact directly with buyers, thereby eliminating intermediaries and distributors. However, new forms of intermediaries are emerging. For instance, e-markets themselves can be considered as intermediaries because they come between suppliers and customers in the supply chain.
- **Transparency in Pricing**: Among the more evident benefits of e-markets is the increase in price transparency. The gathering of a large number of buyers and sellers in a single e- market reveals market price information and transaction processing to participants. The Internet allows for the publication of information on a single purchase or transaction, making the information readily accessible and available to all members of the e-market.
- **Economies of Scale and Network Effects**: The rapid growth of B2B e-markets creates traditional supply-side cost-based economies of scale. Furthermore, the bringing together of a significant number of buyers and sellers provides the demand-side economies of scale or network effects. Each additional incremental participant in the e-market creates value for all participants in the demand side.

B2C E-Commerce

- The B2C model involves transactions between business organizations and consumers. • It applies to any business organization that sells its products or services to consumers over the Internet.
- These sites display product information in an online catalog and store it in a database. • The B2C model also includes online banking, travel services, and health information. • Website following B2C business model sells its product directly to a customer. • A customer can view products shown on the website of a business organization. The customer can choose a product and order the same.
- Website will send a notification to the business organization via email and the organization will dispatch the product/goods to the customer.



• The real example of the Website that adopts the B2C model is www.daraz.com.np , in which the consumer searches for an item on their site and places an order, if required.

• The B2C model of e-commerce is more prone to the security threats because individual consumers provide their credit card and personal information on the site of a business organization. • In addition, the consumer might doubt that his information is secured and used effectively by the business organization.

• This is the main reason why the B2C model is not very widely accepted. Therefore, it becomes very essential for the business organizations to provide robust security mechanisms that can guarantee a consumer for securing his information.

• Common B2C e-business models include e-shops and e-malls.

- **E-Shop**: It is sometimes referred to as an e-store or e-tailer, is a version of a retail store where customers can shop at any hour of the day without leaving their home or office. These online stores sell and support a variety of products and services. The online businesses channeling their goods and services via the Internet only, such as Amazon.com, are called pure plays. The others are an extension of traditional retail outlets that sell online as well as through a traditional physical store. E.g., www.gyapu.com
- **E-Mall**: It consists of a number of e-shops; it serves as a gateway through which a visitor can access other e-shops. An e-mall may be generalized or specialized depending on the products offered by the e-shops it hosts. Revenues for e-mall operators include membership fees from participating e-shops, advertising, and possibly a fee on each transaction if the e-mall operator also processes payments. E-shops in e-malls benefit from brand reinforcement and increased traffic as visiting one shop on the e-mall often leads to browsing "neighboring" shops. An example of an e-mall is www.daraz.com.np

Types of services typically covered under B2C e-commerce include Auction stores, online stores, and online services.

• ***Online Stores***: It may be done either to promote the company and its products and services or to actually sell the products or services through this virtual store. One of the best examples of an e store is Amazon.com, which started selling books online and gradually extended to other product categories.

• ***Online Services:*** This is another area where companies can exploit the Internet. Many companies are using the Internet to provide customer service. In the service sector, banking and stock trading is one such example. Companies like eTrade.com have brought the ease of trading stocks to customer's PC. Another interesting example is Makethemove.com. MaketheMove.com offers individuals the opportunity to set-up, transfer and cancel utilities such as gas, electric and local phone; and services such as long distance and wireless telephone, cable television, Internet service providers, paging, newspapers, magazines, and more when customers shift from one

location to another.

- ***Auction Stores***: Electronic auctions (on the Internet) offer an electronic implementation of the bidding mechanism also known from traditional auctions. This can be accompanied by multimedia presentations of the goods. Usually, they are not restricted to this single function. They may also offer integration of the bidding process with contracting, payments and delivery. eBay.com, eBid.com, WebStore.com etc are examples of online auction sites.

C2C E-Commerce

- The C2C model involves transactions between consumers. Here, a consumer sells directly to another consumer.
- Websites like www.hamrobazar.com, www.eBay.com, www.bazee.com etc. are common examples that provide a consumer to advertise and sell their products online to another consumer.
- However, it is essential that both the seller and the buyer must register with these sites. While the seller needs to pay a fixed fee to the online auction house to sell their products, the buyer can bid without paying any fee. The site brings the buyer and seller together to conduct deals.
- Websites 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.
- This type of e-commerce comes in at least three forms:
    - Auctions facilitated at a portal: Such as eBay, which allows online real-time bidding on items being sold on the Web.
    - Peer-to-peer systems: Such as the Napster model (a protocol for sharing files between users used by chat forums similar to IRC) and other file exchange and later money exchange models.
    - Classified ads at portal sites: Such as Excite Classifieds and eWanted, Pakwheels.com (an interactive, online marketplace where buyers and sellers can negotiate).

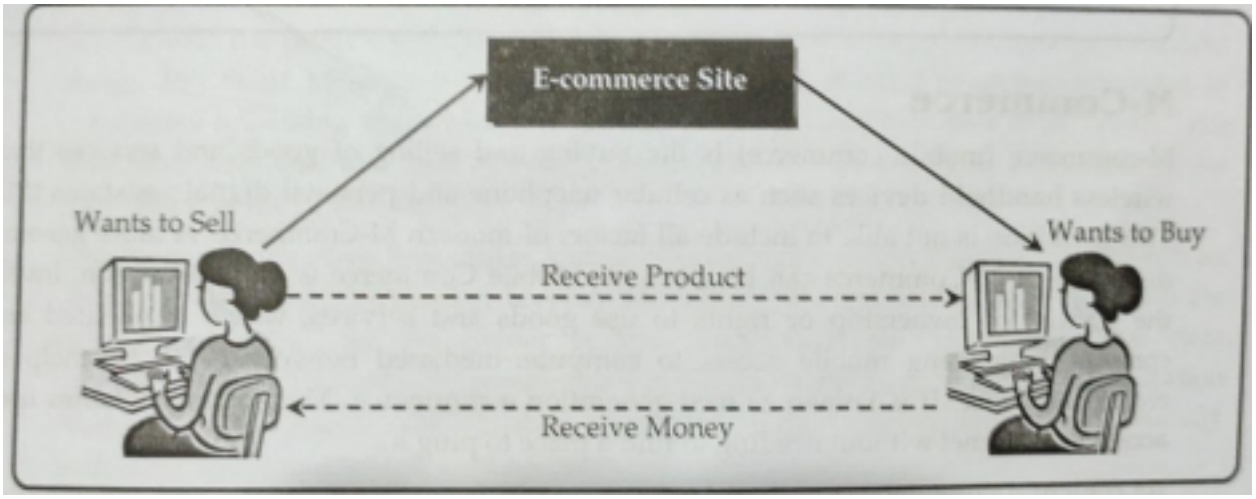


Figure: C2C E-Commerce

- Let us now look at the previous figure with respect to eBay.
- When a customer plans to sell his products to other customers on the Web site of eBay, he/she

first needs to interact with an eBay site, which in this case acts as a facilitator of the overall transaction.

• Then, the seller can host his product on www.ebay.com, which in turn charges him for this. • Any buyer can now browse the site of eBay to search for the product he is interested in. • If the buyer comes across such a product, he places an order for the same on the Web site of eBay.

• eBay now purchases the product from the seller and then sells it to the buyer. • In this way, though the transaction is between two customers, an organization acts as an interface between the two organizations.

C2B E-Commerce

- The C2B model involves a transaction that is conducted between a consumer and a business organization.
- In this kind of a transaction, the consumers decide the price of a particular product rather than the supplier.
- This category includes individuals who sell products and services to organizations. • For example, www.monster.com is a Web site on which a consumer can post his bio-data for the services he can offer. Any business organization that is interested in deploying the services of the consumer can contact him and then employ him, if suitable.
- It also includes the transactions where a consumer approaches a website showing multiple business organizations for a particular service and places an estimate of the amount, he/she wants to spend for a particular service.
- Business organization that fulfills the consumer's requirement within a specified budget approaches the customer and provides its services.

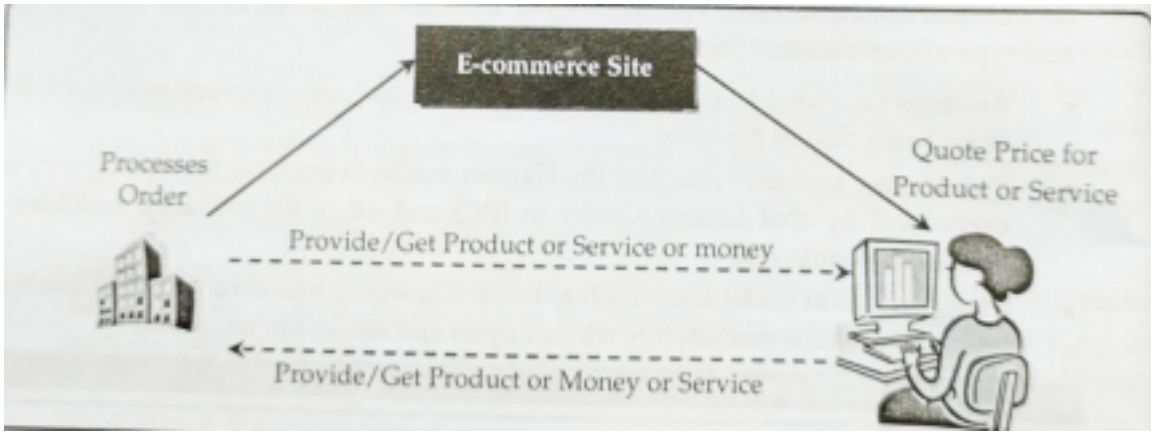


Figure: C2B E-Commerce

E-Commerce in Nepal:

• Nepal's E-Commerce Business is set to grow at a fast pace year on year, a recent estimate shows. This may have been possible through the rollout of 3G and 4G services, and a boom in the ISP industry. • The relative success and popularity of online payment sites such as eSewa, Khalti, ConnectIPS also have encouraged many to tap the e-commerce opportunity.

• If you want to buy a new cloth, a book, a mobile phone or even order your lunch online from your home? Yes, it is possible in Nepal and there are a lot of companies offering these services. • Though problems like lack of proper payment gateway, transportation and internet reliability are existent in Nepal; many innovators have developed some innovative e-commerce services in Nepal.

• Here is a list of some e-commerce sites in Nepal. Some of them are used primarily by Nepalese living abroad who wish to send gifts to Nepal.

- www.daraz.com.np
- www.muncha.com
- www.sastodeal.com

Compiled By: Krishna Bhandari www.genuinenotes.com

- www.gyapu.com
- www.bbsm.com.np
- www.metrotarkari.com
- www.foodmandu.com
- www.pathao.com
- www.tootle.com
- www.bhoj.com
- www.giftmandu.com
- www.hamrobazaar.com etc.