



UNIT-1

E-commerce (electronic commerce) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. These business transactions occur either as business-to-business ([B2B](#)), business-to-consumer ([B2C](#)), consumer-to-consumer or consumer-to-business.

How does e-commerce work?

E-commerce is powered by the internet, where customers can access an online store to browse through, and place orders for products or services via their own devices.

Types of e-commerce

Business-to-business (B2B) e-commerce [refers to the electronic exchange](#) of products, services or information between businesses rather than between businesses and consumers. Examples include online directories and product and supply exchange websites that allow businesses to search for products, services and information and to initiate transactions through e-procurement interfaces.

In 2017, Forecaster Research predicted that the [B2B e-commerce](#) market will top \$1.1 trillion in the U.S. by 2021, accounting for 13% of all B2B sales in the nation.

Business-to-consumer (B2C) is the retail part of e-commerce on the internet. It is when businesses sell products, services or information directly to consumers. The term was popular during the [dot-com boom](#) of the late 1990s, when online retailers and sellers of goods were a novelty.

Today, there are innumerable virtual stores and malls on the internet selling all types of consumer goods. The most recognized example of these sites is Amazon, which dominates the B2C market.

Consumer-to-consumer (C2C) is a type of e-commerce in which consumers trade products, services and information with each other online. These transactions are generally conducted through a third party that provides an online platform on which the transactions are carried out.

Online auctions and classified advertisements are two examples of C2C platforms, with eBay and Craigslist being two of the most popular of these platforms. Because eBay is a business, this form of e-commerce could also be called C2B2C -- consumer-to-business-to-consumer.

Consumer-to-business (C2B) is a type of e-commerce in which consumers make their products and services available online for companies to bid on and purchase. This is the opposite of the traditional commerce model of B2C.

A popular example of a C2B platform is a market that sells royalty-free photographs, images, media and design elements, such as iStock. Another example would be a job board.

Business-to-administration (B2A) refers to transactions conducted online between companies and public administration or government bodies. Many branches of government are dependent on e-services or products in one way or another, especially when it comes to legal documents, registers, social security, fiscals and employment. Businesses can supply these electronically. B2A services have grown considerably in recent years as investments have been made in e-government capabilities.

Consumer-to-administration (C2A) refers to transactions conducted online between individual consumers and public administration or government bodies. The government rarely buys products or services from citizens, but individuals frequently use electronic means in the following areas:

- **Education.** Disseminating information, distance learning/online lectures, etc.
- **Social security.** Distributing information, making payments, etc.
- **Taxes.** filing tax returns, making payments, etc.
- **Health.** Making appointments, providing information about illnesses, making health services payments, etc.

Mobile e-commerce ([M-commerce](#)) is a type of e-commerce on the rise that features online sales transactions made using mobile devices, such as smartphones and tablets. M-commerce includes mobile shopping, mobile banking and mobile payments. Mobile [chatbots](#) also provide e-commerce opportunities to businesses, allowing consumers to complete transactions with companies via voice or text conversations.

Advantages and disadvantages of e-commerce

Benefits of e-commerce include its around-the-clock availability, the speed of access, the wide availability of goods and services for the consumer, easy accessibility and international reach.

- **Availability.** Aside from outages or scheduled maintenance, e-commerce sites are available [24x7](#), allowing visitors to browse and shop at any time. Brick-and-mortar businesses tend to open for a fixed number of hours and may even close entirely on certain days.
- **Speed of access.** While shoppers in a physical store can be slowed by crowds, e-commerce sites run quickly, which is determined by compute and [bandwidth](#) considerations on both consumer device and e-commerce site. Product pages and shopping cart pages load in a few seconds or less. An e-commerce transaction can comprise a few clicks and take less than five minutes.

- **Wide availability.** Amazon's first slogan was "Earth's Biggest Bookstore." They could make this claim because they were an e-commerce site and not a physical store that had to stock each book on its shelves. E-commerce enables brands to make a wide array of products available, which are then shipped from a warehouse after a purchase is made. Customers will likely have more success finding what they want.
- **Easy accessibility.** Customers shopping a physical store may have a hard time determining which aisle a particular product is in. In e-commerce, visitors can browse product category pages and use the site search feature to find the product immediately.
- **International reach.** Brick-and-mortar businesses sell to customers who physically visit their stores. With e-commerce, businesses can sell to any customer who can access the web. E-commerce has the potential to extend a business' [customer base](#).
- **Lower cost.** Pure play e-commerce businesses avoid the cost associated with physical stores, such as rent, inventory and cashiers, although they may incur shipping and warehouse costs.
- **Personalization and product recommendations.** E-commerce sites can track visitors' browse, search and purchase history. They can use this data to present useful and personalized product recommendations, and obtain valuable insights about target markets. Examples include the sections of Amazon product pages labeled "Frequently bought together" and "Customers who viewed this item also viewed."

The perceived disadvantages of e-commerce include sometimes limited [customer service](#), consumers not being able to see or touch a product prior to purchase and the wait time for product shipping.

- **Limited customer service.** If a customer has a question or issue in a physical store, he or she can see a clerk, cashier or store manager for help. In an e-commerce store, customer service may be limited: The site may only provide support during certain hours of the day, or a call to a customer service phone number may keep the customer on hold.
- **Not being able to touch or see.** While images on a webpage can provide a good sense about a product, it's different from experiencing it "directly," such as playing music on speakers, assessing the picture quality of a television or trying on a shirt or dress. E-commerce can lead consumers to receive products that differ from their expectations, which leads to returns. In some scenarios, the customer bears the burden for the cost of shipping the returned item to the retailer.
- **Wait time.** If a customer sees an item that he or she likes in a store, the customer pays for it and then goes home with it. With e-commerce, there is a wait time for the product to be shipped to the customer's address. Although shipping windows are decreasing as next day delivery is now quite common, it's not instantaneous.
- **Security.** Skilled [hackers](#) can create authentic-looking websites that claim to sell well-known products. Instead, the site sends customers counterfeit or imitation versions of those products -- or, simply collects customers' credit card information. Legitimate e-commerce sites also carry risk, especially when customers store their credit card information with the retailer to make future purchases easier. If the retailer's site is hacked, hackers may come into the possession of customers' credit card information.

E-commerce applications

E-commerce is conducted using a variety of applications, such as Email, online catalogs and shopping carts, Electronic Data Interchange ([EDI](#)), the file transfer protocol, web services and mobile devices. This includes B2B activities and outreach, such as using email for unsolicited ads, usually viewed as spam, to consumers and other business prospects, as well as

sending out e-newsletters to subscribers and SMS texts to mobile devices. More companies now try to entice consumers directly online, using tools such as digital coupons, [social media marketing](#) and targeted advertisements.

The rise of e-commerce has forced IT personnel to move beyond infrastructure design and maintenance to consider numerous customer-facing aspects, such as consumer [data privacy](#) and security. When developing IT systems and applications to accommodate e-commerce activities, [data governance](#)-related regulatory compliance mandates, personally identifiable information privacy rules and information protection protocols must be considered.

E-commerce platforms and vendors

An e-commerce platform is a tool that is used to manage an e-commerce business. E-commerce platform options exist for clients ranging in size from small businesses to large enterprises. A few examples of e-commerce marketplace platforms include:

- Amazon
- eBay
- Walmart Marketplace
- Chewy
- Wayfair
- Newegg
- Alibaba
- Etsy
- Overstock
- Rakuten

Vendors offering e-commerce platform services for clients hosting their own online store sites include:

- Shopify
- WooCommerce
- Magento
- Squarespace
- BigCommerce
- Ecwid
- Salesforce Commerce Cloud (B2B and B2C options)
- Oracle SuiteCommerce

What Is the Difference Between Ecommerce and Ebusiness?

Ecommerce involves the purchase and sale of goods and services online and is actually just one part of an ebusiness. An ebusiness involves the entire process of running a company online. Put simply, it's all of the activity that takes place with an online business.

Difference between E-Commerce and E-Business :

S. No.	E-COMMERCE	E-BUSINESS
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01.	E-Commerce refers to the performing online commercial activities, transactions over internet.	E-Business refers to performing all type of business activities through internet.
02.	E-Commerce is a narrow concept and it is considered as a subset of E-Business.	E-Business is a broad concept and it is considered as a superset of E-Commerce.
03.	Commercial transactions are carried out in e-commerce.	Business transactions are carried out in e-business.
04.	In e-commerce transactions are limited.	In e-business transactions are not limited.
05.	It includes activities like buying and selling product, making monetary transactions etc over internet.	It includes activities like procurement of raw materials/goods, customer education, supply activities buying and selling product, making monetary transactions etc over internet.
06.	It usually requires the use of only a website.	It requires the use of multiple websites, CRMs, ERPs that connect different business processes.
07.	It involves mandatory use of internet.	It involves the use of internet, intranet or extranet.
08.	E-commerce is more appropriate in Business to Customer (B2C) context.	E-business is more appropriate in Business to Business (B2B) context.
09.	E-Commerce covers outward/external business process.	E-Business covers internal as well as external business process/activities.

Forces Behind E-commerce

F-Commerce is becoming popular, it is worthwhile to examine today's business environment so let us understand the pressures it creates on organizations and the responses used by organizations.

Economic Forces One of the most evident benefits of e-commerce is economic efficiency resulting from the reduction in communications costs, low-cost technological infrastructure, speedier and more economic electronic transactions with suppliers, lower global information sharing and advertising costs, and cheaper customer service alternatives.

Categories of Economic Forces

- **Lower marketing costs:** marketing on the Internet maybe cheaper and can reach a wider crowd than the normal marketing medium.
- **Lower sales costs:** increase in the customer volume do not need an increase in staff as the sales function is housed in the computer and has virtually unlimited accessibility
- **Lower ordering processing cost:** online ordering can be automated with checks to ensure that orders are correct before accepting, thus reducing errors and the cost of correcting them.
- **New sales opportunities:** the website is accessible all the time and reaches the global audience which is not possible with traditional store front.

Market Forces

Corporations are encouraged to use e-commerce in marketing and promotion to capture international markets, both big and small. The Internet is likewise used as a medium for enhanced customer service and support. It is a lot easier for companies to provide their target consumers with more detailed product and service information using the Internet. Strong competition between organizations, extremely low labor cost in some countries, frequent and significant changes in markets and increased power of consumers are the reasons to create market forces.

Technology Forces

The development of information and communications technology (ICT) is a key factor in the growth of ecommerce. For instance, technological advances in digitizing content, compression and the promotion of open systems technology have paved the way for the convergence of communication services into one single platform.

Societal and environmental forces

To understand the role of E-commerce in today's organizations, it becomes necessary to review the factors that create societal and environmental forces.

- Changing nature of workforce
- Government deregulations
- Shrinking government subsidies
- Increased importance of ethical and legal issues
- Increased social responsibility of organizations
- Rapid political changes

Critical response activities by Organizations

A response can be a reaction to a pressure already in existence, or it can be an initiative that will defend an organization against future pressures. It can also be an activity that exploits an opportunity created by changing conditions.

Strategic Systems

Strategic systems provide organizations with strategic advantages, thus enabling them to increase their market share, better negotiate with their suppliers, or prevent competitors from entering into their territory.

Business Process Reengineering (BPR)

Business Process Reengineering refers to a major innovation in the organization's structure and the way it conducts business. Information technology and especially EC play a major role in BPR. Electronic Commerce provides flexibility in manufacturing, permits faster delivery to customers and supports rapid and paperless transactions among suppliers, manufacturers and retailers.

ARCHITECTURAL FRAMEWORK OF E COMMERCE:-

An e-commerce framework is made of the underlying architecture needed to develop and maintain a system for selling products online. This system typically includes a [digital storefront](#), [product information manager \(PIM\)](#), [order management system](#), shopping cart, and payment processing.

corporations to facilitate the integration of data and software for better applications. The electronic commerce application architecture consists of six layers of functionality, or services:

- (1) Applications;
- (2) Brokerage services, data or transaction management;
- (3) Interface, and; support layers”
- (4) Secure messaging, security and electronic document Interchange;
- (5) Middle ware and structured document interchange; and
- (6) Network infrastructure and basic communications services

Application services	Customer- to- business Business- to- business Intra-organizational
Brokerage and data management	Order processing Payment advances-electronic cash Virtual mail
Interface layer	Interactive catalogues Directory support functions Software agents
Secure messaging	Encrypted e-mail, EDI Remote programming
Middle ware services	Structured documents (SCML,HTML) Compound documents
Network infrastructure	Wireless - cellular, radio, PCs Wire line – POTS, coaxial, fibre optic

1. Applications: In the application layer services of e-commerce, it is decided that what type of e-commerce application is going to be implemented. There are three types of distinguished e-commerce applications i.e., consumer to business application, business-to-business application and intraorganizational application

2. Information Brokerage and Management Layer: This layer is rapidly becoming necessary in dealing with the voluminous amounts of information on the networks. This layer works

as an intermediary who provides service integration between customers and information providers, given some constraint such as low price, fast services or profit maximization for a client.

3. Interface and Support Services: The third layer of the architectural framework is interface layer. This layer provides interface for ecommerce applications. Interactive catalogs and directory support services are the examples of this layer

Secure Messaging Layer: electronic messaging services like e-mail, enhanced fax and EDI.

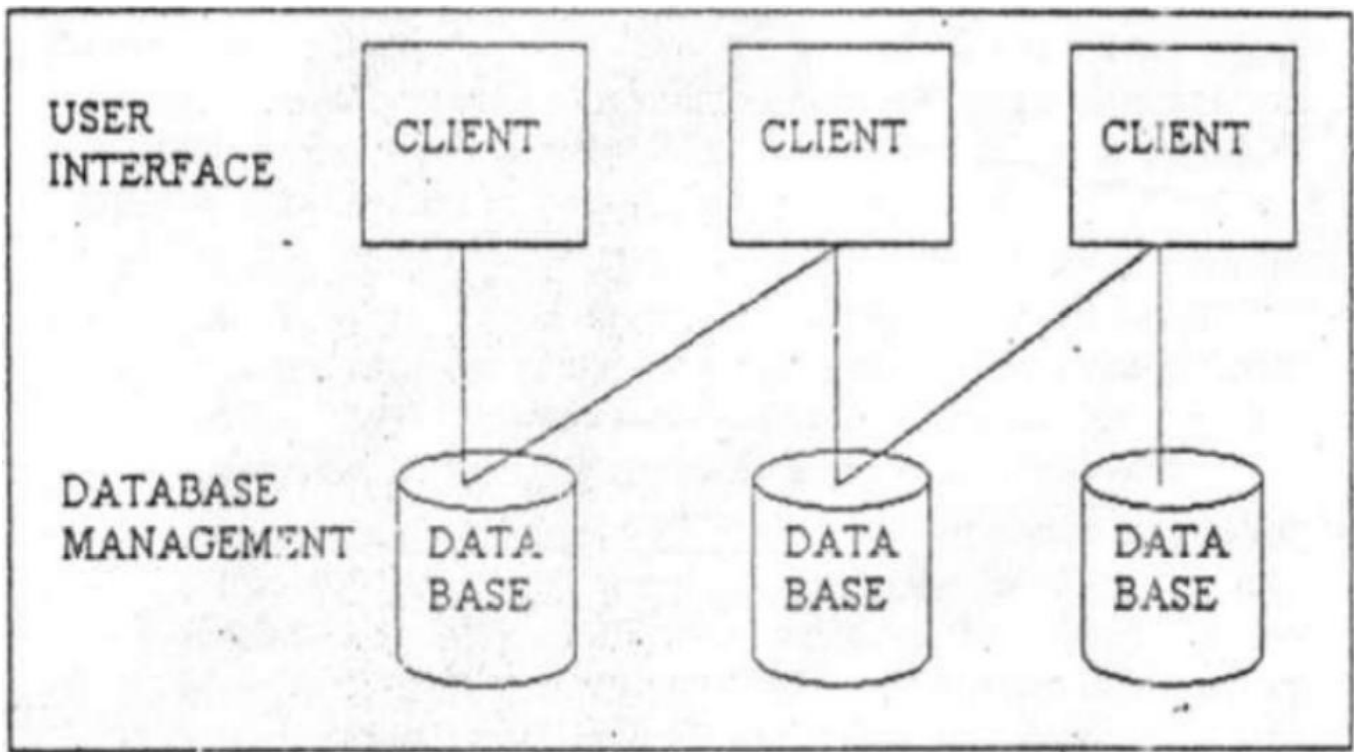
Middleware services: The enormous growth of networks, client server technology and all other forms of communicating between/among unlike platforms is the reason for the invention of middleware services. The middleware services are used to integrate the diversified software programs and make them talk to one another.

Network Infrastructure: We know that the effective and efficient linkage between the customer and the supplier is a precondition for e-commerce

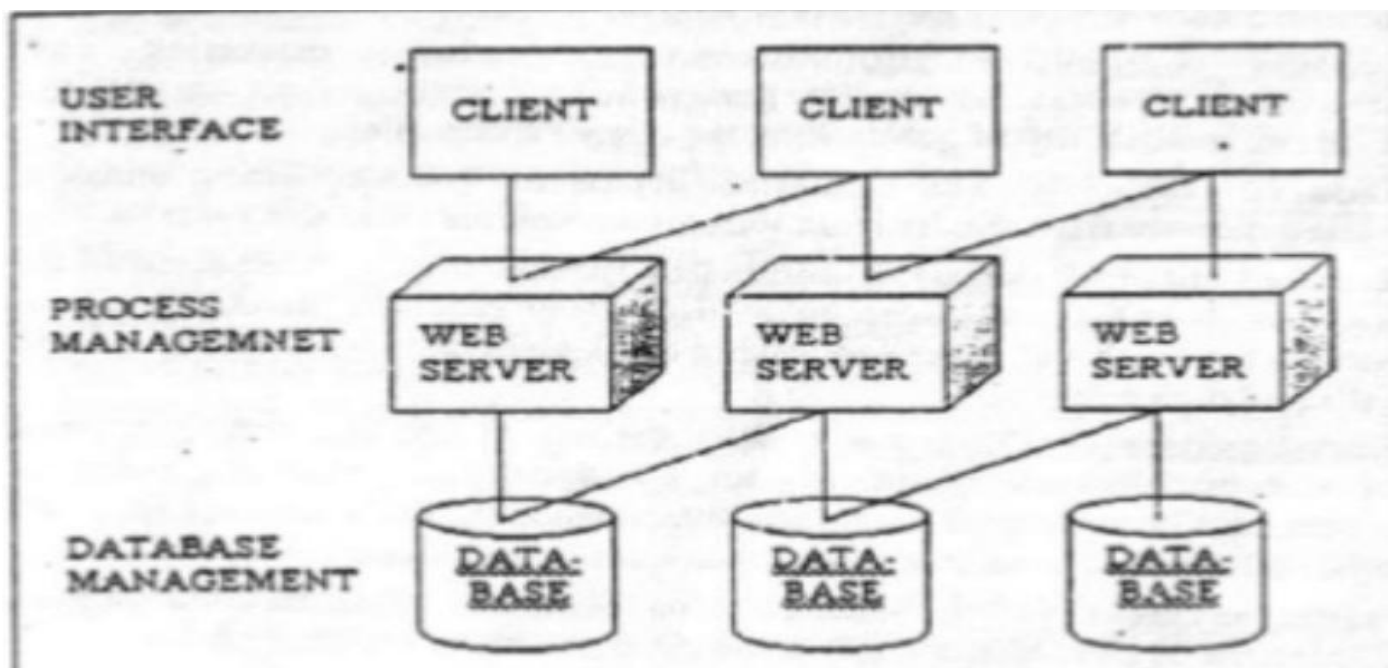
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E-commerce Architecture:- E-commerce is based on the client-server architecture. A client can be an application, which uses a Graphical User Interface (GUI) that sends request to a server for certain services. The server is the provider of the services requested by the client. In E-commerce, a client refers to a customer who requests for certain services and the server refers to the business application through which the services are provided

There are two types of client server architecture that E-commerce follows: two-tier and three-tier. E- Commerce System Architecture: **Two-tier architecture:** In two-tier client-server architecture the user interface runs on the client and the database is stored on the server. The business application logic can either run on the client or the server. The user application logic can either run on the client or the server. It allows the client processes to run separately from the server processes on different computers



F-Commerce System Architecture: Three-tier architecture:—The three-tier architecture emerged in the 1990s to overcome the limitations of the two-tier architecture. In three-tier architecture, the user interface and the business application logic, also known as business rules and data storage and access, are developed and maintained as independent modules. The three-tier architecture includes three tiers: top tier, middle tier and third tier



E-Commerce – Impact of E-Commerce:

E-commerce has made a profound impact on society. People can now shop online in the privacy of their own homes without ever having to leave. This can force larger brick and mortar retailers to open an online division. In some cases, it can also force smaller businesses to shut their doors, or change to being completely online.

The following are the impacts of e-commerce on the global economy:

1. Impacts on Direct Marketing:

- i. Product Promotion – E-commerce enhances promotion of products and services through direct, information-rich, and interactive contact with customers.
- ii. New Sales Channel – E-commerce creates a new distribution channel for existing products. It facilitates direct reach of customers and the bi-directional nature of communication.
- iii. Direct Savings – The cost of delivering information to customers over the internet results in substantial savings to senders when compared with non-electronic delivery. Major savings are also realized in delivering digitized products versus physical delivery.
- iv. Reduced Cycle Time – The delivery of digitized products and services can be reduced to seconds. Also, the administrative work related to physical delivery, especially across international borders, can be reduced significantly, cutting the cycle time by more than 100 percent.
- v. Customer Service – Customer service can be greatly enhanced by enabling customers to find detailed information online. Also, intelligent agents can answer standard e-mail questions in seconds and human experts' services can be expedited using help-desk software.
- vi. Corporate Image – On the web, newcomers can establish corporate images very quickly. Corporate image means trust, which is necessary for direct sales. Traditional companies such as Intel, Disney, Dell, and Cisco use their web activities to affirm their corporate identity and brand image.
- vii. Customization – E-commerce provides for customization of products and services, in contrast to buying in a store or ordering from a television, which is usually limited to standard products. Dell Computers Inc. is a success story of customization.

Today, we can configure not only computers but also cars, jewellery, gifts, and hundreds of other products and services. If properly done, one can achieve mass customization. It provides a competitive advantage as well as increases the overall demand for certain products and services.
- viii. Advertisements- With direct marketing and customization comes as one-to-one or direct advertisement, which is much more effective than mass advertisement. This creates a fundamental change in the manner in which advertisement is conducted not only for online trades but also for products and services that are ordered in traditional ways.
- ix. Ordering Systems- Taking orders from customers can drastically be improved if it is done online. When taken electronically, orders can be quickly routed to the appropriate order-processing site. This saves time and reduces expenses, so sales people have more time to sell. Also, customers can compute the cost of their orders, saving time for all parties involved.
- x. Markets- The physical market disappears as does the need to deliver the goods to the marketplace. In a market space, which is an electronic market, goods are delivered directly to buyers when purchasing is completed making markets much more efficient.

2. Impacts on Organisation:

i. Technology and Organizational Learning:

Rapid progress in e-commerce will force companies to adapt quickly to the new technology and offer them an opportunity to experiment with new products, services, and processes. New technologies require new organizational approaches.

ii. Changing Nature of Work:

The nature of work and employment will be transformed in the digital age; it is already happening before our eyes. Driven by increased competition in the global marketplace, firms are reducing the number of employees down to a core of essential staff and outsourcing whatever work they can to countries where wages are significantly less expensive.

iii. New Product Capabilities:

E-commerce allows for new products to be created and existing products to be customized in innovative ways. Such changes may redefine organizations' missions and the manner in which they operate.

3. Impacts on Manufacturing:

The production systems are integrated with finance, marketing, and other functional systems, as well as with business partners and customers. Using web-based ERP systems, orders that are taken from customers can be directed to designers and to the production floor, within seconds.

4. Impacts on Finance:

E-commerce requires special finance and accounting systems. Traditional payment systems are ineffective or inefficient for electronic trade. The use of the new payment systems such as electronic cash is complicated because it involves legal issues and agreements on international standards.

5. Impact on Supply Chain Management:

Electronic commerce and the internet are fundamentally changing the nature of supply chains, and redefining how consumers learn about, select, purchase, and use products and services.

The result has been the emergence of new business-to business supply chains that are consumer-focused rather than product-focused. They also provide customized products and services. E-commerce impacts supply chain management in a variety of keyways.