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# E-commerce in India

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**Abstract**
E-commerce (Electronic commerce) is the buying and selling of goods and services on the Internet, especially the World Wide Web. Unlike traditional commerce that is carried out physically with effort of a person to go and get products, E-commerce has made it easier for human to reduce physical work and to save time. E-commerce and online shopping in India is getting a noticeable growth as more usage of internet facilities, high educational standards, changing life style and economical growth of the country reasons in the demand of E-commerce techniques and tools. E-Commerce is a particular form of e-Business. Electronic business methods enable companies to link their internal and external data processing systems more efficiently and flexible, to work more closely with suppliers and partners, and to better satisfy the needs and expectations of their customers. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. E-commerce which was started in early 1990's has taken a great leap in the world of computers, but the fact that has hindered the growth of E-commerce is security. Security is the challenge facing E-commerce today and there is still a lot of advancement made in the field of security.
The main advantage of E-commerce over traditional commerce is the ability to provide secure shopping transactions via the internet and coupled with almost instant verification and validation of transactions. One of the most important issues to be addressed in E-commerce is the area of services.

**Keywords:** E-commerce, economical growth, electronic funds transfer

## Introduction

Electronic Commerce commonly written as "E-commerce", is the activity of electronically buying or selling of products or services using computer networks, such as the Internet. E-Commerce is a particular form of e-Business. Electronic business methods enable companies to link their internal and external data processing systems more efficiently and flexible, to work more closely with suppliers and partners, and to better satisfy the needs and expectations of their customers. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. Compared to e-Commerce, e-Business is a more generic term because it refers not only to information exchanges related to buying and selling but also servicing customers and collaborating with business partners, distributors and suppliers.

The Indian retail market is witnessing a revolution. The year 2014 was a step forward year for Indian E-commerce, not because of the funds in billions it raised but for the growth in volume as well as in sales. The online business industry is well established in India. And, everyday some of the other new player is taking a plunge. Though, a major contribution to its growth is provided by E-commerce industry. As per the report of eBay India, E-commerce in the country has seen a significantly upsurge in the number of people shopping online.

Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as E-Mail.
E-Commerce businesses may employ some or all of the following:

- Online shopping websites for retail sales direct to consumers,
- Providing or participating in online marketplaces, which process third-party business-to-consumer or consumer-to-consumer sales

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- Business-to-business buying and selling,
- Gathering and using demographic data through Web contacts and social media,
- Business-to-business electronic data interchange,
- Marketing to prospective and established customers by E-Mail or fax (for example, with newsletters),
- Engaging in pretail for launching new products and services.

Pretail (also referred to as pre-retail, or prE-commerce) is a sub-category of E-Commerce and online retail for introducing new products, services, and brands to market by pre-launching online, sometimes as reservations in limited quantity before release, realization, or commercial availability. Pretail includes pre-sale commerce, pre-order retailers, incubation marketplaces, and crowd funding communities.

## Architecture of e-commerce
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. The business application that provides services is deployed on a Web' server. The E - Commerce Web server is a computer program that provides services to "other computer programs and serves requested Hyper Text Mark-up Language (HTML) pages or files. In client-server architecture, a machine can be both a client as well as a server. There are two types of client server architecture that E-commerce follows: two-tier and three-tier. 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.

## Components of e-commerce
The technology and infrastructure used to develop the E-commerce application is the key to its success. The hardware and software must be selected in such a way that they can fulfill the needs of the E-commerce application.
The following figure shows the components involved in E-commerce infrastructure.
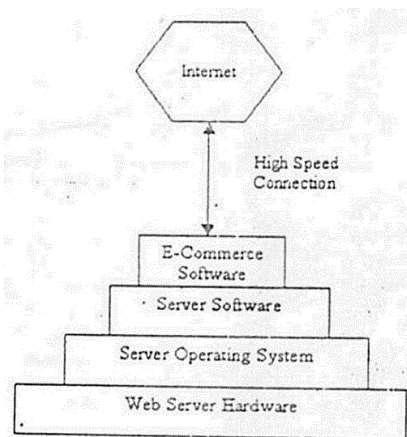


**Fig 1:** Components of e-commerce

## Hardware
A Web server hardware platform is one of the major components of the Ecommerce infrastructure on which the performance of the whole E-commerce application depends. While selecting Web server hardware, the software that will run on the server of the E-commerce transactions to be processed must be considered. The amount of the storage capacity and the computing power required depend on the volume of the E-commerce transaction to be processed.
If the exact requirements are not known in advance, then the hardware configuration should be highly scalable so that they can be upgraded to meet the requirements.

## E-commerce software's
Software is the main component that implements the E-commerce services and functionality. Software for E-commerce can be categorized in the following two types

## Web server software
Web server software is required in addition to the Web server operating system software. It is used to implement some extra functionality such as security and identification and retrieval and sending of Web pages. Web server software creates a Web log file that identifies things such as the URL of the visitor, the length of the visit and the search engine and the key words used to find the site. Web server software includes website development tools such as HTML editor and web page upload support.

## E-commerce software's
With the growth of E-commerce, many applications have emerged – for example, the electronic shopping cart that tracks the items selected for purchase and their costs. A typical E-commerce software must support the following processes:

## Catalog management
It is required to deliver the customized content to the screen or the GUI used by the customer. The software used for catalog management combines the different product data formats into a standard format for viewing, aggregating and interacting catalog data into a central store.

## Product configuration
The Web-based product configuration software allows the user to build the product to their specifications without the intervention of the salespeople. For example, Dell Computers and CISCO systems use configuration software to sell build-to-order and network processes to their customers over the Internet.

## Shopping cart
A model known as shopping cart is used by E-commerce sites to track the items that are selected for purchase; the shopping cart allows customers to view all the items selected by them. The customers can add new items and remove the previously selected items from the shopping cart.

## Transaction processing
E-commerce transaction processing is used to process the data received from the shopping cart and to calculate the total cost of the purchase.

**Web traffic data analysis**
It is required to analyze all the data captured in the Web log file. The analysis is essential to improve the Website performance.

**Business models of e-commerce**
In E-commerce, business models are models that define the way in which business is' done over the Internet. Creating and deploying an E-commerce Website is a prerequisite for creating any E-commerce solution. Identification of the business model is first step in the development of an E-commerce Website. Business models in E-commerce can be categorized into the following five types, depending on the type of parties involved in transaction:

**Business to business (B2B):** It involves the full spectrum of online business occurring between two organizations, including purchasing and procurement, supplier management, inventory management, channel management, sales activities, payment management, and service and support.

**Business to consumer (B2C):** Business to Consumer E-commerce refers to the exchanges between Business and Consumer. It changes the traditional way of doing business with customer by getting goods from Manufacturer/Retailer to the consumer directly.

**Consumer to consumer (C2C):** Consumer to Consumers involves transactions between and among consumers. These transactions may or may not include a third party involvement.

**Consumer to business (C2B):** Consumer to Business is relatively a new model of commerce and is a reverse of the traditional commerce models. Here, consumers provide services or goods to businesses and create value for the business.

**Business to business to consumer (B2B2C):** This is a variant of the B2B2C model wherein there is an additional intermediary business to assist the first business transacts with the end consumer.

**E-commerce in India**
The online business industry is well established in India. And, everyday some or the other new player is taking a plunge. Though, a major contribution to its growth is provided by E-commerce industry. With the evolution of technology and increase in consumerism all over India, e-commerce is riding the high tide in online business. Today, the total number of internet users in the world is close to 3 billion, out of this India has a total of 259.14 million internet and broadband subscribers. Easy access to internet via mobile devices coupled with increasing confidence of the customers to purchase online is leading the way. Because of this, increasing number of people are registering on e-commerce websites and purchasing products through the use of cell phones. According to a report, annual growth rates in leading e-commerce markets of Japan, South Korea and Australia will run at 11% to 12% over the few years. In retrospect, the rapidly growing market of China and India is 25% and 57% respectively.

According to a research, Indian E-commerce made up about 0.76 percent of India's GDP in 2017. This was estimated to reach 0.9 percent in 2018. By being the second largest online market in the world after China, the country's rapid growth in the digital sphere, specifically following demonetization in November 2016 and the rise of the mobile payments market facilitates the opportunity for growth in the years to follow. Owing to the increasing internet user base and favorable market conditions, India has a lot of potential in the e-commerce industry. Growing at an exponential rate, the market value of the e-commerce industry in India was approximately 50 billion U.S dollars in 2018. This number was estimated to reach 200 billion U.S. dollars by 2027.
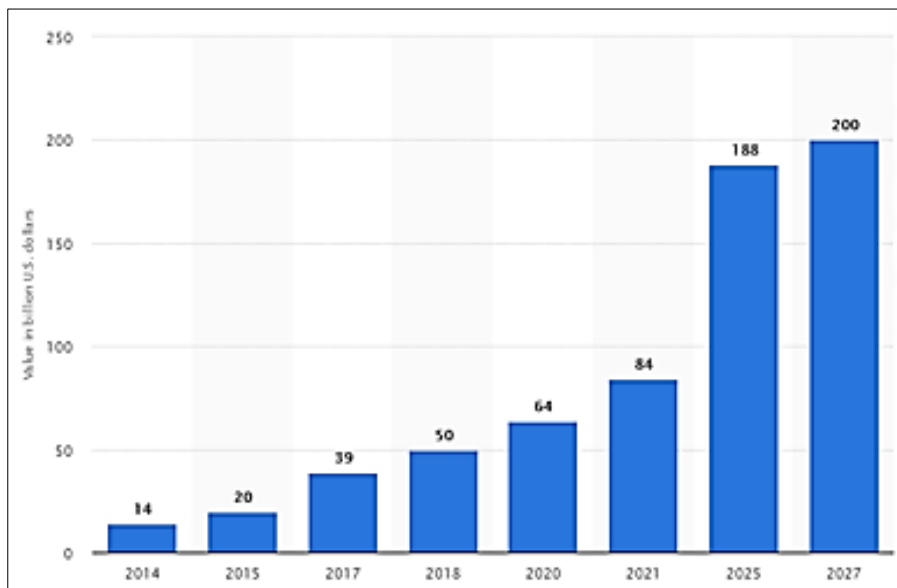


In billion US dollar

**Fig 2:** E-commerce in India

**Government initiatives**
● The Reserve Bank of India (RBI) has decided to allow "inter-operability" among Prepaid Payment Instruments

(PPIs) such as digital wallets, prepaid cash coupons and prepaid telephone top-up cards. RBI has also instructed banks and companies to make all know-your-customer

(KYC)-compliant prepaid payment instruments (PPIs), like mobile wallets, interoperable amongst themselves via Unified Payments Interface (UPI).

- The Government of India has distributed rewards worth around US$23.8 million to 1 million customers for embracing digital payments, under the Lucky Grahak Yojana and Digi-Dhan Vyapar Yojana.
- The Government of India launched an e-commerce portal called TRIFED and an m-commerce portal called 'Tribes India' which will enable 55,000 tribal artisans get access to international markets.
  To increase the participation of foreign players in the e-commerce field, the Indian Government hiked the limit of foreign direct investment (FDI) in the E-commerce marketplace model for up to 100 per cent (in B2B models).
- The e-commerce industry been directly impacting the micro, small & medium enterprises (MSME) in India by providing means of financing, technology and training and has a favorable cascading effect on other industries as well.

**Advantages and disadvantages of e-commerce**
E-commerce covers the global information economy, which includes electronic trading goods and services, electronic fund transfer, online procurement, direct marketing and electronic billing. E-commerce provides the procedures or the ways for generating profits by increasing the number of transactions. Some of the main advantages of E-commerce are as follows:

**Increased access:** E-commerce has made it easier for businesses to reach people around the world and run their operation without approaching their suppliers directly. E-commerce businesses provide access to the consumers and the other businesses all over the world.

**Reduces competitive gap:** E-commerce reduces marketing and advertising expenses. So, smaller companies can also compete on quality, price and availability of goods with the bigger companies.

**Reduced sale cycle:** The customers access the product listing and the pricing directly from the Internet without any phone calls and e-mails.

**Reduced cost of business:** E-commerce reduces the effort required to do business. It reduces the amount of manpower required; inventory costs, purchasing costs and order processing costs associated with faxing, phone calls and data entry.

**Easy business administration:** With the use of efficient software, most of the business-related tasks can be done automatically. Business processes like storing of inventory levels, shipping and receiving logs and other business administration processes are automatically stored.

**Better payment system:** With the advancement in payment technologies, E-commerce allows encrypted and secure payment facilities on-line.

**Reduced burden on staff:** E-commerce simplifies the customer service and sales support tasks, thus relieving the staff from one of their job responsibilities.

**Medium to grow business:** E-commerce serves as a medium for start-up, small and medium sized companies to reach the global market.

**Network production:** E-commerce allows parceling of the production process to the contractors who are geographically separated but are connected through the Internet. This helps in selling of add-on-products, services and new systems.

**Disadvantages:** E-commerce has helped customers to find the required product in an easy way. But, there are some difficulties that exist in the use of E-commerce. Some of the most common difficulties are as follows:

- It is difficult to decide the criteria on which taxes should be charged on the selling of goods over the Internet in case the business and the customer are in different states. It would be unfair to collect taxes from businesses whose products are not marketed over the Internet and to allow businesses selling their products over the Internet not to pay any tax.
- The issue of security is another major area of concern on E-commerce. The security issues concerning personal and financial information about a customer still exists even with the improvement of data encryption techniques.
- The cost that is involved in the development and deployment of E-commerce application is very high.
- Some protocols are required to develop some specific E-commerce applications that are not standardized around the world. The deployment of such applications over the Internet required that these protocols should be available on the client side.
- The integration of E-commerce infrastructure with the present organizational Information technology system is difficult. The technologies used in the development of an E-commerce application in an organization may be different from that of the presently existing application used in the organization.
- There are no common rules and regulations agreed to by all the parties involved in the development and usage of Web resources and applications.
- On the business side, higher employee training is required for proper management of the process involved in the transactions.

**Conclusions**
E-commerce has grown significantly during the past 5 years. E-commerce has not only changed the way consumers view their purchasing power but also help skyrocketed the economy. More and more businesses are during their business over the web. Business to business transactions are at their peak and it is predicted it will grow even more! E-commerce refers to all forms of business activities across the internet. This can include B2B, intranets and extranets, online advertising, and any form that are used for some type of communication. E-commerce has several advantages and disadvantages as indicated in these papers.
E-commerce applications that started in early 1990's needs to be still developed in terms of security and efficiency. Once consumers and businesses realize some of the dangers of E-commerce, there could be fewer incidents of identity theft and credit card fraud. For the developing country like India advancement in E-commerce is a challenge to compete

with the developed countries. Hopefully in the future, these issues can be rectified.

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