Electronic mail (e-mail)

1.1 Introduction

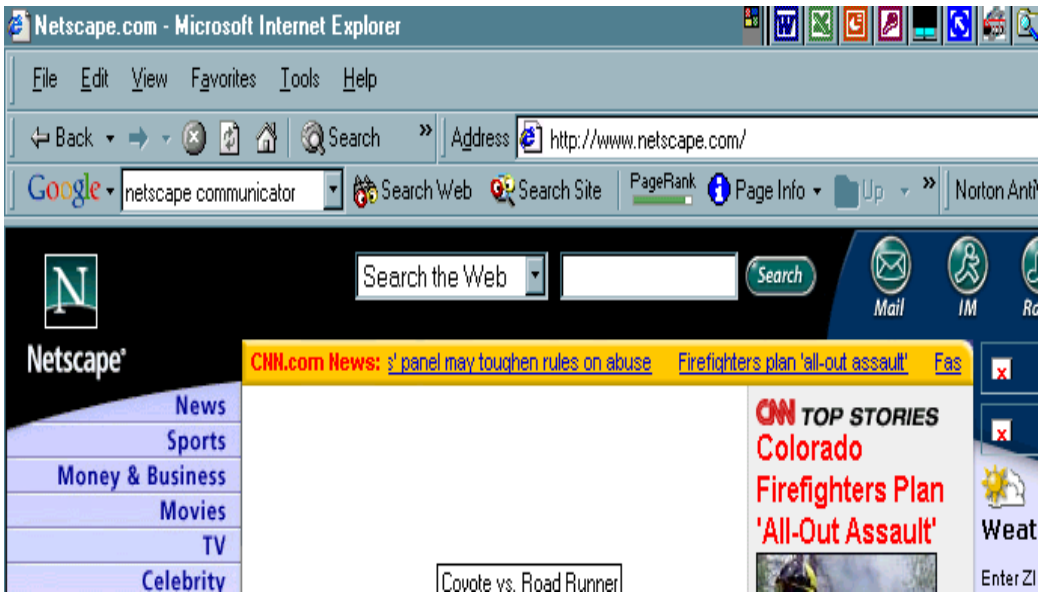
Electronic mail, often referred to as e-mail, is a paperless form of communication. Whether the system is based on local area networks (LANs), main frame computers, or commercial e-mail services, e-mail allows messages to be sent from one computer user to another. Within an organization, e-mail can replace other forms of communication such as memos, telephone calls and personal visits.

One of the most popular network services is electronic mail (email). Electronic mail is used for sending a single message that includes text, voice, or graphics to one or more recipients. Simple Mail Transfer Protocol (SMTP) is the standard mechanism for electronic mail in the Internet.

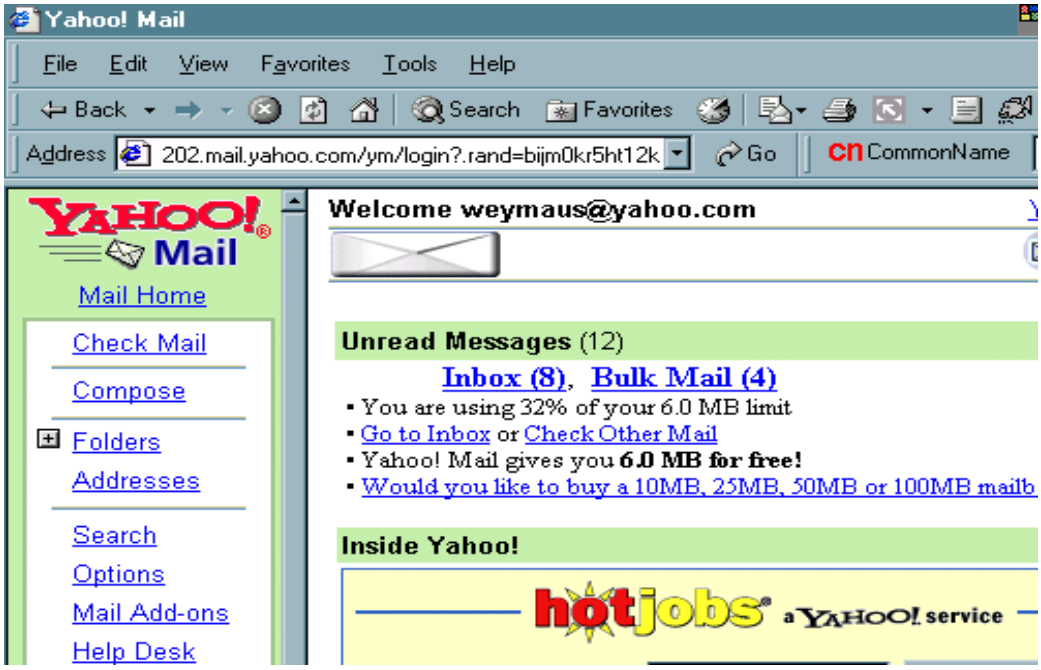
1.2 A Look At Various Email Programs

These are just a few of the many email services available. There are many more free email services to look at, also. You will probably end up using a different email service in the future after you have a chance to talk to people about their preferences. You will find features that impress you and choose an email based on what you want. Basically all email accounts ask for similar information.

Netscape Communicator (free)



Yahoo Mail (free)



Hotmail (free)

1.3 History

In the early 1970's, Ray Tomlinson was working on a small team developing the TENEX operating system, with local email programs called SNDMSG and READMAIL. In late 1971, Tomlinson developed the first ARPANET email application when he updated SNDMSG by adding a program called CPYNET capable of copying files over the network, and informed his colleagues by sending them an email using the new program with instructions on how to use it.

1.4 Advantage of using the Email

Easy to use: it helps us to manage our contact ,send mails quickly, store the required information.

Speed: No other services match the email in terms of speed.

Easy to prioritized: since the mails has the subject lines, it is easy to prioritize them and ignore unwanted mails.

Reliable and secure: constant efforts are being taken to improve the security in electronic mails.

Informal and conversational: the language used in email is generally simple and thus makes the communication informal.

Use of graphics: colorful greeting cards and interesting pictures can be sent through emails. This adds value to the email services.

Advertising tool: many individual and companies are using emails to advertise their products, services.

1.5 Strategy of working

- ***Sending email***

To send mail, the user creates mail that looks very similar to postal mail. It has an envelope and a message

Envelope: The envelope usually contains the address, the receiver address, and other information.

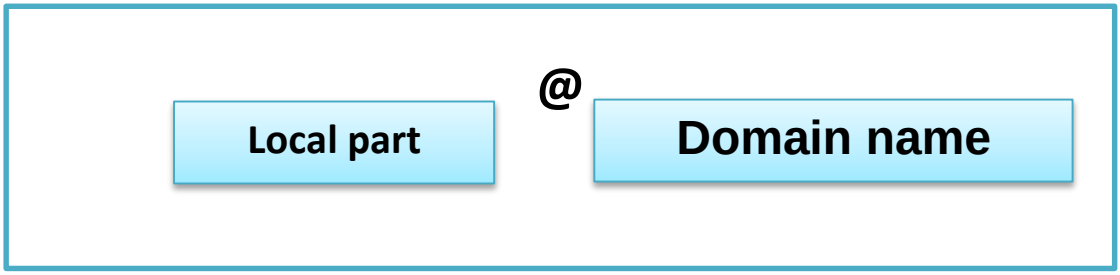
Message: The message contains the headers and the body. The headers of the message define the sender, the receiver, the subject of the message, and other information. The body of the message contains the actual information to be read by the recipient.

- ***Receiving Mail***

The email system periodically checks the mailboxes. If a user has mail, it informs the user with a notice. If the user is ready to read the mail, a list is displayed in which each line contains a summary of the information about a particular message in the mailbox. The summary usually includes the sender mail address, the subject, and the time the mail was sent or received. The user can select any of the messages and display its contents on the screen.

- ***Addresses***

To deliver mail, a mail handling system must use an addressing system with unique address. The addressing system used by SMTP consists of two parts: a local part and a domain name, separated by an @ sign see figure (1).



Figure(1)

Local Part: The local part defines the name of a special file, called the user mailbox, where all the mail received for a user is stored to be used by the user agent.

- **Domain Name:**

  The second part of the address is the domain name. An organization usually selects one or more hosts to receive and send; they are called mail exchangers. The domain name assigned to each mail exchanger either comes from the DNS database or is a logical name (ex.: the name of the organization).

1.6 **User Agent (UA)**

The first component of an electronic mail system is the user agent (UA). A user agent sometimes is called a mail reader.

User Agent Types: There are two types of user agents: command-driven and GUI-based.

1) Command Driven: Command –driven user agents belong to the early days of electronic mail. A command-driven user agent normally accepts a one-character command from the keyboard to perform its tasks

2) GUI – Based: Modern user agents are GUI-based. They contain Graphical User Interface (GUI) components that allow the user to interact with the software by using both the keyboard and the mouse. They have graphical components such as icons, menu bars, and windows that make the services easy to access. Some examples of GUI-based user agents are Eudora, Microsoft's Outlook, and Netscape.

1.7 Services provided by a User Agent:

A user agent is a software package (program) that composes (new mail), reads, replies to, and forwards messages. It also handles mailboxes (See Fig.2).

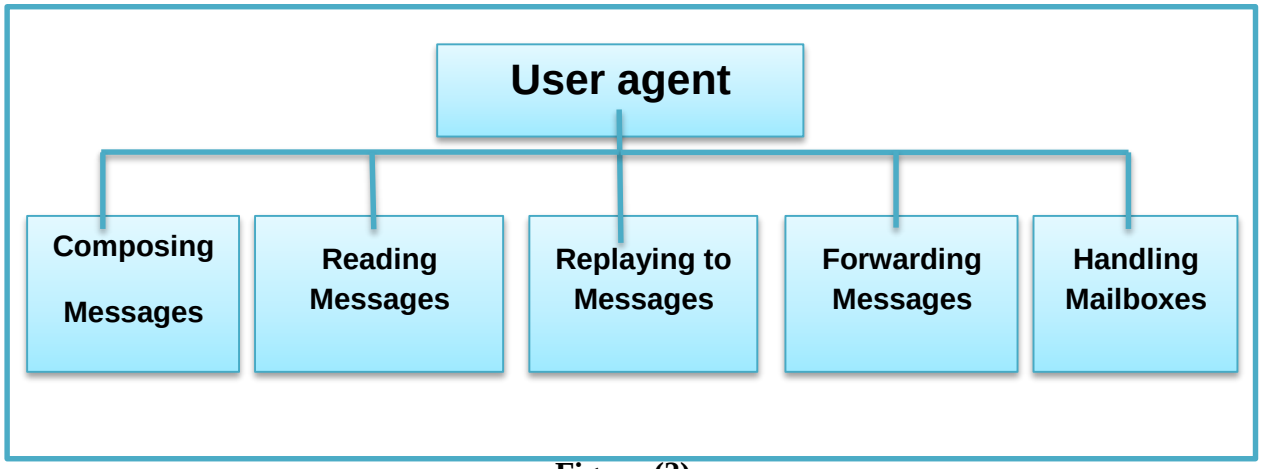


Figure (2)

1) Composing Messages: A user is responsible for composing the email message to be sent out. Most user agents provide a template on the screen to be filled in by the user. Some even have a built-in editor that can do spell checking, grammar checking, and other tasks.

2) Reading Messages: The second duty of the user agent is to read the incoming messages when a user invokes a user agent; it first checks the mail in the incoming mailbox. Most user agents show a one-line summary of each received mail which contain the following fields:

1) A number field.

2) A flag field that shows if the mail is new, already read but not replied to, read and replied to, and so on.

3) The size of the message.

4) The sender.

5) The subject fields if the subject line in the message is not empty

3) Replying to Messages: After reading a message, a user can use the user agent to reply to a message. Normally, a user agent allows the user to reply to the original sender or to reply to all recipients of the message. The reply message normally contains the original message (for quick reference) and the new message side receives the ASCII data and delivers them to MIME to be transformed to the original data. MIME is a set of software functions that transform non-ASCII data to ASCII data and vice versa (See fig.3)

4) Forwarding Messages: Replying is defined as sending a message to the sender or recipients of the copy, or sending it to third party. A user agent allows the receiver to forward the message, with or without extra comments, to a third party.

5) Handling Mailboxes: A user agent normally two mailboxes: inbox and outbox. Each box is a file with a special format that can be handled by the user agent. The inbox keeps all the received e-mails until they are deleted by the user. The outbox keeps all the sent e-mail until the user deletes them. Most user agents today are capable of creating customized mailboxes.

E-business

2.1 Introduction about E-business

IBM, in 1997, was one of the first to use the term when it launched a campaign built around the term. Today, many corporations are rethinking their businesses in terms of the Internet and its capabilities. Companies are using the Web to buy parts and supplies from other companies, to collaborate on sales promotions, and to do joint research. Exploiting the convenience, availability, and global reach of the Internet, many companies, both large and small have already discovered how to use the Internet successfully. E-Business (electronic business) is, in its simplest form, the conduct of business on the Internet. It is a more generic term than e-Commerce because it refers to not only buying and selling but also servicing customers and collaborating with business partners.

2.2 The Definition of E-Business

- E-business is the term used to describe the information systems and applications that support and drive business processes, most often using web technologies.
- E-business is about using the convenience, availability and world-wide reach to enhance business or creating new virtual business.
- In a very broad and general sense, electronic business has often been defined as any business carried out in electronic form.
- E-Business is the complex fusion of business processes, enterprise applications, and organizational structure necessary to create a high-performance business model.

Advantages

1. **Worldwide Presence**:

This is the biggest advantage of online business. the company can have a nationwide or a worldwide presence.

2. **Cost-effective Marketing and Promotions**

   using the web to market products guarantees worldwide reach at a nominal price.

3. **Better Customer Service**

   E-business has resulted in improved customer service. The available customer service may help in encouraging the customer to know more about the product or service. Moreover, payments can be made online, and products can be shipped to the customer without the customer having to leave the house.

4. **Limit of Transaction Cost**

   there is no acting middleman. Websites are sufficiently loaded with directions to facilitate stress-free transactions

5. **Overhead Costs Are Reduced**

   An E-business, essentially, don't need a costs that needed in business having a physical entity. Utility bills and Staff salaries and security staff and so on .

Disadvantages

1. **Sectoral Limitations**

   The main disadvantage of e-business is the lack of growth in some sectors. Like food sector because of the food products being perishable items. Consumers do not look for food products on the Internet, since they prefer going to the supermarket .

2. **Costly E-business Solutions for Optimization**

   essential resources are required, like Upgrading computer systems, training personnel, and updating websites, and so on.

3. **Data Security**

   To carry out online transactions, the websites ask for your email address and other contact details. Customers brake at the mention of providing personal details , because of they don't want there personal information fall in a hand of hacker or same one else .

4. **Site Integrity**

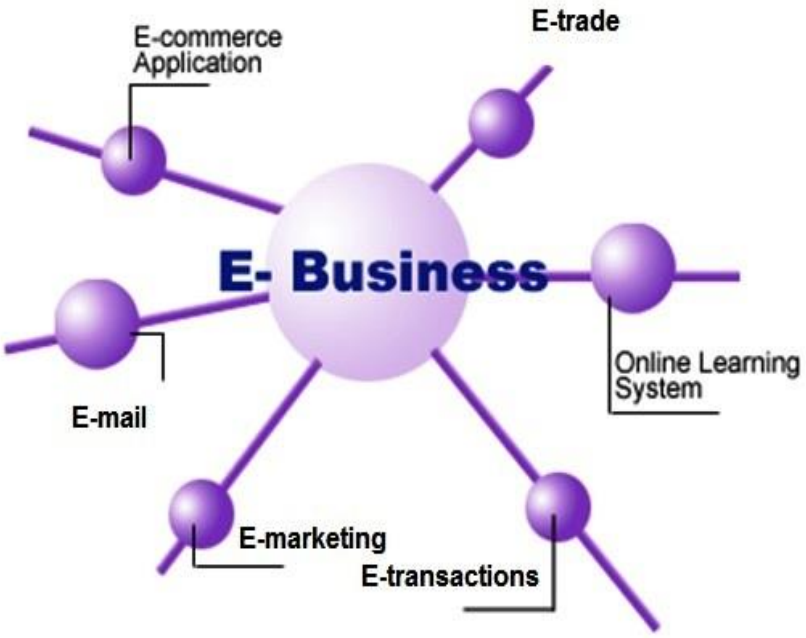
   Customers need secure access all the time. In addition to it, protection to data is also essential. Unless the transaction can provide it.

5. **System Up gradation**

   A company definitely needs a well-developed website to support numbers of customers at a time. If your web destination is not well enough, you better forget it.

E-Business Category

- E-banks
- E-trade
- E-engineer
- E-learning
- E-mail
- E-marketing
- E-transactions



2.3 Business Structures

❖ **Sole-Proprietorship**

a sole-proprietorship business is when someone owns a business that is not incorporated and they are the sole owner hence fore the term sole-proprietor. You are the sole owner of the e-business.

❖ **Partnership**

a partnership is a business were more than one person (two or more) forms a business. Each person contributes an equal share in monies, property, labor, and expects to share in the profits and losses of the business. A partner is not an employee of the business.

❖ **LLC (Limited Liability Corporation)**

An LLC is a form of a corporation where members have limited personal liability for the debt and actions of the LLC. This is a new and popular way to structure your business in many states. It would be wise to research your particular states statutes for an LLC prior to forming. The overall basic idea of this structure is flexibility for its members and the limited personal liability it offers its members.

❖ **Corporations**

Structuring as a Corporation or an S Corporation brings benefits for startup businesses that expect to have shareholders. This is not recommended for a new E-Business Startup however as the business is established and profitable this business structure may be appropriate for the business and the new e-business startup owner. Familiarizing yourself with this type of a business is essential.

2.4 Components of E-Business

To execute these applications, companies need the right information, infrastructure, and support services. As shown:

- ***People*:** Sellers, buyers, intermediaries, information systems specialists and other employees, and any other participants.
- ***Public policy*:** Legal and other policy and regulating issues, such as privacy protection and taxation.
- ***Marketing and advertising*:** Like any other business, EC usually requires the support of marketing and advertising.
- ***Support services*:** Many services are needed to support EC. They range from payments to order delivery and content creation.
- ***Business partnerships*:** Joint ventures, e-marketplaces, and partnerships are some of frequently occurring relationships in e-business

2.5 -Business – Transaction Medium

Most e-business is done over the Internet. But EB can also be conducted on private networks, such as *value-added networks* (*VANs, networks that add communication services to existing common carriers*), on local area networks (LANs) or wide area networks (WANs).

E-Business – Transaction Types

E-business transactions can be done between various parties.

- ***Business-to-business (B2B):*** Both the sellers and the buyers are business organizations.
- ***Collaborative commerce (c-commerce):*** In c-commerce, business partners collaborate electronically.

- ***Business-to-consumers (B2C):*** The sellers are organizations, and the buyers are individuals.
- ***Consumers-to-businesses (C2B):*** Consumers make known a particular need for a product or service, and suppliers compete to provide it.
- ***Consumer-to-consumer (C2C):*** Individuals sell products or services to other individuals.
- ***Intra business (intra organizational) commerce:*** An organization uses EC internally to improve its operations. A special case is known as B2E (business to its employees)
- ***Government-to-citizens (G2C):*** A government provides services to its citizens via EC technologies.
- ***Mobile commerce (m-commerce):*** When e-commerce is done in a wireless environment.

E-commerce

3.1 Introduction about E-commerce

Commerce refers to all the activities the purchase and sales of goods or services. We can distinguish two types of commerce: physical commerce and e-commerce. In a physical or traditional commerce system, transactions take place via contact between humans usually in a physical outlet such as a store. For example, if you want to buy a book, you will go to a physical bookstore and buy the physical book from a salesman. In a pure e-commerce system, transactions take place via electronic means In this case, you will access a cyber bookstore and download a digital book from a server computer. These two cases represent the extremes: the traditional commerce system on one side and the pure e-commerce system on the other.

3.2 History

Originally, electronic commerce was identified as the facilitation of commercial transactions electronically, using technology such as Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT).

These were both introduced in the late 1970s, allowing businesses to send commercial documents like purchase orders or invoices electronically. The growth and acceptance of credit cards, automated teller machines (ATM) and telephone banking in the 1980s were also forms of electronic commerce. From the 1990s

onwards, electronic commerce would additionally include enterprise resource planning systems (ERP), data mining and data warehousing. In 1990, Tim Berners-Lee invented the World Wide Web browser and transformed an academic telecommunication network into a worldwide everyman everyday communication system called internet/www, Although the Internet became popular , it took about five years to introduce security protocols that allowing continual connection to the Internet. By the end of 2000, many European and American business companies offered their services through the World Wide Web.

3.3 Definition

Electronic commerce, refers to the buying and selling of products or services over electronic systems such as the Internet and other computer network However, the term may refer to more than just buying and selling products online. It also includes the entire online process of developing, marketing, selling, delivering, servicing and paying for products and services. The amount of trade conducted electronically has grown extraordinarily with widespread Internet usage. The use of commerce is conducted in this way; spurring and drawing on innovations in electronic funds transfer supply chain management Internet marketing online transaction processing electronic data interchange (EDI), inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web at least at one point in the transaction's life-cycle,

although it may encompass a wider range of technologies such as e-mail, mobile devices and telephones as well.

3.4 The differences between e-commerce and e-business

The matrix in Figure 1 shows the different types of e-commerce from the perspective of the buyer and seller relationship. This is often used to categorize e-commerce applications. According to this relationship, e-commerce applications can be divided into the following four categories:

	Business (organization)	Consumer (individual)
Business (organization)	B2B (e.g. TPN)	B2C (e.g. Amazon)
Consumer (individual)	C2B (e.g. Priceline)	C2C (e.g. eBay)

Figure 1: The Difference Type of e-commerce

A) Business-to-consumer (B2C): In this case, the seller is a business organization whereas the buyer is a consumer. This emulates the situation of physical retailing and so it is commonly called electronic retailing. Typically, electronic stores are set up on the internet to sell goods to the consumers. For example, our VBS(Virtual Book Store) sells books to the consumers through

the internet. Note here that the business drives the specification of the product and the customer chooses whether or not to buy a prefabricated product. An example of this in traditional commerce is purchasing suits "off the rack."

B) Business-to-business (B2B): In this case, both the buyer and the seller are business organizations; there are three types of systems, namely, buyer-oriented system, seller-oriented system, and virtual marketplace. In many situations, it is related to supply chain management. For example, the (VBS) needs to order books from various publishers. The ordering process can be accomplished by using electronic data interchange.

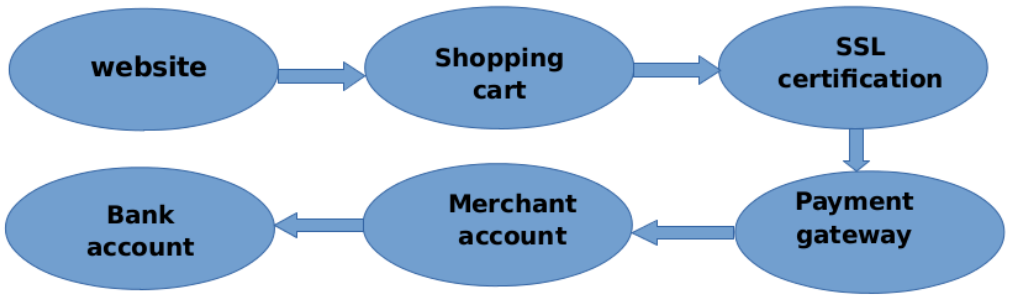
C) Consumer-to-consumer (C2C): This refers to situations where both the seller and the buyer are consumers. With the advent of e-commerce, on-line auctions provide an effective means for supporting C2C e-commerce. For example, our VBS can provide on-line auction services for customers to sell used books to other customers through the VBS web site. In addition, a virtual community can be formed.

D) Consumer-to-business (C2B): As explained later, this is a new form of commerce in which a consumer specifies the requirements to a business, which provides a product that meets these requirements. These requirements could be as simple as an acceptable price, or could involve considerable customization of an existing standard product, or creation of a new product. An

example of this in the traditional commerce setting is a “made to measure” tailor. The key distinction is related to who is driving the specification of the product being purchased. Unlike B2C, there is a strong element of customization.

3.5 Structure & Architecture of E-commerce

E-commerce may refer to more than just buying and selling products online. It also includes the entire online process of developing, marketing, selling, delivering, servicing and paying for products and services. The amount of trade conducted electronically has grown. Any e -commerce structure need the following steps:



e -commerce structure steps

1) To make e-commerce business first you need to build website and find product that you want to purchase.

2) If the customer like the product then he click on the purchase button and link him to enter the billing information.

3) Information encrypted using SSL certification.

4) Sent the payment gateway where the card is processed

5) After the purchase approved and funds are posited in the merchant account which is special account for business owners.

6) Finely transferred to the business bank account.

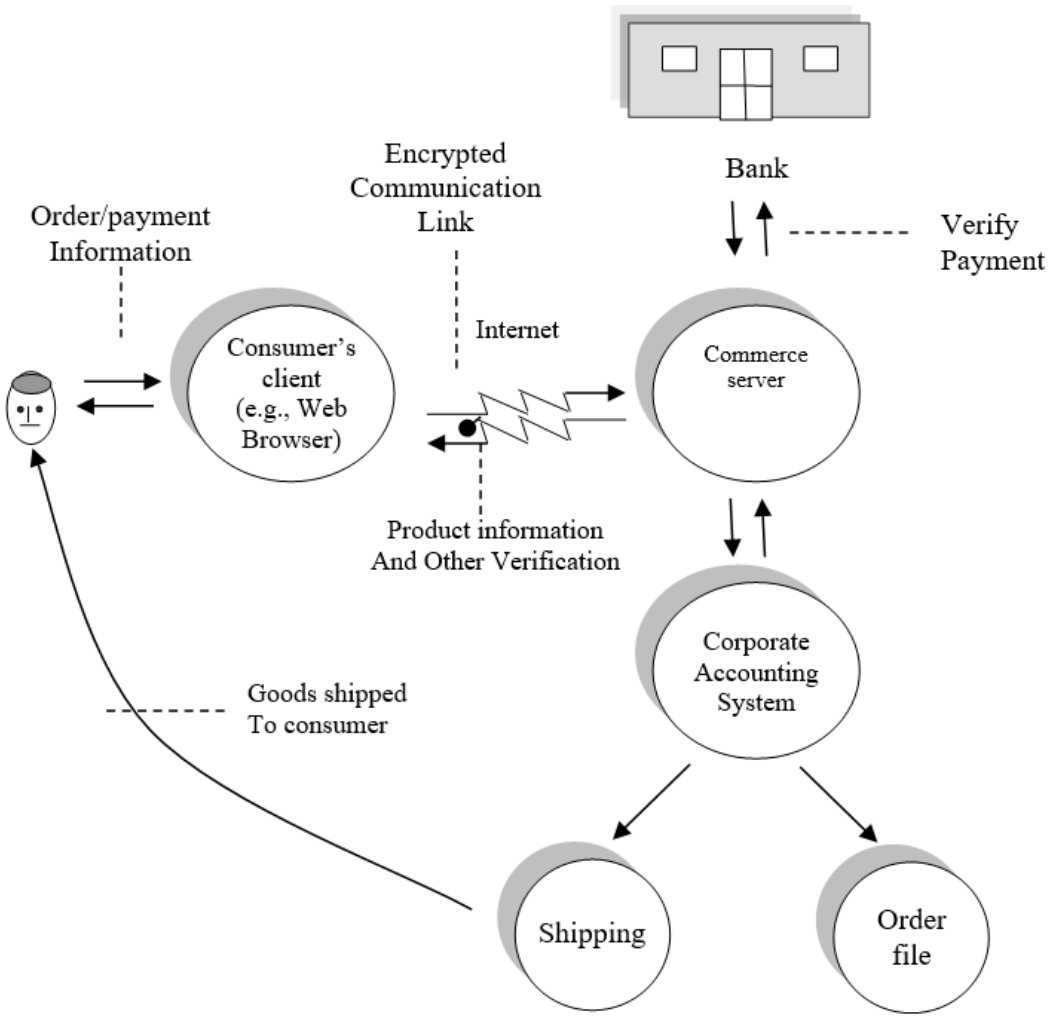


Figure (2): E-Commerce Steps

3.6 Electronic Data Interchange

Electronic data interchange (EDI) one solution from many for E-commerce grown.

• Electronic Data Interchange (EDI) – interposes communication of business information in standardized electronic form, Reduction in transaction costs and Foster closer relationships between trading partners. Prior to EDI, business depended on postal and phone systems that restricted communication to those few hours of the workday that overlap between time zones.

EDI & Electronic Commerce

Electronic commerce includes EDI & much more, EDI make limitation in relationships by improving electronic interchange of information between trading partners, suppliers, & customers.

Benefits of EDI

• Cost & time savings, Speed, Accuracy, Security, System Integration.

• Reduced paper-based systems, i.e. record maintenance, space, paper, postage costs.

• Improved problem resolution & customer service.

• Expanded customer/supplier base or suppliers with no EDI program lose business.

• Fast, inexpensive & safe method

E-learning

4.1 Introduction about E-Learning

Learning refers to concerted activity that increases the capacity and willingness of individuals, groups, organizations and communities to acquire and productively apply new knowledge and skills, to grow and mature and to adapt successfully to changes and challenges. Such learning empowers individuals and organizations to make wise choices, solve problems and break new ground. In particular, it is sustainable, it is a lifelong, renewable process for people and for the institutions that serves people.

The rapid advances in communication and information technology not only accelerate the trend of human's life but also change people's way of learning. People change careers and relocate several times throughout their live. The concept of traditional education does not fit well with the new world of lifelong learning, in which the roles of instructor, students, and curriculum are changing.

4.2 E-learning definition

E-learning is just one of the many terms which are used in literature and business about e-learning. It is defined by many people, in many ways, and as it is most important to gain a clear understanding of what e-learning is, we present **some** definitions to gain some understanding:

-Allen, 2003:"E-Learning is a structured, purposeful use of electronic system or computer in support of the learning process".

-ASTD, 2001:"E-Learning covers a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes delivering content via the Internet, intranet /extranet (LAN/WAN), audio and videotape, satellite broadcast, interactive TV, and CD-ROM."

4.3 **E-learning concepts and tools**

The move to conduct teaching and learning over the Internet is rapidly gaining momentum along with the advance of computing technology and the deep researches into the pedagogical methodology on the Internet. Web based learning has become an important part of the routine landscape of education and training.

Web-based learning and real-time delivery of instruction bring to our education society new possibilities for future education. One interesting issue in distance learning is that interactions can be made between the instructor (could be a computer) and students, in many different locations. With the advanced communication technology and intelligent agents (i.e., computer programs), students are able to learn in an interactive manner through web-based distance learning systems.

A virtual classroom is the name for a classroom found in e-learning resources. Not all existing e-learning resources are at the same time virtual classrooms.

Virtual classrooms are e-learning resources enriched with features, which try to offer the same communication and learning methods found in traditional classrooms but adapted to e-learning .

Web based learning management systems (LMS) or course management systems (CMS) are important tools for e-learning management system as the functionalities like educational resource content management, discussion forums, chat, quiz assignment management, etc. are effective to promote interactions between teachers and learners. Moreover, LMS/CMS are often equipped with auto grading of multi-choice type or short answer type quizzes.

It enables learners' repeated self-checking of their skills and compensation of lacking of interaction during teachers' non office hours.

4.4 **Communication technologies used in e-learning**

Communication technologies are generally categorized as asynchronous or synchronous.

Comparison between Synchronous vs. Asynchronous learning

Synchronous	Asynchronous
Students interact with a live trainer/facilitator and other students	Students learn independently and potentially in isolation
Learning is scheduled and has a fixed start time and end time	Learning is available anytime and potentially anywhere
Learning is linear	Learning may be linear or freeform

4.5 Virtual Classrooms

A virtual classroom is an application of web conferencing technology, which allows computer users to communicate in real-time over the Internet or the intranet. Web conferencing is typically more than a simple text-based chat room; it allows groups of users to communicate in voice or video and to share all kinds of resources, such as slides, documents, electronic whiteboards (to which all users can contribute simultaneously), shared applications or even whole desktops, synchronized web surfing and much more. Virtual classrooms extend this technology to add sorts of features that make real-time, virtual training a practical option, including polls, questions, surveys, break-out sessions and record-keeping. A virtual classroom session is like a face-to-face session interactive. It's important to engage your learners using the skills you'd use face-to-face, encouraging exploration and providing plenty of opportunities for practice. This is even more important in the virtual classroom, because you can lose your audience and not even know that they've gone. Trainers need to be creative to use the facilities provided by the software in ensuring maximum participation

E-banking

5.1 History of Internet Banking

The concept of Internet banking has been simultaneously evolving with the development of the World Wide Web. Programmers working on banking data bases came up with ideas for online banking transactions, sometime during the 1980's. The creative processes of development of these services were probably sparked off after many companies started the concept of online shopping. The online shopping promoted the use of credit cards through Internet. Many banking organizations had already started creating data ware housing facilities to ease their working staffs. The development of these databases were widely used during the Development of ATM's

Initially in the 80's when computers and Internet were not so well developed, 'home banking' basically made use of fax machines and telephones to facilitate their customers. The wide spread of Internet and programming facilities created further opportunities for development of home banking.

In 1983, the Nottingham Building Society launched the first Internet banking service in United Kingdom. This service formed the basis for most of the Internet banking facilities that followed.

The first online banking service in United States was introduced, in October 1994. The service was developed by Stanford Federal Credit Union, which is a financial institution. The online banking services are becoming more and more prevalent due to the well developed systems. Though there are pros and cons of electronic cash technology, it has become a revolution that is enhancing the banking sector .

5.2 Definition of E-Banking

Electronic Banking in simple terms means, it does not involve any physical exchange of money, but it’s all done electronically, from one account to another, using the Internet. Internet banking is just like normal banking, with one big exception. You don't have to go to the bank for transactions. Instead, you can access your account any time and from any part of the world, and do so when you have the time, and not when the bank is open.

5.3 Various Forms of E-Banking

5.3.1 Internet Banking

Internet banks are much cheaper to operate than traditional banks, so Internet banks can pass the savings on to their customers. Once they have secured customers business.

Internet banks offer customers other services; they will be able to complete their checking, savings, credit cards, mortgages, investments, bill payments and much more from the comfort of their own living room.

Internet banking system and method in which a personal computer is connected by a network service provider directly to a host computer system of a bank such that customer service requests can be processed automatically without need for intervention by customer service representatives. The system is capable of distinguishing between those customer service requests which are capable of automated fulfillment and those requests which require handling by a customer service representative. The method of the invention includes the steps of inputting a customer banking request from among a menu of banking requests at a remote personnel computer; transmitting the banking requests to a host computer over a network; receiving the request at the host computer; identifying the type of customer banking request received; automatic logging of the service request, comparing the received request to a stored table of request types, each of the request types having an attribute to indicate whether the request type is capable of being fulfilled by a customer service representative or by an automated system; and, depending upon the attribute, directing the request either to a queue for handling by a customer service representative or to a queue for processing by an automated system .

5.3.2 Automated Teller Machine (ATM):

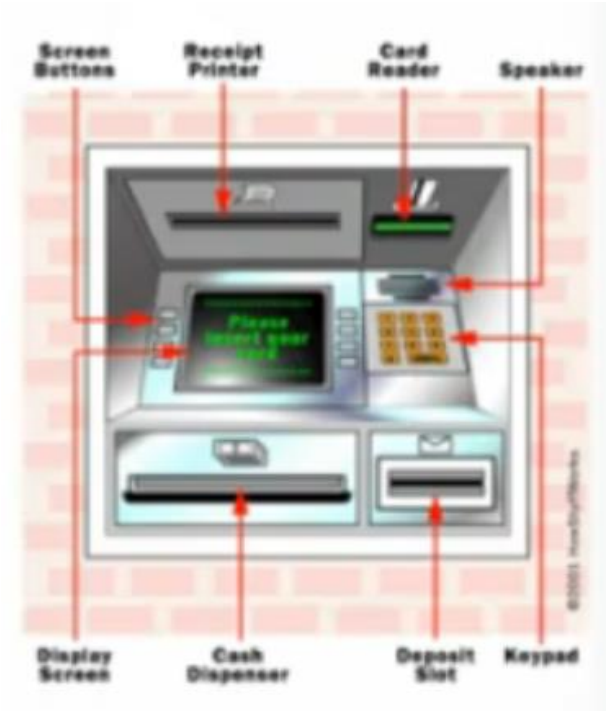
In order to access various accounts, ATM computers are connected to complex interbank networks, which allow customers from many different banks to access their accounts through the machine. In order to provide access to the customer, ATMs rely on authorization from the financial institutions. To cover the costs of operation and the fees that involve belonging and accessing the networks, most independent ATMs charge a fee for each transaction.

An automated teller machine or automatic teller machine (ATM) is an electronic computerized telecommunications device that allows a financial institution's customers to directly use a secure method of communication to access their bank accounts, order or make cash withdrawals (or cash advances using a credit card) and check their account balances without the need for a human bank teller. Many ATMs also allow people to deposit cash or cheques, transfer money between their bank accounts, top up their mobile phones' pre-paid accounts or even buy postage stamps. On most modern ATMs, the customer identifies him or herself by inserting a plastic card with a magnetic stripe or a plastic smartcard with a chip that contains his or her account number.

The customer then verifies their identity by entering a pass code, often referred to as a **PIN** (**P**ersonal **I**dentification **N**umber) of four or more digits. Upon successful entry of the PIN, the customer may perform a transaction. If the number is entered incorrectly several times in a row (usually three attempts per card insertion), some ATMs will attempt retain the card as a security precaution to prevent an unauthorized user from discovering the PIN by guesswork .

Structure of ATM

1. Card reader
2. Keypad
3. Speaker
4. Display Screen
5. Receipt printer
6. Cash dispenser



5.3.3 Tele Banking

By dialing the given Tele banking number through a landline or a mobile from anywhere, the customer can access his account and by following the user-friendly menu, entire banking can be done through Interactive Voice Response (IVR) system. (IVR) is a software application that accepts a combination of voice telephone input and touch-tone keypad selection and provides appropriate responses in the form of voice .With sufficient numbers of hunting lines made available, customer call will hardly fail .

Using Tele Bank is easy:

- Just dial the number with a touch tone telephone; you will be connected to the main menu.
- Anyone can obtain current rates and general information on our products and services.
- Upon entering the personal account section of the system, you will be asked to enter your confidential personal identification number, or "PIN #"
- Then you can obtain access to information on your accounts and perform various tasks like transfers and statement faxes.

5.3.4 Smart Card

Smart cards hold information about the card holder. The unique information may be credit card balances, access credentials, insurance information and subscription verification. It is possible for all of the information on the cards in customer's wallet to be placed in one card.

To make this application practical, smart card providers must use the same type of chip architecture. If the industries are different and they choose different types of cards, the card cannot be shared between the two industries for the same card holder.

A smart card usually contains an embedded 8-bit microprocessor (a kind of computer chip). The microprocessor on the smart card is there for security. The host computer and card reader actually "talk" to the microprocessor. The microprocessor enforces

access to the data on the card. The chips in these cards are capable of many kinds of transactions.

5.3.5 Debit cards

Debit cards are also known as check cards. Debit cards look like credit cards or ATM (automated teller machine) cards, but operate like cash or a personal check. Debit cards are different from credit cards. While a credit card is a way to "pay later," a debit card is a way to "pay now." When you use a debit card, your money is quickly deducted from your checking or savings account.

Debit cards are accepted at many locations, including grocery stores, retail stores, gasoline stations, and restaurants. You can use your card anywhere merchants display your card's brand name or logo. They offer an alternative to carrying a checkbook or cash .

5.3.6 E-Cheque

An E-Cheque is the electronic version or representation of paper cheque.

The Information and Legal Framework on the E-Cheque is the same as that of the paper cheque's. It can now be used in place of paper cheques to do any and all remote transactions.

An E-cheque work the same way a cheque does, the cheque writer "writes" the e-Cheque using one of many types of electronic devices and "gives" the e-Cheque to the payee electronically. The payee "deposits" the Electronic Cheque receives credit, and the payee's bank "clears" the e-Cheque to the paying bank. The paying bank validates the e-Cheque and then "charges" the check writer's account for the check .

5.4 **Architecture of Online Banking**.

The Online Banking Application is based on 3-tiered model. The Enterprise architecture for Online Banking Application is shown below.

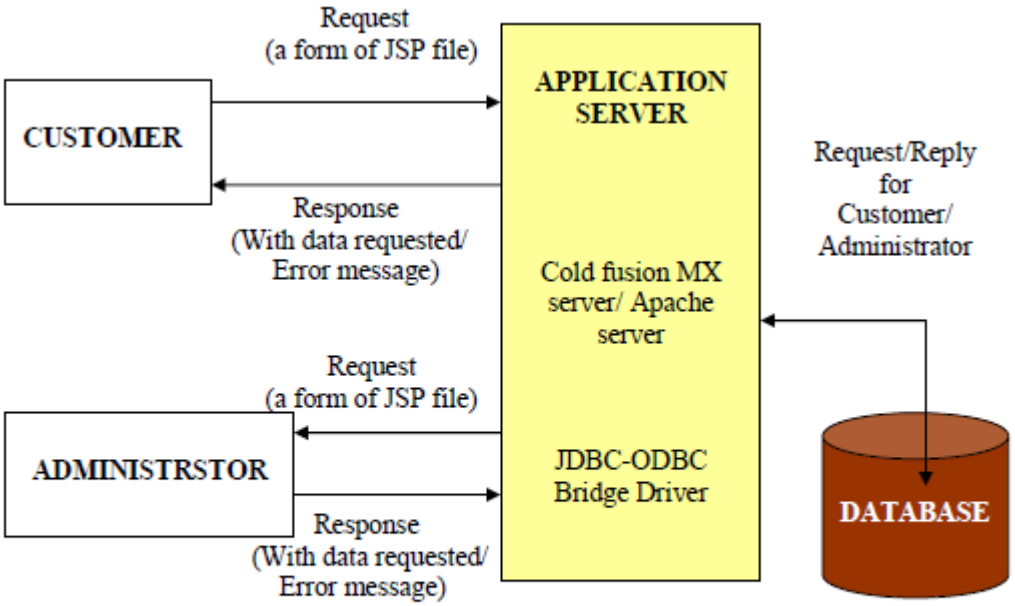


Figure 1: Architecture of Online Banking Application

The 3-tiered architecture shown above has the following major components:

1. **Client:** There will be two clients for the application. One will be for bank customers. The other will be for administration purposes.

2. **Application Server:** It takes care of the server script, takes care of JDBC-ODBC , and checks for the ODBC connectivity for mapping to the database in order to fulfill client and administrator's request.

3. **Database:** Database Servers will stores customer's and bank data.

Simply stated, the application works based on a request/response protocol. A client Initiates a request to the server. The server responds by executing the business logic hosted inside the JSP program and if required, communicates with the Database Server to fulfill a client's request.

Dataflow diagrams are depictured below to give the clear understanding of Online Banking Application.

E-Government

6.1 E-government introduction

(short for electronic government) is the use of electronic communications devices, computers and the Internet to provide public services to citizens and other persons in a country or region.

Delivery models and activities of e-government

- **Government-to-citizen or government-to-consumer (G2C)** approaches such as setting up websites where citizens can download forms, government information, etc.
- **Government-to-business (G2B)** is the online non-commercial interaction between local and central government and the commercial business sector with the purpose of providing businesses information.

- **Government-to-government (G2G)** The purpose to include e-governance to government is to means more efficient in various aspects. Whether it means to reduce cost by reducing paper clutter, staffing cost, or communicating with private citizens or public government. E-government brings many advantages into play such as facilitating information delivery, application process/renewal between both business and private citizen, and participation with constituency.

- **Government-to-employees (G2E)** Is one of four main primary interactions in the delivery model of E-Governance. It is the relationship between online tools, sources, and articles that help employees maintain communication with the government and their own companies

E-Governance relationship with Employees allows the following:-

1. new learning technology in one simple place as the computer
2. Documents can now be stored and shared with other colleagues online.
3. E-governance makes it possible for employees to become paperless.
4. makes it easy for employees to send important documents back and forth to colleagues all over the world.

6.2 E-Government Strategy

An e-government strategy is a plan for e-government systems and their supporting infrastructure which maximizes the ability of management to achieve organisational objectives‘ (Heeks, 2006). This plan is described in a top-level document that addresses strategic directions, goals, components, principles and implementation guidelines. The strategy should be understandable without any ambiguities. Such a strategy is considered a baseline and thus will be referred to quite often. Different versions of e-government strategies of (20) countries, in addition to that of the European Union, have

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in the National Action Plan 2016-2018 of one of country such as:

1. Increased Citizen Engagement, to improve policies and services.
2. Increased Transparency, to better understand government activities and decisions.
3. Open Data, for transparency and innovation.
4. Anti-Corruption and Strengthened Governance and Accountability, to ensure integrity in public life.

E-conference

7.1 Introduction

Meetings and conferences play a critical role in the dissemination of information into the larger community, regardless of the discipline. They provide arenas for the immediate presentation of new results and cutting edge research with the opportunity of questions and answers to flesh out the materials. Personal contacts are made and enhanced, leading to collaborations and research opportunities. At broad meetings, such as those of the American Chemical Society or the American Physical Society), participants can quickly pick up on new activities in a large range of sub disciplines.

7.2 Definition

E-Conferencing is a network-based multimedia conferencing service that allows users to schedule and hold meetings through several media:

- Audio conferences (i.e. teleconferences)
- Web-based conferences (i.e. sharing computer screens)
- Video conferences (via webcam or video terminals).

Videoconferencing is a method of communicating between two or more locations where sound, vision and data signals are conveyed electronically to enable simultaneous interactive communication.

7.3 Levels of e-conference

7.3 .1 Preparing for an e-conference Choosing the theme

- **Choosing a digital 'venue'**

E-conferencing works best where the subject matter achieves a balance between being focused on a specific topic, and yet being sufficiently open to stimulate discussion.

An e-conference needs an email discussion list to act as the digital equivalent to a conference venue. The options are to set up a new list, or to make use of an existing list . Various academic groups and commercial organizations provide the tools and infrastructure to set up a list. These can be utilized quickly and usually at a low cost or free. To use an existing list, contact the list owner (there will usually be an email address given on the list 'homepage' for this) to see if they would be willing to act as hosts. Things to check are:

Some discussion lists systems require access to a web site to make full use of their features. This may be an issue if some of your target audience only have access to email accounts and not to the World Wide Web.

- **Choosing a time**

One of the advantages of an e-conference is that it is relatively easy to choose a good time to start – organizers are not restricted by, for example, the availability of a suitable venue. Make use of this flexibility. Choose a 'launch date' for the conference that avoids major holidays, or other times when likely participants will not be available.

- **Contacting 'speakers'**

'Speakers' in an e-conference are those who have agreed to post longer messages on particular topics. Identify three or four participants who have relevant experience to share with the e-conference participants. Their role

will be to stimulate debate, and to present details of a current project or policy.

- **Participants**

  This information sheet assumes that participants will generally be fellow professionals, or independent sector colleagues with a keen interest.

- **Promoting the e-conference**

  A successful e-conference needs to be promoted in advance. The most obvious and easy way (and probably most successful) is to post advertisement messages to other email discussion lists with similar subject matter.

7.3.2 During the e-conference .

7.3.3 After the e-conference

7.4 Advantages and disadvantages of electronic meeting systems

Advantages of electronic meeting systems

- any-place (online) capability which avoids travel time and cost
- increased participant availability (any place, any time).
- increased interactivity and participation by parallelization
- increased openness and less personal prejudice through anonymity
- more sophisticated analysis by voting and analysis in real time
- less effort in preparation by use of meeting templates
- repeatable meeting and workshop process through meeting templates
- automatic, comprehensive, neutral documentation

Disadvantages of electronic meeting systems

- the formerly high infrastructure requirements have been reduced to Internet access and a web browser
- the formerly high demands on facilitators have been greatly reduced in systems that are designed to support everyday use by the non-expert user
- the traditional cultural barriers to the use of technology in meetings have been overcome through the general familiarization of users with telephone and web conferences.