Internet and E-commerce

BBA 510113: Computer and Information Technology

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Internet

Internet is a system that interconnects the different computer systems across the world. It uses the Internet protocol suite to link devices located in different corners of the world.

The Internet system carries an extensive range of information resources and services including World Wide Web (WWW), telephony, electronic mail, etc. It uses standard internet protocols, such as TCP/IP and HTTP, etc.

An internal web comprises of all Hypertext Transfer Protocol (HTTP) nodes on a private network; for example, an organization's LAN or WAN.

Features of Internet

Let us now discuss the features of Internet. The features are described below−

- **Accessibility**

An Internet is a global service and accessible to all. Today, people located in a remote part of an island or interior of Africa can also use Internet.

- **Easy to Use**

The software, which is used to access the Internet (web browser), is designed very simple; therefore, it can be easily learned and used. It is easy to develop.

Features of Internet

- **Interaction with Other Media**

   Internet service has a high degree of interaction with other media. For example, News and other magazine, publishing houses have extended their business with the help of Internet services.

- **Low Cost**

   The development and maintenance cost of Internet service are comparatively low.

- **Extension of Existing IT Technology**

   This facilitates the sharing of IT technology by multiple users in organizations and even facilitates other trading partners to use.

Features of Internet

- **Flexibility of Communication**

  Communication through Internet is flexible enough. It facilitates communication through text, voice, and video too. These services can be availed at both organizational and individual levels.

- **Security**

  Last but not the least, Internet facility has to a certain extent helped the security system both at the individual and national level with components such as CCTV camera, etc.

Internet Software

Internet Software comprises of all the tools needed for networking through computer. Following are a few important components of the Internet Software −

- Transmission Control Protocol/ Internet Protocol (TCP/IP)

- Dialer Software

- Interment Browser

Internet Applications

Internet applications are server-based applications. Following are a few Internet Applications –

- World Wide Web (WWW)

- Electronic mail (e-mail)

- File Transfer Protocol (FTP)

- Telnet (i.e., log-in to the computer located remotely)

- Internet Relay Chat (IRC) (Real time video chatting)

Extranet

An extranet is a sort of personalized service, which is controlled and regulated by private network.

This personalized and controlled technology provides access only to partners, vendors, and suppliers; sometimes, not essentially, but also to some specific customers.

An extranet is a private network organization, which is actually the part of respective company's intranet and its services are extended to users outside the company. Sometimes, it is also considered as a specialized technique to practice business with other companies and selling products to the customers.
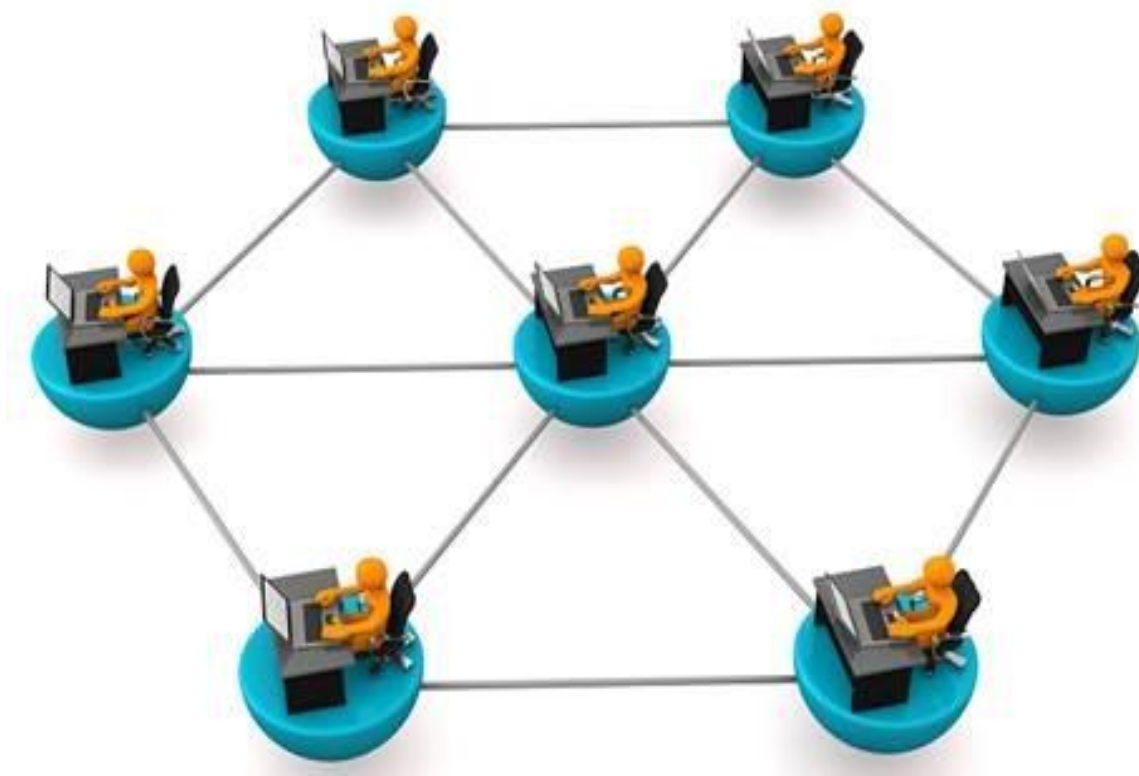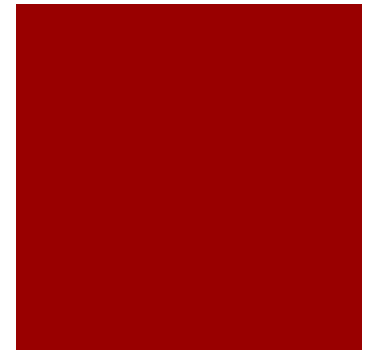
Extranet

In order to do business with other business partners, extranet technology facilitates the intranet from one location to other and also provides security to data flow.

An extranet service requires firewall server management in order to provide security and privacy.

Extranet

Features of Extranet Services

Following are the significant features of extranet services −

- Extranet is an extended Internet service to the private business network.

- The services extend outside the corporate firewall.

- Sometimes, it can be referred to an Intranet, as it can be (partially) accessible to some outsiders (with permission).

- The technique of extranet links two (or more) business organizations who share common business goals.

Application of Extranet

Extranet can be applied for the following services –

- It facilitates collaborative business between two (or more) companies

- By using this technology, a joint training program (with other company) is conducted

- By using electronic data interchange, large volumes of data are shared swiftly

- It is used to share product catalogs especially with wholesalers

- Extranet service is also used in providing customer support

- It is used to share business news with partner companies

Major Fields Using Extranet

Following are some of the major fields that are using Extranet service on a large scale −

- Corporate houses

- Government offices

- Education centers

Intranet is more localized, as only internal employees have the accessibility. In contrast, Extranet covers a wider area, as outsiders (such as partner, vendor, or even customer) have the authorized accessibility.

Email and E-Mail Address

Email

Email is a service which allows us to send the message in electronic mode over the internet. It offers an efficient, inexpensive and real time mean of distributing information among people.

E-Mail Address

Each user of email is assigned a unique name for his email account. This name is known as E-mail address. Different users can send and receive messages according to the e-mail address.

Email and E-Mail Address

E-mail is generally of the form **username@domainname**. For example, **webmaster@tutorialspoint.com** is an e-mail address where webmaster is username and tutorialspoint.com is domain name.

- The username and the domain name are separated by **@** (at) symbol.

- E-mail addresses are not case sensitive.

- Spaces are not allowed in e-mail address.

Email System

E-mail system comprises of the following three components:

- Mailer

- Mail Server

- Mailbox

Mailer

It is also called mail program, mail application or mail client. It allows us to manage, read and compose e-mail.

Email System

- **Mail Server**

  The function of mail server is to receive, store and deliver the email. It is must for mail servers to be Running all the time because if it crashes or is down, email can be lost.

- **Mailboxes**

  Mailbox is generally a folder that contains emails and information about them.

How Email works?

Email working follows the client server approach. In this client is the mailer i.e. the mail application or mail program and server is a device that manages emails.

Following example will take you through the basic steps involved in sending and receiving emails and will give you a better understanding of working of email system:

- Suppose person A wants to send an email message to person B.

- Person A composes the messages using a mailer program i.e. mail client and then select Send option.

How Email works?

- The message is routed to Simple Mail Transfer Protocol to person B's mail server.

- The mail server stores the email message on disk in an area designated for person B.

The disk space area on mail server is called mail spool.

- Now, suppose person B is running a POP client and knows how to communicate with B's mail server.

- It will periodically poll the POP server to check if any new email has arrived for B.As in this case, person B has sent an email for person B, so email is forwarded over the network to B's PC. This is message is now stored on person B's PC.
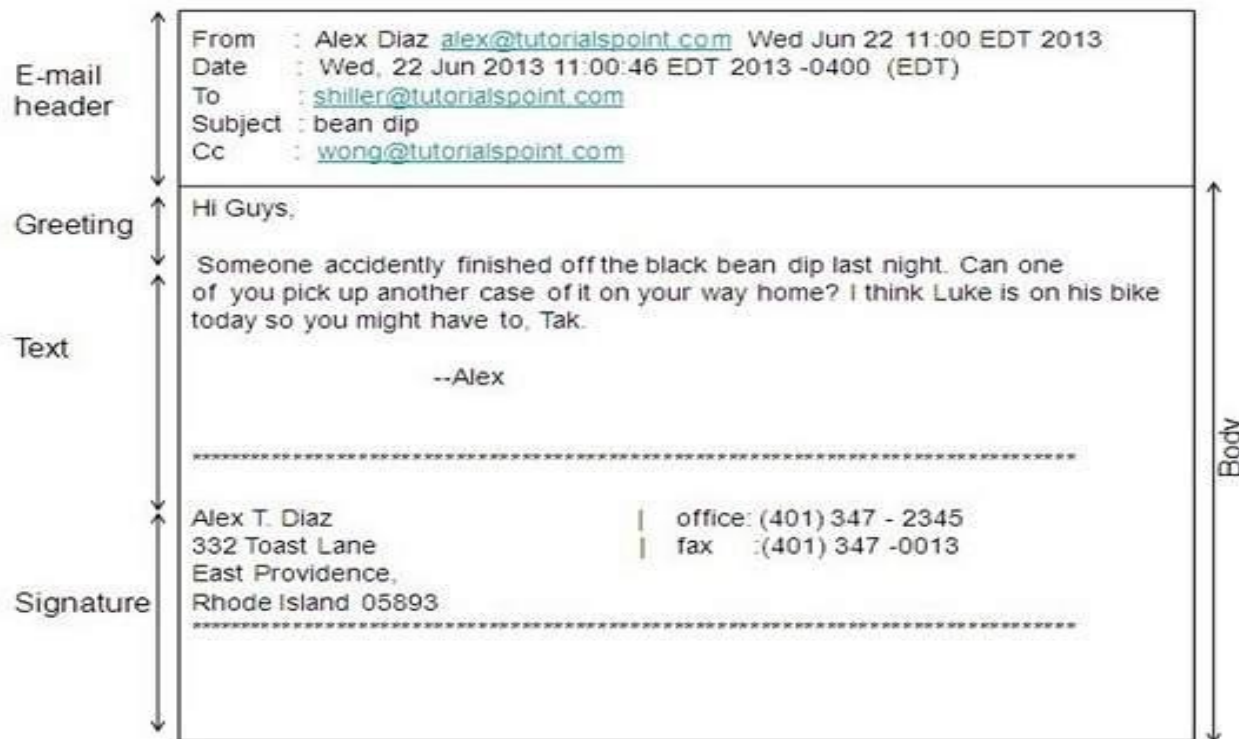
How Email works?

The following diagram gives pictorial representation of the steps discussed above:
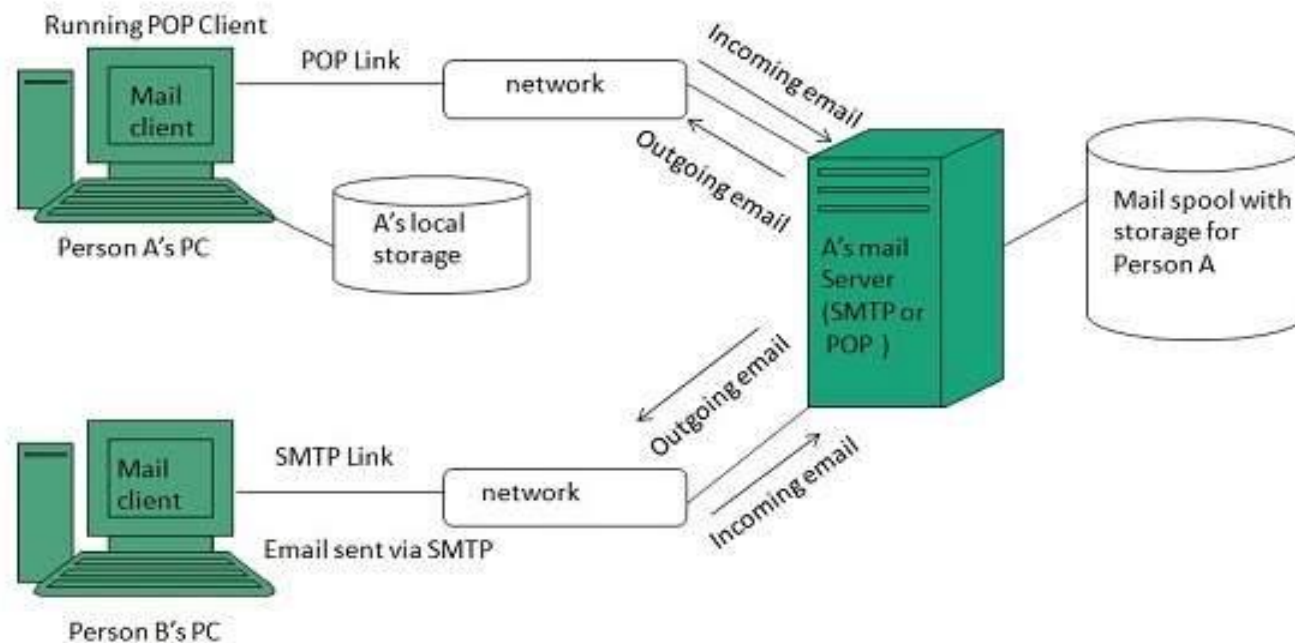
Email Messages

E-mail message comprises of different components: E-mail Header, Greeting, Text, and Signature. These components are described in the following diagram:

Email Messages

E-mail Header

The first five lines of an E-mail message is called E-mail header. The header part comprises of following fields:

- From

- Date

- To

- Subject

- CC

- BCC

Email Messages

- **From**

  The From field indicates the sender's address i.e. who sent the e-mail.

- **Date**

  The Date field indicates the date when the e-mail was sent.

- **To**

  The To field indicates the recipient's address i.e. to whom the e-mail is sent.

- **Subject**

  The Subject field indicates the purpose of e-mail. It should be precise and to the point.

- **CC**

  CC stands for Carbon copy. It includes those recipient addresses whom we want to keep informed but not exactly the intended recipient.

E-mail Messages

- **BCC**

  BCC stands for Black Carbon Copy. It is used when we do not want one or more of the recipients to know that someone else was copied on the message.

Greeting

  Greeting is the opening of the actual message. Eg. Hi Sir or Hi Guys etc.

Text

  It represents the actual content of the message.

Signature

  This is the final part of an e-mail message. It includes Name of Sender, Address, and Contact Number.

Infrastructure Requirement for E-mail

Email infrastructure is a system built to fuel the delivery of all newsletters or transactional emails you send out. It typically consists of the following components: IP addresses, mail agents, feedback loops, and email reputation management tools.

- **IP address**

IP addresses are strings of numbers that the domain system name (DNS) attaches to domains. Thanks to these, we can use letters (google.com and such) instead of numbers (256.58.217.06) to visit websites.

Infrastructure Requirement for E-mail

There are two types of IP addresses you can attach your domain to: a dedicated and a shared one.

- A dedicated IP is the one that's assigned only to your website's domain. Typically, you will need to pay a small fee to use such an address. In return, you'll get security and freedom.

- A shared IP is an address a few domains use simultaneously.

www.google.com   DNS Server   216.58.217.206

Whenever you type 'google.com,' DNS processes it to connect you to the IP

Infrastructure Requirement for E-mail

- **Mail agents**

  A mail agent is a tool that helps view, reply to, or transfer emails between a sender and a recipient. A typical email infrastructure uses several mail agents on different stages of an email's journey.

MUA SENDER → SMTP → MTA SMTP SERVER → SMTP → MDA POP/IMAP SERVER → POP/IMAP → MUA RECIPIENT
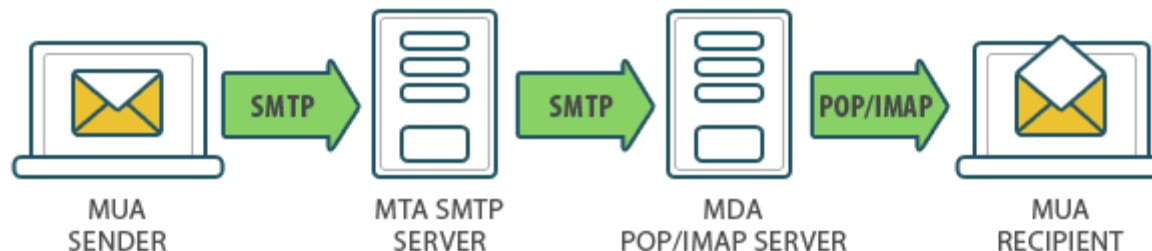
Infrastructure Requirement for E-mail

Mail user agent: a fancy term for email clients. Be it a software or desktop interface, MUA stores emails, allows users to read and reply to messages, delete them, or flag as spam.

Mail transfer agent: a tool that implements the server and the client side of the email transfer protocol. MTA empowers the exchange of emails between the device of a recipient and that of a sender.

Message delivery agent: this component of the architecture accepts an email from the transfer agent and stores it in a reader's environment (the inbox). Local delivery agent is another common name for MDA.

Infrastructure Requirement for E-mail

- **SMTP server**

  An SMTP server is an application that a chosen email client uses to exchange emails between users. Every hosting provider has a different SMTP address - the general look is: smtp.serveraddress.com

  For example, Gmail's SMTP is smtp.gmail.com, Outlook's is smtp.outlook.com, and so on.

  What is the purpose of an SMTP server? In a nutshell, it processes email data and passes it over to the recipient's inbox, validating a few conditions in the process:

1. If a sender's account is active

2. If the recipient's address is valid

3. Validating the email reputation. If it is low, SMTP servers will likely blacklist the email

Infrastructure Requirement for E-mail

- **SMTP server**
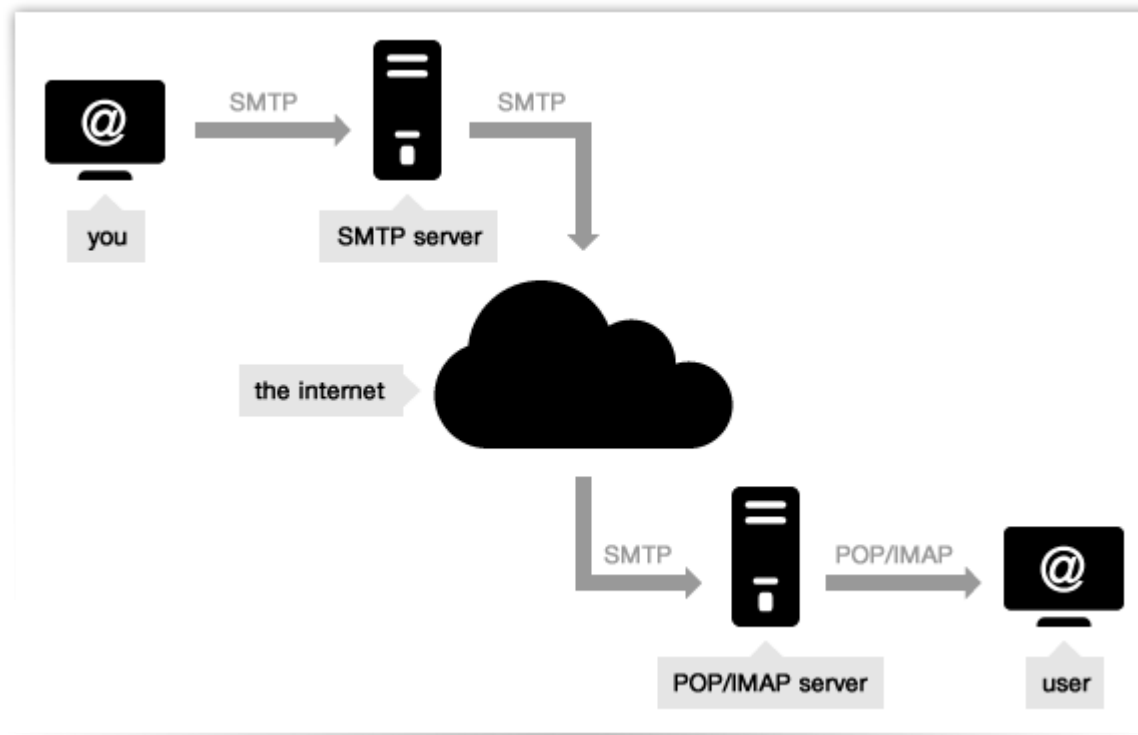
Infrastructure Requirement for E-mail

- **Feedback loop**

  A feedback loop (FBL) is one of the key processes empowered by email infrastructure. If a campaign sender sets up a feedback loop, he will be able to find out how the reader interacted with an email. This way, marketing teams can remove poorly engaged subscribers from the list to make sure the content is fully relevant to the audience.

To register for an FBL, a business owner needs to meet a set of conditions:

1. Own a domain or an IP or have admin privileges

2. Have an active @postmaster address attached to the domain

3. Good email reputation score (fair or high).

Infrastructure Requirement for E-mail

- **Feedback loop**
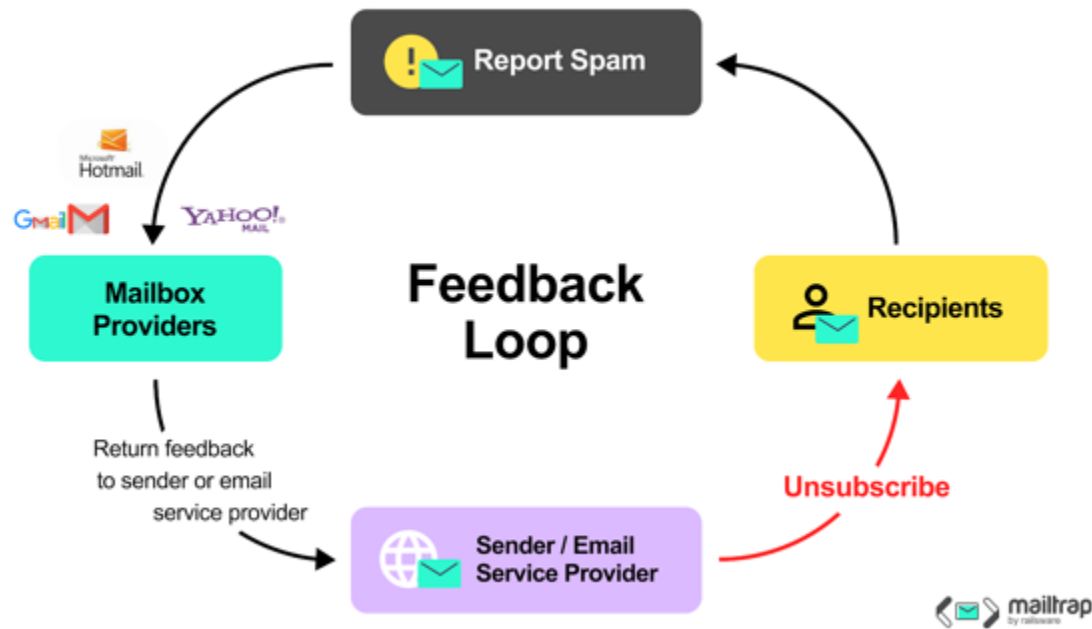
Mobile Computing

Mobile Computing is a technology that allows transmission of data, voice and video via a computer or any other wireless enabled device without having to be connected to a fixed physical link. The main concept involves −

- Mobile communication

- Mobile hardware

- Mobile software

Types of Mobile Computer

Mobile computing is not only limited to mobile phones, but there are various gadgets available in the market that are built on a platform to support mobile computing. They are usually classified in the following categories –

- Personal Digital Assistant (PDA)

- Smartphones

- Tablet PC and iPads

Types of Mobile Computer

Personal Digital Assistant (PDA)

The main purpose of this device is to act as an electronic organizer or day planner that is portable, easy to use and capable of sharing information with your computer systems.

PDA is an extension of the PC, not a replacement. These systems are capable of sharing information with a computer system through a process or service known as synchronization. Both devices will access each other to check for changes or updates in the individual devices. The use of infrared and Bluetooth connections enables these devices to always be synchronized.

Types of Mobile Computer

Smartphones

This kind of phone combines the features of a PDA with that of a mobile phone or camera phone. It has a superior edge over other kinds of mobile phones.

Smartphones have the capability to run multiple programs concurrently. These phones include high-resolution touch screens, web browsers that can access and properly display standard web pages rather than just mobile-optimized sites, and high-speed data access via Wi-Fi and high speed cellular broadband.

The most common mobile Operating Systems (OS) used by modern smartphones include Google's Android, Apple's iOS, Nokia's Symbian, RIM's BlackBerry OS, Samsung's Bada, Microsoft's Windows Phone, and embedded Linux distributions such as Maemo and MeeGo. Such operating systems can be installed on different phone models, and typically each device can receive multiple OS software updates over its lifetime.

Types of Mobile Computer

Tablet PC and iPads

This mobile device is larger than a mobile phone or a PDA and integrates into a touch screen and is operated using touch sensitive motions on the screen. They are often controlled by a pen or by the touch of a finger. They are usually in slate form and are light in weight. Examples would include ipads, Galaxy Tabs, Blackberry Playbooks etc.

E-Commerce

Electronic commerce or simply ecommerce is normally a process that involves facilitating the availability of products and services online. The users can search, choose, sell, buy from a wide range of options through Internet.

The major activities of ecommerce are as follows –

- Selling products and services online (through internet)

- Buying products and services online

- Paying and accepting payment online

- Transaction of businesses and other services online

Features of E-Commerce

Following are the important features of ecommerce −

- It efficiently increases the business capability.

- It substantially reduces the cost.

- It perceptively increases the delivery services.

- It unbreakable solution of quick business transactions and office automation.

- It potentially increases the intra-business functionality.

- It competently increases the business communication.

Types of E-Commerce

Following are the major types of e-commerce businesses –

Business-to-Business (B2B)

It is conducted between two business firms.

Business-to-Consumer (B2C)

It is conducted between the business firm and the consumer.

Consumer-to-Consumer (C2C)

Consumer-to-consumer business deals happen between two consumers; there are certain websites that facilitate a common platform to both the consumers - one who wants to buy and one who wants to sell.

Importance of E-Commerce

Let us now discuss the benefits of e-commerce −

- It facilitates free market.

- It is available 24×7.

- Its presence is global (there is no constrain of political boundary as such).

- Set up cost is substantially low.

- It provides user-friendly technology.

- It offers multiple opportunity parallel and simultaneously.

- It provides frugal facilities to promote and market businesses.

Importance of E-Commerce

- It has features to offer market research facility.

- It makes customer relations management easier.

- It facilitates the provision of 24×7 customer care services.

- It provides fund transfer facility domestically as well as internationally with simple steps.

THANKS…