01 Introduction to Internet

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INTRODUCTION

Invention of computer in 20th century is a small step while invention of Internet can be said a giant leap for the information technology. Computers are greatly used in a big range of fields; thanks to the contribution of Internet. It is simply defined as a network of networks, interconnecting thousands of networks and hundreds of millions of users across the world irrespective of geographical boundaries together for the sake of information , business, entertainment and a lot and lot more. This chapter has mainly been dedicated to the introduction of Internet.

WHAT IS INTERNET ACTUALLY ?

Internet usually called as the Net is an international computer network connecting other networks and computers from companies, universities, etc. The term is made up of two words inter means reciprocal or mutual and network. The Internet has got a broad spectrum and thus has got different definition for different classes of people. Some of the popular definitions are as follows-

- From a social point of view – The Internet is a device through which millions of people are communicating and sharing their idea and information. They communicate electronically on a one-to-one basis or in groups.
- From a practical, recreational or commercial point of view – The Internet is a vast collection of information that can be searched and retrieved electronically. This collection includes advice on all sorts of topics, data, government information, images, museum exhibitions, scholarly papers, software, and access to commercial activities. Tapping into these resources requires knowing which tools and services to use.
- From a technical point of view – The Internet is a network of thousands of computer networks. Together, the networks making up the Internet consist of over a million computer systems. These computers and networks communicate by exchanging data according to the same rules, even though the networks and computer systems individually use different technologies.

A simple definition of Internet is; "The Internet is a network of networks that connects people and computers worldwide."

GROWTH OF INTERNET

Internet has made real what in our childhood, we heard from our grandmas in their interesting fairy tales. The Internet has made distances shorter and the world smaller. In a few years especially since the inception of the world wide web, the Internet has emerged as a powerful platform that has changed the way we do business, and the way we communicate. The Internet has given a globalized dimension to the world. It is the Universal source of information today.

Internet is actually the most democratic of all the mass media. With a very low investment, anyone can have a web page in Internet. This way, almost any business can reach a very large market, directly, fast and economically, no matter the size or its location. With a very low investment almost anybody that can read and write can have access to the World Wide Web.

Today the Internet continues to grow day by day getting people closer and narrowing the boundaries. Table 1.1 shows the incredibly fast evolution of the Internet from 1995 till the publication of this book.

Month & Year	Users (In Millions)	Percentage of World Population
December, 1995	16	0.4%
December, 1996	36	0.9%
December, 1997	70	1.7%
December, 1998	147	3.6%
December, 1999	248	4.1%
December, 2000	451	7.4%
August, 2001	513	8.6%
September, 2002	587	9.4%
December, 2003	719	11.1%
December, 2004	817	12.7%
December, 2005	1,018	15.7%
December, 2006	1,093	16.6%

Table 1.1 : Growth of Internet

OWNER OF THE INTERNET

The Internet has no president nor has it a CEO. The constituent networks may have presidents and CEOs, but the Internet as a whole does not have a single controller. The ultimate authority on the Internet is the Internet Society, which is a voluntary membership organization whose purpose is to promote global information exchange through the Internet technology. It appoints a council of invited volunteers called the Internet Architecture Board (IAB). The IAB is responsible for the technical management and direction of the Internet. The Internet works because there are standards for computers and softwares applications to talk to each other. These standards allow computers from different vendors to communicate without problems. IAB meets regularly to formulate standards and allocate resources like addresses. When a standard is required, it considers the problem, adopts a standard and announces it via the Internet.

The IAB also keeps track of information that uniquely identifies every computer connected to the Internet. For example, each computer on the Internet has a unique 32-bit address. No two computers have the same address. The IAB ensures that certain rules are followed in naming each computer.

Internet users express their opinions through meetings of the Internet Engineering Task Force (IETF). The IETF is another voluntary organization that meets regularly to discuss operational and near-term technical problems of the Internet. When it considers a problem important enough to merit concern, the IETF sets up a working group for further investigation. Anyone can attend IETF meetings and become a part of the working group. Working groups recommend whether the IAB should declare a standard in order to circumvent problems.

INTERNET SERVICE PROVIDER

No one pays for the Internet as a whole, everyone pays for their part. Networks get together and decide how to connect themselves and fund these inter-connections. A college or company pays for their connection to some regional network, which in turn pays a national provider for its access.

A company that provides Internet access is known as Internet Service Provider (ISP). Like any company, an ISP charges for its services. In general, ISPs levy two types of fees:

- A charge for using the Internet
- A charge for a physical connection to the Internet

All customers of an ISP must pay the first type, a charge for Internet use. In most cases the ISP charges each customer a fixed rate per month, independent of the number of minutes a customer uses the service, the destinations with which the customer communicates, or the amount of data transferred. In return for the use charges, the ISP agrees to forward packets from the customer's computer to destinations on the Internet and from computers on the Internet back to the customer's computer.

Although use charges are billed at a fixed rate, ISPs do discriminate among classes of users. For example, an ISP charges more to a business enterprise than an individual, as Internet involved in business purposes transfers large volume of data daily while an individual uses a single computer and uses the Internet casually. In addition, the ISP may make the rate depend on the type of physical connection a customer has - a customer whose connection is capable of transferring larger volumes of data is charged more than a customer with a lower -capacity connection.

The second type, a charge for a connection, applies only to customers who have a separate, dedicated connection between their site and the ISP. BSNL, VSNL, Reliance, Sify, Bharti are a few prominent ISPs in India.

ANATOMY OF INTERNET

Internet is a system that includes many important facilities. Internet site or web sites are electronic documents written in a computer language called HTML, acronym for Hypertext Markup Language. Each web page has a unique address called a URL or Uniform Resource Locator that identifies where it's located on the network. A website has one or more related web pages, depending on how it's designed. The anotomy of contents available on Internet is such that you need not use sequential system for navigation but just click a link of choice and it will take you to the desired location. They are linked together through a system of hyperlinks.

The Internet anatomy physically consists of your personal computer, web browser software, a connection to an Internet Service Provider, computers called servers that host digital data, and routers and switches to direct the flow of information.

The Internet is also known as a client-server system. Your computer is the client; the remote computers that store electonic files are the servers figure 1.1 illustrates anatomy of the Net.

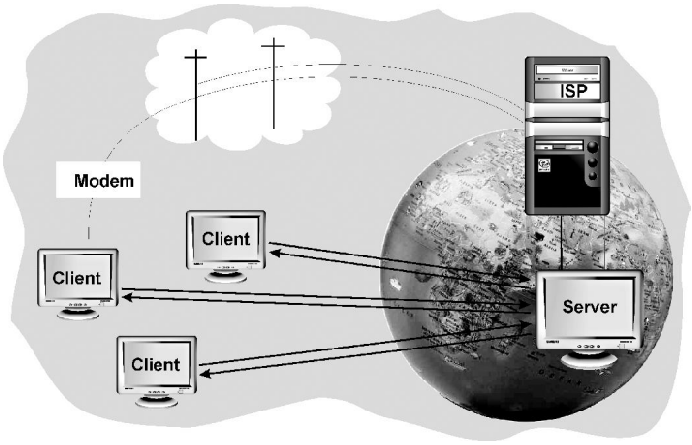

Figure 1.1 : Anatomy of Internet

ARPANET AND INTERNET HISTORY OF THE WORLD WIDE WEB

Internet, as we know, is a network of networks today, was firstly introduced in the United States as the government project in 1960s during the cold war. The government was tired of mailing magnetic tapes back and forth between computers. Therefore, they decided to devise a way to link computers together using cables.

The first objective the government had, while designing a network, was to ensure if the system was robust. They wanted a design whereby they could connect and disconnect computers without disturbing any of the other computers on the network. In order to manage this huge project, the government created an organization called Advanced Research Projects Agency or ARPA. Later, the network was called the ARPANET.

After a few years of random languages to move information over the Internet, a new language was created towards the late 60s that offered a unified manner of transferring information. This was TCP/IP (Transmission Control Protocol / Internet Protocol). This new network language became very popular during the 70s. With the turn of the decade, and the seeming ease of the cold war, this incredible network was losing its financial backing by the US government. At this time the government began to invite science organizations and universities to use the network for their purposes and to share the cost.

In 1969, the US Department of Defense created ARPANet (Advanced Research Projects Agency) for research and collaboration in computer science. ARPANet grew more than 50 nodes between Hawaii and Norway, and e-mail was their primary source of communication and productivity. The desire for connectivity quickly spread to other parts of the university community and gave rise to alternative networks which eventually gatewayed into ARPANet to create what we call the Internet today.

Which year was electronic mail introduced in? Who sent first e-mail and when?

In 1972, Electronic mail was introduced. Queen Elizabeth sent her first e-mail in 1976.

In 1973, Transmission Control Protocol/Internet Protocol (TCP/IP) was designed and in 1983 it became the standard for communicating between computers over the Internet. One of these protocols, FTP (FileTransfer Protocol), allows users to log onto a remote computer, list the files on that computer and download files from that computer.

In 1976, AT&T Bell Laboratories created a Unix utility called UUCP (Unix to Unix Copy Program), as an efficient, low cost way of passing files between computers via phone lines. In 1979, two students at Duke University and University of North California created a way for the people with UUCP connections to discuss their Unix problems by posting letters to a subject area called a "newsgroup." People posted and passed the newsgroups via the phone lines in an intricate network of connections called Usenet News (Unix Users Network). Since it used ordinary telephone connections, it was sometimes referred to as the "Poor Man's Arpanet."

Usenet grew as a grassroot connection between people and produced a culture of sharing information and support. Today there are thousands of newsgroups on topics that range from science fiction to making quilts. Usenet continues to produce collaborations between Unix programmers and developers of the highest quality in computer networking (Hauben 1993). In 1981, the gap between ARPAnet and USEnet was bridged at the University of California and the University of Berkeley. At the same time, in 1981 the City University of New York and Yale University created a network called BITNet (*Because Its Time Network*), based on the IBM protocol. BITNet spread among academic institutions world-wide, particularly in smaller, out of the way institutions often subsidized by IBM. This encouraged the growth of list serve discussion groups (via small) within academics similar to those on Arpanet. In 1983 ARPAnet became a backbone infrastructure to serve as a connection between gateways in order to transfer messages between different networks. It succeeded at this because it adopted TCP/IP (Transmission Control Protocol/Internet Protocol) as its standard for communication. This protocol continues as the standard of the Internet today. In fact it was so successful that everybody wanted to join it and in 1986 ARPANet was phased out and replaced by bigger, faster backbone - the National Science Foundation Network (NSFNet), which became the US backbone for a global network. The link between ARPANet, BITNet, NSFNet and other networks was called Internet. The http protocol gave birth to the World Wide Web that is popular today. In 1989 the first effort to index the Internet was created by *peter* deutsch at McGill University in Montreal who devised Archie, an archive of FTP sites. Another system, WAIS (Wide Area Information Server) was developed by Brewster Kahle of Thinking Machines *Corp.*. Tim Berners-Lee of CERN (European Laboratory for Particle Physics) developed a new technique to distribute information on the Internet, which eventually called the World Wide Web. The Web was based on hypertext which permits the users to connect one document to another at different sites. In 1993, Mosaic was developed by Marc Andreson at the National Centre for Supercomputing Applications (NCSA). It became the dominant navigating system for the World wide Web.

What is CERN?

CERN stands for Conseil Europeen pour la Recherche Nucleaire. It is the European Organization for Nuclear Research, the world's largest Particle Physics centre. It sits astride the Franco-Swiss border near Geneva.

CERN is a laboratory where scientists unite to study the building blocks of matter and the forces that hold them together. CERN exists primarily to provide them with the necessary tools. These are accelerators, which accelerate particles to almost the speed of light and detectors to make the particles visible.

Founded in 1954, the laboratory was one of Europe's first joint ventures and includes now 20 Member States.

CERN is run by 20 European Member States, but many non-European countries are also involved in different ways.

The current Member States are: Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, The Netherlands, Norway, Poland, Portugal, the Slovak Republic, Spain, Sweden, Switzerland and the United Kingdom.

Member States have special duties and privileges. They make a contribution to the capital and operating costs of the CERN programmes, and are represented in the Council, responsible for all important decisions about the Organization and its activities.

SERVICES AVAILABLE ON INTERNET

Majority of the plain users understand, the Internet means only surfing the web and using the electronic mail while the truth is that Internet incorporates numerous amazing features as being described ahead :

FILE TRANSFER PROTOCOL

FTP is an acronym for File Transfer Protocol. The FTP application is used to transfer files between hosts. FTP downloads files to your server from any remote server that is connected to the Internet. Several FTP sites permit you to access their files without establishing an account with them. These sites are called anonymous sites. You generally login to such a machine as anonymous. On being prompted to type in a password, it is considered polite to enter your email address as a password. However, pressing the Enter key is enough. While transferring, it may be necessary to compress files to save transfer time.

GOPHER

The second type of information retrieval tool available on the Internet is Gopher. A menu-based interface that provides easy access to information residing on special servers, called Gopher sites. Although Gopher performs primarily the same tasks as the FTP command, its interface is much more user-friendly and it provides additional functions, such as links to other Internet services. By selecting an item on the Gopher menu, users can move, retrieve, or display files from remote sites. The menu also allows users to move from one Gopher site to another, where each site provides different informations. The entire Gopher space (which refers to the interconnected Gopher servers) can be easily expanded by adding more servers.

E-MAIL

E-mail , shortened form of electronic mail, is the most used feature on the Internet. Almost all websites give their users, email account in order to sign in. Email has become very popular because unlike in regular mail, there is no delay. Postage is also not required. Printing e-mail addresses on business cards has become a fashion as common as printing the telephone numbers today.

TELNET

Telnet stands for Telecommunication Network, is a program that connects the user to a remote machine which may be located anywhere on the Internet and the user can then type commands to the remote machine, for example to change directories in search of certain files. While the FTP only allows users to move or transfer files, the services that *Telnet* provides depend on the services provided by the host machine, which may include much more than simple file transfers. For example, some servers are dedicated to the playing of board games, such as Chess.

NEWSGROUPS

Newsgroups are discussions on a range of topics from recreational activities to scientific research. Some of the newsgroups can be accessed by any Internet surfer, while others are more commercial in that you have to subscribe to them and agree not to forward information to others. You can read any article or write articles and post them. You can even post follow up articles and check for new article groups. You can use the e-mail facility to communicate with fellow users. A Newsgroup of interest is comp for computer professionals.

WORLD WIDE WEB

The world wide web often referred as www is a series of servers that are interconnected through hypertext. Hypertext is a method of presenting information in which certain items are highlighted. By selecting the highlighted text or image, you can obtain more information on the same topic.

The World Wide Web (WWW) is one of the newest and most popular Internet tool. It was designed by Tim Berners-Lee at the European Organization for Nuclear Research (CERN) in Switzerland in 1989 as a tool to help the international group of physicists to exchange findings and information related to their research. What makes the Web so exciting is that you can go anywhere, for example, an FTP site, a Gopher menu, or another document. In addition, the Web offers another very important service - URL or Uniform Resource Locator - which defines a universal locator mechanism for data anywhere on the Net.

You use a browser software like Mosaic, Netscape Navigator or Internet Explorer to navigate the Web.

ARCHIE

Archie is another Internet search program which helps users locate files and directories on anonymous FTP servers anywhere on the Internet. It was named after the Archie comic book character. It responds to queries based on complete or partial filenames. It is useful for gathering information and indexing widely distributed collections of data. Archie runs as a client program and allows you to retrieve public domain files. Archie sites periodically update their file listings by searching FTP sites locally or around the world. These files can be text-based, graphics-based or sound files. The Archie database can be accessed through a local client, and interactive Telnet session or through electronic mail.

WHOIS

This service is used to get information pertaining to Internet users, domain name and organisation. By using it, you can detect E-mail addresses, host computers and domain names. Information related with the organisation and users like name, host computer and name of the organisation are registered in a big registry database.

WAIS

WAIS stands for Wide Area Information System. It is another tool that helps you locate text documents. The search is based on the keyword provided. WAIS keeps track of how many times the keyword is found in documents. WAIS identifies documents after calculating which document is most closely related to your topic. WAIS searching is elementary and you cannot use the and/or/not operators in your search. WAIS finds exact matches. In other words , if you are searching for Black, WAIS will find only Black and ignore all like Blackboard, Blackmail and even Blackie.

VERONICA

Veronica is an acronym for Very Easy Rodent Oriented Net-wide Index to Computer Archives. It is an index of titles and Internet Gopher items which is updated once every fortnight and provides keyword searches of these titles. A VERONICA search typically searches the menus of hundreds of Gopher servers that are announced on the Internet. Once the files have been located , VERONICA also allows you to browse through them. VERONICA is also very easy to use as it is menu driven.

INTERNET RELAY CHAT

Internet Relay Chat or just chat, is a popular way for Internet users to communicate in real-time with other users. Real-time communication means communicating with other users in the immediate present. Unlike e-mail, chat does not require a waiting period between the time you send a message and the time the other person or group of people receives the message. IRC is often referred to as the “CB radio” of the Internet because it enables a few or many people to join a discussion.

IRC is a multi-user system where people join channels to talk publicly or privately. Channels are discussion groups where chat users convene to discuss a topic. Chat messages are typed on a user’s computer and sent to the IRC channel, where all users who have joined that channel receive the message. Users can then read, reply to, or ignore that message or create their own message.

BASIC INTERNET TERMINOLOGIES

Intranet – Intranet is an internal network limited to a specific range like a building that uses Internet standards. Although, Intranet uses all the standards of Internet, it is not always connected with Internet.

URL (Uniform Resource Locator) – URL stands for Uniform Resource Locator. This is an address for a resource on the Internet. URLs are used by Web browsers to locate Internet resources. A URL specifies the protocol to be used in accessing the resource (such as http: for a World Wide Web page or ftp: for an FTP site), the name of the server on which the resource resides (such as www.presidentofindia.nic.in).

Browser – Browser is a software that helps a user view HTML documents and access files and software related to those documents.

Domain – Domain is a set of websites on the Internet which ends with the same group of letters, for example .com represents commercial type of sites while .org represents organisational type of sites. Domain is last part of the address.

Domain Name – Domain name is a name which identifies a website or group of websites on the Internet.

Domain Name System – Domain Name System , also known in short as DNS is a hierarchical system by which hosts on the Internet have both domain name addresses (such as www.sify.com) and IP addresses (such as 210.18.12.244).

Hyperlink – Hyperlink is a connection between an element in a hypertext document, such as a word, a phrase, a symbol, or an image, and a different element in the document, another document, a file, or a script. The user activates the link by clicking on the linked element, which is usually underlined or in a color different from the rest of the document to indicate that the element is linked. When the user pointer changes to a hand you are over a hyperlink.

Hypertext – Hypertext is text stored in a computer system that contains links that allow the user to move from one piece of text or document to another.

Hypermedia – Hypermedia is a system that links text to files containing images, sound or video.

Freeware – Freeware is a type of computer software that is offered free for anyone to use especially from the Internet.

Shareware – Shareware is a type of computer software that is available free for a user to test, after which they must pay if they wish to continue using it.

Spyware – Spyware is a software that ships with a software stealthily you download from the Internet and gather your personal information like which web sites you visit and what you fill out in an online form and uses this information to build a profile without your consent.

Blog – Blog is the contraction universally used for weblog, a type of website where entries are made (such as in a journal or diary), displayed in a reverse chronological order. Blogs often provide commentary or news on a particular subject, such as food, politics, or local news. Some blogs function as more personal online diaries. A typical blog combines text, images and links to other blogs, web pages and other media related to its topic. Most blogs are primarily textual though some focus on photographs (photoblog), videos (vlog), or audio (podcasting), and are part of a wider network of social media.

Website – Website is a place connected to the Internet, where a company or an organization, or an individual person, puts information.

Webpage – Webpage is a document that is connected to the World Wide Web and that anyone with an Internet connection can see, usually forming part of a website.

Home Page – Home page is the main page created by a company, an organization, etc. on the Internet from which connections to other pages can be made. Or Home Page is a page on the Internet that you choose to appear first on your screen whenever you make a connection to the Internet.

Protocol – Protocol is a set of rules that control the way data is sent between computers.

Search Engine – Search Engine is a computer program that searches the Internet for information, especially by looking for documents containing a particular word or group of words.

Server – Server is a computer program that controls or supplies information to several computers connected in a network. Or, server is the main computer on which server program is run. In short , computer that gives or serves something is called server.

Host – Host is the main computer in a network that controls or supplies information to other computers that are connected to it.

Client – Client is a computer that is linked to a server. In other words, client is a computer that receives services from the server.

Hacker – Hacker is a computer enthusiast who secretly finds a way of looking at and/ or changing information on someone else's computer system without permission.

Cracker – A person who overcomes the security measures of a computer system and gains unauthorized access to obtain information illegally from a computer system or uses computer resources illegally for illicit ends.

Download – Download is a process to move data to a smaller computer system from a larger one. Or, it is a process to transfer data from the server to the client.

Upload – Upload is a process to move data to a larger computer system from a smaller one. Or, it is a process to send data from the client to the server.

Portal – Portal means electronic portal. Electronic portal is the website which provides the information related to the sale and purchase of goods or it provides the e-commerce facility. For example:- yahoo.com is a portal that provides the facility of e mail, news, advertisement, reservation, bid, participating in a contest.

NET ETIQUETTE

We communicate with people in our society, discuss with them on numerous topics and correspond with them using traditional method. This is the most prominent event prevalent in a society. Do we follow some specific code of conduct while engaging ourselves in these sort of activities? Certainly Yes. When we keep a code of conduct while talking to people with the same region, same country, same civilization, then on Internet when we are interacting with people around the globe having different nation, different caste, different faith , different civilization, different culture and might be different mental setup, we are in more need of a code of conduct. This code of conduct followed while using Internet is called net etiquette. Net etiquette is also called netiquette. When we keep the code of conduct in mind while using net we are treated as civilized netizens. The etiquettes we must follow while we are on the net are as follows:

What do you mean by netizens?

Netizens mean citizens of the net world. The term refers to people who spend most of their time on the Net. It is a blend of two words Network and Citizens.

Do not use flaming language : Be very careful while you are sending somebody a message that your language is neither crictical nor rough. Some users ' messages carry less information, more criticism and all what people dislike.

Check the Sarcasm : While you are talking to somebody in person , your body language and facial expression support your words i.e. your body language and facial expression ensure what you speak. Unlike all that , when you are text chatting on Internet or sending an email, you express your views with the help of text and graphics. Therefore, you must make sure if your purpose is sarcastic. To express yourself in different moods , we use smileys. Smileys will be discussed in chapter 8.

Do not misinterpret your identification : Do not mislead your net friends by floating your wrong identification. This is immoral as well as illegal. If you wish , you can have one nick name of yours. It will not let others know who you are exactly nor you have to confront with any sort of embarassment because of misidentification.

Do not use mean messages : Message should be having standard. It must not be mean. It is better not to send messages than sending mean messages.

Keep in mind, your counterpart online is a person not a computer : Remember your counterpart on the other end is a person who has his/her own sentiments. Means your message should be measured and it must not hurt your net partners' heart.

Use capital letters very rarely : While text chatting or sending an email to your friends, you must be careful of using case i.e. capital or small. Capital letters are supposed offensive. It reflects ill-mannersim. Using capital letters seems as if you are SHOUTING. So be careful. Your best friend might take it otherwise. To emphasize on a particular word or sentence , enclose them with double quotation marks.

Check for errors before sending : Message full of errors is treated like a junk mail with no use. Since errors in spellings or structure of sentences make a very different sense what it actually contains, it makes the receiver confused . Thus , your personality will be maligned. People would take you as a irresponsible netizen. It is therefore advised to check spelling and grammar carefully before sending to someone.

Learn the rules and abide by them : Newsgroups, chat rooms, mailing lists and channels have some rules and regulations. You should be acquainted with these rules and regulations while joining these services. You can enjoy uninterrupted services if you know the rules. However, ignoring the rules may lead to your dismissal from the services.

Do not infringe other copyrights : Do not send material if it is not yours.Never send material of which others have got copyright , to the mailing lists or newsgroups. Plagiarism

NOTES

is not only immoral but a legal offence too. Before you do so , take permission from the organization or person who has its copyright in black and white.

APPLICATIONS

Internet has changed the way people think and work today. No invention has likely ever influenced human lives to this extent. Education, medical, business, government, agriculture, research or talk of any world Internet has got very deep impact. Today with the net facility , you can send a letter to your relatives and friends, can share your feelings with your beloved , perform your business dealing in a few seconds. Patients can consult the best doctors in the world and get advices. Students can learn from the most prestigious teachers at their doorsteps. Internet , being the biggest encyclopaedia in the world , is a boon for the researchers. Researchers can find a lot of contents on the Internet that help in their subject of research. They spend most of their time on Internet rather than on books. Surprisingly, Internet can help you find your child-days pals who are left unnoticed. Internet may be with you while you are in search of a counterpart of your life of your own choice. With the advent of Internet , an entire industry has been setup in the name of e-commerce. Internet , in addition to all walks of your life, helps the government run good governance and provide some basic services to the citizens with ease and peace.

Internet has got innumerable contributions in making the world full of ease and comfort engaging itself in different fields, quite difficult to mention all those. Here, we are discussing applications of Internet especially in commerce and governance.

COMMERCE ON THE INTERNET

Internet has devised a new industry world which is generally called electronic commerce or e-commerce. Influence of Internet can be estimated when you see business enterprises prefer to float their site URL rather than phone numbers. You open a site and you will see a lot of lucrative advertisements flickering on your screen. A number of desired and undesired mails are waiting for you when you click on your inbox. With the Internet, you can run your business with a small desktop or laptop computer. E-commerce is a combination of net technology and traditional business. Using this, we can operate our entire business process with Internet. Commercial advertisements, order placement, order processing, payment and all other activities, a business engages can be done using Internet. For example, going through the sify.com, you can select the item of choice, place your order and even can pay online through credit card or net banking.

Doing business on Internet is very simple and does not require you be a millionaire. You can start you business with a telephone line, internet connection and a computer. Business through/on Internet offers the following privileges:

- Less capital required
- No big infrastructure required. Compared to traditional business infrastructure required in doing e-business is negligible.
- Less Human resources required
- Relief from paper work

GOVERNANCE ON/THROUGH THE INTERNET

Internet has helped in governance a lot. This has proved a boon for good governance. Several government departments have been linked with computer and Internet in different states of India. Andhra Pradesh in India is such a good example. In this state, people can get their work done from *Panchayat* level to chief ministerial office with the help of Internet. Internet has minimized the problems of getting in the queue for several hours and giving bribes to the clerks and other officials. Internet in banks, schools, colleges, universities, passport offices, administrative offices has facilitated common civic life. In India, National Informatics Centre has developed numerous government sites that connect common man with the Prime Ministerial and Presidential Offices.

E-governance aims at providing all such services at people doorsteps. This is also called G-TO-C means Government To Citizen. E-governance or government for citizens are popular in numerous nations in the world. FIRSTGOV of America, E-ENVOY of Britain, E-TAIWAN of Taiwan, E-CITIZEN of Singapore, E-KOREA, E-MALAYSIA, and GOVERNMENT ONLINE of Canada are prominent and have been rewarded. These sorts of projects are even working in India also. Andhra Pradesh government has initiated E-SEWA to provide better services to the people of state. This project is meant for offering all possible services to

people under one roof and this could check people wandering from one office to the other for getting their work done. Using E-SEWA people can deposit their bills of water , electricity and telephone with no hassle. Besides they can get birth and death certificates, educational certificates online. This service was started in 1999 and this E-SEWA has 200 running centers, offering 160 different services. According to one estimation, every month, more than five crores people are getting benefited. Through E-SEWA property tax, income tax etc. can also be deposited. Applications can be applied for passport. Tickets for train and airplane can be booked. Tickets can be purchased from cinema halls. E-governance is also functioning well in Kerala and Karnatka in India.

E-governance includes the following activities:

Meetings : With the help of Internet, video conferencing facility is available. This facility is used in organizing conferences, seminars and meetings. People from one organization can participate in a function using this facility sitting different corners of the world.

Correspondence : Internet is being used as an effective tool of correspondence. Any order, circular, notice can be communicated immediately from head office to its different branches and answer also can be received quickly. Offices use Internet to send their reports. This is quicker, easier and safer.

Registration and Admission : Government and non-government offices now float their registration and admission forms on their sites. Students going to that particular site, can register themselves and also get them admitted. They can pay their registration and admission fees online through credit card or net banking. Alternatively, they can also send demand draft after registering themselves online.

IMPACT OF INTERNET ON SOCIETY

Internet on one hand , has improved the living standard of society, while on the other hand it has brought about some negative impression on the society. The negative aspects of Internet are as follows:

ADDICTION OF INTERNET

Young generations of this era are crazy about Internet. They have left behind all other means of recreation and become addicted to Internet. Sitting for several hours before Internet , sending mails and talking to their online friends are main hobbies of the youngsters. This hobby adversely affects on their health and mind. Beside they spend a lot in this way and suffer financial crisis also.

PROPAGATION OF PORNOGRAPHIC MATERIAL

Internet , being the biggest encyclopaedia in the world today incorporates contents from almost all the fields of knowledge and information. This advantage of Internet is frequently misused by developing pornographic sites where foul pictures and movies are floated. Our youths watch these things with great taste. This is a fatal aspect of Internet for which administration is also concerned. The administration tries to prevent this game but it can not be checked completely until users become conscious about its ill consequences.

CRIME THROUGH/ON INTERNET

Internet being the hub of business and financial activities and a large means of communication, is also a great attraction of the scoundrels. Internet is being widely used to operate militant and anti-social activities. Using email and other services available on Internet, anti-social and terror elements easily can perform their foul activities. With the e-mail facility they can communicate their plan each other irrespective of any geographical boundaries. Likewise, financial fraudulence is common on Internet today. Since people are doing a big amount of transactions using their credit cards etc., Internet frauds using their expertise pick-up their credit card details and perform financial crimes. In addition to all that, even at times information given while creating your e-mail ID is misused and people are targeted for ill-wills. Viewing pornographic sites is one of prominent crimes happening with the help of Internet which is killing our young minds and becoming an important tool for sexual abuse. This powerful tools of communication is also used for spreading hatred and violence. There are a lot of sites that help spread ethnic discrimination. In India, the administration is taking steps to check these things. Hawkish eyes are upon cyber cafes . In metros, it has become mandatory for the owner of cyber cafes to maintain a register of the users' names and addresses and Identity Card has become a must to use net in a cyber café. Wish these measures work and Internet remain a creative tool for all those who are engaged in making the world a better place to live!!

Check Your Progress

1. What is CERN?
2. What is Archie?
3. What are Net Etiquettes?
4. How Meetings are done through e-governance?

ANSWERS TO 'CHECK YOUR PROGRESS'

1. CERN stands for Conseil Europeen pour la Recherche Nucleaire. It is the European Organization for Nuclear Research, the world's largest Particle Physics centre. It sits astride the Franco-Swiss border near Geneva.
2. Archie

   Archie is another Internet search program which helps users locate files and directories on anonymous FTP servers anywhere on the Internet. It was named after the Archie comic book character. It responds to queries based on complete or partial filenames. It is useful for gathering information and indexing widely distributed collections of data. Archie runs as a client program and allows you to retrieve public domain files. Archie sites periodically update their file listings by searching FTP sites locally or around the world. These files can be text-based, graphics-based or sound files. The Archie database can be accessed through a local client, and interactive Telnet session or through electronic mail.
3. Net Etiquette

   We communicate with people in our society, discuss with them on numerous topics and correspond with them using traditional method. This is the most prominent event prevalent in a society. Do we follow some specific code of conduct while engaging ourselves in these sort of activities? Certainly Yes. When we keep a code of conduct while talking to people with the same region, same country, same civilization, then on Internet when we are interacting with people around the globe having different nation, different caste, different faith , different civilization, different culture and might be different mental setup, we are in more need of a code of conduct. This code of conduct followed while using Internet is called net etiquette. Net etiquette is also called netiquette. When we keep the code of conduct in mind while using net we are treated as civilized netizens.
4. Meetings : With the help of Internet, video conferencing facility is available. This facility is used in organizing conferences, seminars and meetings. People from one organization can participate in a function using this facility sitting different corners of the world.

EXERCISE

1. What do you mean by Internet ? Describe the evolution of the Internet.
2. Write about anatomy of the Internet.
3. What are the different tools of Internet ? Describe them.
4. Write an account of growth of Internet.
5. What do you mean by Internet Service Provider ? Name some Internet Service Providers.
6. Internet has no sole owner. Why ?
7. What is World Wide Web ?
8. What do you mean by netiquette ? Write a few etiquettes you must follow while on the Net.
9. What are the applications of the Internet ?
10. Write short notes on the following -
    (a) CERN
    (b) Spyware
    (c) Hyperlink
    (d) Cracker
    (e) Hypertext