



## INTERNET: THE SURVIVAL OF COMMUNICATION

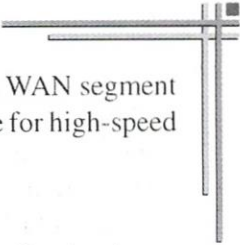
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Twenty first century is the century of IT that is Information Technology-a Hi-Tech century. Adopting this technology is the only means to survive in the current competitive technological world. The alarming thing in IT is grabbing not only the production industries but also the service industries as well as trade and commerce. Knowledge workers are on the way of forgetting the so-called telecommunication system. Now ISD phone, postal mail, fax are replaced by the Internet Phone, E-Mail and Internet fax. Internet is the latest buzzword among the computer users now a days. Everyone, whether he is working in the field of information technology or not, is inquisitive about it. Internet is a worldwide computer network that contains a large collection of information, which could be made available to you on your computer. A person having an Internet connection can retrieve information on any topic quickly. The computers do not necessarily have to be physically close to each other. In fact they can be at different locations of the same building or even in different parts of the world. If the network is composed of computers in the same building or in a small area (radius 1 to 10 miles), it is referred to as Local Area Network (LAN). If the computers are spread across a much larger area, the network is referred to as 'Wide Area Network' (WAN). In LAN configuration, all the computers are located within the same department, workgroup or company location. LAN could be in an office with many department having computers connected to each other. This way every department can have access to the information available in the computers of the other department In WAN configuration, the computers are located in different cities, countries or even continents. An example of WAN could be the network of computers available in the different Universities' of USA. This facilitates the students to have an access to all the Universities' libraries and to know the availability of a particular book, journal or any other facility at the correct place. Of course this is possible only when the library catalogues are computerized. Thus, the only difference between a LAN and a WAN is the geographic area covered by the network.

Overall computer usage and awareness to share information through network has increased in our country and therefore the need to network is immense. The growth in LAN segment has been better since the networking is in a campus environment,

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without depending upon an external service provider. However, in WAN segment the growth had not been impressive due to inadequate infrastructure for high-speed connectivity.

### **The Advantages of Computer Networks**

Computer networks are now being used in many diverse fields like business, education, medicine, research and entertainment etc. They provide a variety of advantages for computer users. Basically these are-

1. Communication (E-Mail)
2. Shared data and
3. Shared resources (Printer, modem etc.)

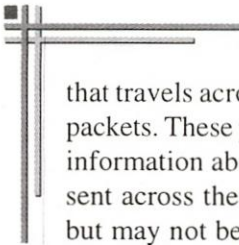
With the help of software one can electronically communicate between computers connected to the network. This communication, known as e-mail, allows instant communication over a long distance. Shared data, such as library catalog, is accessible to all the users connected with the network. If one person on the network updates the data; it is instantly available to everyone. Shared resources means the computers connected to the network can share printers, hard disk drives and software available with the other computers.

### **What is Internet?**

Internet is the abbreviation of Internetwork System and is described as a network of networks. That is because there are many different network systems (over 40,000) readily accessible through the Internet. It appears differently to different people. Internet is the largest and most complete learning tool for a group of people with varied educational backgrounds and interests. Professors, students and other educators can share ideas instantly across vast distances. For scientists and research communities Internet is an essential and indispensable tool. Through Internet scientists can gain instant access to the worlds most advanced research facilities and discuss their research problems with others working in the same field. For business community Internet is the common place where they can discuss and set the business deals without moving from their places. The person who wants to procure something places his requirements on Internet and concerned suppliers can quote for the same almost instantly. It also serves as an encyclopedia since one can get the desired information in detail on any subject of his interest.

### **History of Internet**

Attempt to know the exact starting point of Internet is virtually impossible. During mid 1960's, researchers were beginning to experiment with the idea of computer networks connected with the normal telephone lines and modems. Out of their brainstorming the idea of packet switched networks was born. The information



that travels across the network is broken down into many numbers of pieces; called packets. These packets include not only the core information, but also the addressing information about the destination and their intended order. These packets are then sent across the network where they eventually arrive at the intended destination, but may not be in the intended order. Therefore these packets are reassembled at the receiving side and this is how the messages computer at the other end of the network. Over the years, packet switching has been used in the networks of all sizes. When the local networks started coming up, in large numbers, at research agencies and universities, it became desirable to connect them in some fashion.

During 1969, the US department of Defense, through Advanced Research Project Agency (ARPA), created an experimental packet switched network over telephone lines. Out of this initial collection of networks, ARPANet allowed scientists, researchers, and military personnel at diverse sites, to communicate through electronic communication. Many of these sites found ways to connect their private networks not having a similar host computer and hence it led to the need of hooking up computer systems that were fundamentally different from each other. During 1970's the ARP A developed a set of rules, called protocols that helped in connecting different networks all over the world ARPANet continued to grow. During 1982, ARP ANet joined with MILNet (the military network) and a few others and it is said that Internet was thus born, from this consolidation of networks.

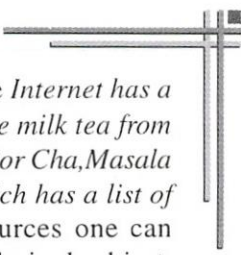
### **Who maintains Internet?**

It would be surprising to know that there is no regular maintenance body for Internet. Instead, there is an organization of Internet users called the Internet society or ISOC for short. This organization is completely voluntary and their only goal is to promote global information exchange through the Internet. The appointed leaders of this organization known as the Internet architect board have the responsibility of technically managing and directing Internet. This group is responsible for standardizing the technology used to connect, to communicate with and work within the Internet. These standards were developed as and when required with plenty of inputs from interested individuals.

The inputs come through another group in the ISOC. The Internet engineering task force again consists of volunteers, interested in solving technical problems faced by the Internet.

### **What can I do on Internet?**

Believe me, you can perform any tasks related to the computing or information technology. Some of the few topics available on the Internet are Arts and culture, Space and astronomy, Travel and geography, international affairs, the environment



and nature, science and technology and many more. As an example *Internet has a page on 'Cha' (Bangladeshi tea) which reads "Cha is a great spice milk tea from Bangladesh..."*. It also lists *Babgladeshi Cha (tea)-Railway Cha, color Cha, Masala Cha, and Ginger Cha etc.* It also has a page on "*Cha recipe*" which has a list of different styles of making Cha. Using the Internet's vast resources one can communicate with people from all over the world and about any desired subject. You can get information on virtually any topic imaginable. The problem many times is finding that information. The tools and the ways to access the information are briefly discussed in this article. However, to get more details, one can refer a good book "free stuff from the internet" by Patrick Vincent, published by Complex Computer Publishing, a division of Pustak Mahal, Delhi.

### **How do I get into the Internet?**

Depending upon the system configuration and requirements, in general there are three types of connections one can make. These are:

1. Through a local area network
2. Through a dial-up Internet account
3. Through a dedicated Internet account

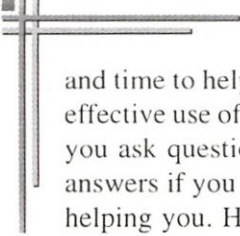
In the first type, connect your PC to the LAN having an Internet connection. To get connection through a dial-up Internet account you have to contact an Internet provider, a company that specializes in connecting individuals and networks to the Internet. Service provider will give you a user ID, password and an access telephone number. The third type is through a dedicated Internet account, sometime referred to as an IP (internet protocol) account, because the user is allotted his own IP address to get an access to Internet. This way you become your own local hosts and use the Internet provider route for your information on the Internet. Large business houses, institutions and the government agencies, generally use this arrangement as it is very costly.

### **Which networks are on the Internet?**

Wide variety of networks are connected with the Internet. These networks fall into five broad categories; these are-educational institutional, military institutional, commercial organizations, government institutions and other organizations. Within each of these categories there are hundreds of different individual networks, the largest category being the educational area.

### **What can I offer to the Internet?**

What you offer to the Internet is up to you. One can go round the Internet, reading public communication and downloading the information you might need. Conversely, you can contribute the information you have, lending your knowledge



and time to help others that might have questions or problems. However, the most effective use of the Internet would be when your communication is truly two ways, you ask questions, and you receive a response. You read questions and provide answers if you have. In this way you are interactively helping others and they are helping you. However, you will not be “kicked off” the Internet if you refuse to participate in an active manner.

### **Understanding Internet address**

Like the traditional postal system in a computer network or Internet also, one has to mention the address of the recipient along with the message. Let us take an example of a hypothetical Internet address to understand it.

**[gsg@sag.drdo.gov.bd](mailto:gsg@sag.drdo.gov.bd)**

Let us start with the right most part of the address. The first word ‘bd’ means Bangladesh which is the name of a geographic domain, the second word ‘gov’ means it is a government organization having its own WAN named ‘drdo’ the fourth word ‘sag’ is the computer network in which ‘gsg’ is the user id. Using this addressing scheme, the electronic mail or other files are transmitted to the intended recipient on the Internet. The part of the address before the symbol ‘@’ is known as “Domain Naming System “. This system provides a method of uniquely identifying different organizations, computer systems and individuals on the Internet. The system also allows for different domain levels to be included in an address. The highest level of the full domain is a code indicating the type of the organizations to which the domain belongs. There are only seven different organizational domains

**.com:** for commercial entities

**.edu:** for educational institutions

**.gov:** for non military US government institutions

**.int:** for international institutions

**.mil:** for US military institutions

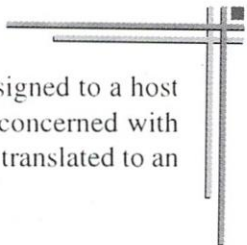
**.net:** for network resources and

**.org:** for non profit organizations

Similarly codes of geographic domains also exist that indicate the name of the country. If there is no geographic code used, then it is assumed that the domain is located within the United States.

### **Understanding Internet protocol Address**

Most of the computer users must be aware that computers do not understand letters or symbols that human beings use to communicate effectively. What the computers understand is numbers-specially 1’s and 0’s. Thus every Internet address is first converted into a string of 1’s and 0’s and this is known as Internet protocol address



or IP address. The IP address is a unique 32-bit address that is assigned to a host system when it is first linked to the Internet. A user need not be concerned with these numbers. When he uses a domain address it is automatically translated to an IP address before the message is transmitted.

### **Software tools for Internet**

To take the maximum advantage of the Internet, you first need to familiarize yourself with the software tools available. All tools are menu driven and hence hardly need any explanation. Service providers offer most of these tools to browse the Internet. Some of the tools and their purpose are given here.

#### **E-mail**

E-mail is the basic tool used for communication on the Internet, which all service providers offer. On start, e-mail asks for the address of the recipient followed by the subject and message. Finally 'send' command is issued to the service provider's computer and as soon as your computer is connected to the host a message 'you have mail' is flashed on the screen. Consequently user can open his mailbox to see the message and get the file down-loaded on his computer.

#### **FTP**

File Transfer Protocol is a software tool, which is used to transfer files stored on computers to another in the network. Games, software upgraded pictures and documents can be downloaded on the computer-using FTP. This tool asks for the name of the site followed by the user id and password. The appropriate directory and the desired file is then selected by the user and downloaded using the FTP tool.

#### **Telnet**

This tool is used to get you to feed-up with the computer available anywhere in the world. FTP provides only browsing of directories and files while using Telnet you can control them as though they were on your desk. With Telnet, you can download files, play games against other people, read and leave messages, link to other computers.

#### **Gopher**

Gopher is one of the easiest Internets tools you can use to search for, view, and download documents, files and other information. Because of its user friendly and menu driven simplicity, it has become one of the most popular ways to fetch information.



## WWW

World Wide Web is a collection of documents, graphics, videos, and other files scattered throughout the Internet and linked together into hypertext documents on every conceivable subject for you to browse through. One of the best tools for trolling through the WWW is a windows-based user interface called Mosaic. There are different types of web site such as: personal Web Site, Business Web Site etc. Some important website in the international arena are:

<http://www.spynet.com> or <http://www.earthlink.net>: to get online connection  
<http://www.microsoft.com/word/internet/is/default.htm>800/426-9400:

To download a free copy of Internet assistant

<http://www.internic.net>: to get more information about business domain names  
<http://www.shareware.com>: to get web page authoring program on the web  
<http://home.aol.com/800/827-6364>: to use America online  
<http://www.geocy.com>: to build and post web pages free of cost

<http://www.peacpit.com/peachpit/home-sweet-home>: to get tips of technical world

<http://www.yahoo.com>: to get general information

<http://www.hotmail.com>: to get general information

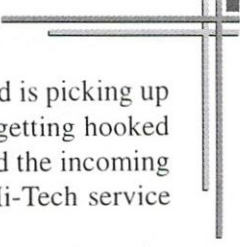
<http://www.macromedia.com/index.html>: for information, demonstration, and hyperlinks to interactive multimedia

## Usenet

Usenet is a collection of literally thousands of special interest newsgroups that you can access to read and discuss a large variety of topics. With Usenet, there is literally something for everybody. However, Usenet can be broken down into eight basic areas. These areas are news for news and information about Usenet, **soc** for Sociology related news and issues, **sci** for Science related news and issues, **rec** for sports, hobbies and recreational topics, **talk** for talk, radio for discussions and debates, **alt** for discussions on alternative, bizarre and often offensive subjects and finally **misc** for the catchall for odds and ends. Apart from these, there are many more software tools, e.g. mailing list, viewers archives, encoding etc. available for use with Internet. Basically all these tools are used to extract the information from the Internet, each of them having some special facilities.

## Conclusion

Internet is growing by leaps and bound. It now links over 40 million users on three million computers in more than 180 countries in the world. Mr. Vint Cerf one of the original developers of the Internet and president of the Internet Society, visualizes that there will be as many as 500 million people hooked onto the Internet through 100 million computers worldwide by the end of year 2002. It is said that the Internet



doubles in size every year. In our country Internet has caught on and is picking up the momentum. More and more individual users and agencies are getting hooked onto the Internet. With such wide spread utilities of the Internet and the incoming Integrated Services Digital Network (ISDN), we foresee a very Hi-Tech service providing virtually everything on the desktop in our country.

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