
UNIT 6 INTERNET OWNERSHIP AND STANDARDS AND ROLE OF ISPs

Structure

- 6.1 Introduction
- 6.2 Objectives
- 6.3 Internet Ownership
 - 6.3.1 Need of Internet Ownership
- 6.4 Internet Service Provider (ISP)
- 6.5 Working of Internet and Role of ISP
- 6.6 Code of Conduct for ISP
- 6.7 ISP as New Media Centre
- 6.8 Evolution and Present Status of an ISP in India
- 6.9 Business Model for ISPs in India
- 6.10 Value Added Services
- 6.11 Monetary Concepts of an ISP
- 6.12 Evaluation of Performance of ISPs
- 6.13 Liability of Web Site Owner/ISPs
- 6.14 Summary
- 6.15 Terminal Questions
- 6.16 Answers and Hints
- 6.17 References and Suggested Readings

6.1 INTRODUCTION

Internet is the network of networks around the globe or interconnections of Networks. Lakhs of computers are connected through Internet so the term “Internet ownership” is very critical in terms of language. But from the maintenance point of view, these must be maintained by humans by, machine or with the help of technology, within a legal framework. Everyone understands that the internet is crucial for the functioning of modern economies, societies, and even governments, and everybody it should to be reliable and secure. But internet possesses such a decentralized status that there is no authority to control over cyberspace. So internet ownership has no exact definition till now as far as cyberspace is concerned.

6.2 OBJECTIVES

After studying this unit, you should be able to:

- explain the basic concepts behind Internet and its ownership status;
 - describe the code of conduct prescribed for Internet Service Providers;
 - enlist the roles and liability of ISPs; and
 - develop a vision for better technology.
-

6.3 INTERNET OWNERSHIP

Any network needs some centralized control to function. The Global Phone system, for example, is administered by the world's oldest international treaty organization, the International Telecommunication Union, founded in 1865 and now a part of the UN family. Similarly, the Internet should be administered under a multilateral treaty. ICANN (Internet Corporation for Assigned Names and Numbers), coordinated by a private sector non-profit organization which was set up by the United States in 1998, took the activities performed for 30 years, amazingly, by a single pony tailed professor in California. It has the responsibility for internet protocol (IP) address space allocation, protocol identifier assignment, generic (GTLTD) and country code (CCTLD) Top level Domain name system management and root server system management function. It supports the United States only, though Governmental Advisory Committee, composed of delegates from other nations, having no real powers.

As ICANN favours the United States openly and wants to control the domain system, a cold war is going on between the European Community and US because of controlling authority. This discontent finally boiled over at the UN's (WISS) World Summit on the Information Society, the first phase of which was held in Geneva, in Dec 2003. The second phase was held at Nov Tunnis.

6.3.1 Need of Internet Ownership

The most critical area which requires sufficient attention is "Domain Name System".

Firstly, there are domain names such as www.careindia.org. Somebody must decide who will operate the database of generic names ending with suffixes such as ".com", ".org" and others. Also someone must appoint the operators of two-letter country-code suffixes (such as ".in." for India)

Secondly, there are internet protocol numbers, of up to 12 digit codes, and invisible to users, that every machine on the networks needs to have in order to be recognised by other machines. Due to a technical decision made when the network was developing in the late 1970s—in a world speckled with mainframe computers—the system was set up to accommodate only around four billion potential internet protocol numbers, far fewer than are necessary now. Until the internet is upgraded, IP numbers must be allocated sparingly and carefully, since accidentally duplicating them creates mayhem for routing internet traffic.

Thirdly, what is the meaning of Root servers? Somebody must decide who should operate the root servers. Where will those operators be based?

Fourthly and finally, there are technical standards that must be formally established and coordinated to ensure the interoperability of internet.

Please answer the following Self Assessment Question.

Self Assessment Question 1

Spend 3 Min.

Why is Internet called the Unsecured Channel? Do you think ICANN supports USA only?

.....
.....
.....
.....
.....

6.4 INTERNET SERVICE PROVIDER (ISP)

An ISP (Internet Service Provider) is a service provider company that collects a monthly or yearly fee in exchange for providing the subscriber with Internet access or remote access as per Government prescribed framework.

An ISP might provide dial-up service, cable, ADSL, TI, leased line or other types of Internet access. Some ISPs are local while others are national. A national ISP will provide access throughout most of the nation, while a local ISP will only serve subscribers in a limited geographical region.

When looking for an ISP the initial consideration is the type of access desired. Some ISPs only offer dial-up access, which is the slowest type of connection. If you want cable service, you'll be checking with your local cable TV provider to see if cable access is offered. For DSL service, you may have multiple choices or it could be that DSL is not yet available in your area. Often this can be remedied with a call to the phone company to upgrade local telephone lines.

Every ISP has a privacy policy and Terms of Service (TOS) contract that subscribers must agree to before subscription will be accepted. The privacy policy will state what the company will and will not do with personal information collected at the time of sign-up. Name, address, and normally a credit card number are required. The privacy policy should also state under what conditions your personal information might be shared with third parties, government officials, or others. The TOS contract stipulates how you can use the service. For example, dial-up access is often sold as "unlimited access" but this is not to be taken literally. Dial-up accounts normally limit hours per month to 250-400, depending on the ISP. Truly unlimited access (leaving your computer on and actively connected to the Internet 24/7) is called *dedicated* access. Most DSL or cable subscriptions allow dedicated access.

The Terms of Service contract of the ISP will also state rules about hacking, protecting copyrighted materials, denial of service attacks, harassing other people, spam, compromising the service, and many other issues. These are as much for the legal protection of the ISP as to let potential subscribers know what the ISP will and will not tolerate. If you are planning on using web space provided by the ISP, check for

limitations here too. Many ISPs do not allow commercial websites to be set up on their servers. This usually means that nothing can be sold from your personal web space, including for example, a software program you wrote, original music, or any other item. ISP websites are normally for personal use only, to block, post pictures, and so on.

Once you find an ISP that offers the services, privacy policy and TOS you can live with, you can sign up online through a public terminal, or call. From here all that needs to be done is to enter the ISP access number and a few other parameters into the networking software on your computer.

Please answer the following Self Assessment Question.

Self Assessment Question 2	<i>Spend 1 Min.</i>
<p>What does the term 'ISP' stand for?</p> <p>.....</p> <p>.....</p>	

6.5 WORKING OF INTERNET AND ROLE OF ISP

All the computers and networks connected by the Internet work because they follow a simple rule, TCP/IP (a communication protocol). TCP/IP breaks all data into small packets, and the first part of each packet has the address where the packet is meant to go. There is no central computer or authority. For transmission hardware, the Internet is dependent on the existing infrastructure developed by telephone companies and other telecommunications companies. Internet Service Providers lease data circuits from the telephone networks and have dedicated computers at the end points or nodes. These rely on the distributed intelligence of networking equipment known as "routers", thus bypassing the telephone company's expensive switching computers, while using their transmission lines. Computers known as the "servers" hold all the content of the Internet, and the servers are owned by organizations and companies who want to distribute information.

For example, if a message is sent from Delhi to California to a server named california.org, the message will be broken up into packets. Some may travel from VSNL to the MCI router in the US, some may travel to Chennai and then to the MCI router, and so forth. There is no predetermined path and even individual packets of the same message may follow different paths. It all depends upon the traffic at that node, at that moment in time. As the packets reach california.org, they are all put together as in the original message and delivered to the given address.

In order to accomplish the task of messaging across a network, computers use a networking protocol. This enables different types of computers running different types of operating systems to communicate effectively. The de-facto standard today is TCP/IP.

Suppose you as a user want to access the Internet and see a website called, <http://www.mtnl.in/>. Then you will have to log on to the net using a telephone and a modem, and use a browser to access the site. Any entity that provides you with means to do so is called an Internet Service Provider (ISP).

The main components providing access to the are:

- International connectivity which allows you to connect to the amorphous Internet
- Domestic connectivity, which allows you to connect to the domestic gateway.

There are three ways an ISP can connect to the Internet cloud, which includes VSNL/DoT, STPI or through a private operator. STPI is a semi-government organization that was authorized to sell international gateway services to companies involved in developing software for exports. It has now been permitted to sell international connectivity to ISPs and is presently providing this service in 10 cities and planning to increase its presence in other cities throughout India.

6.6 CODE OF CONDUCT FOR ISP

Preamble

- This Code of Conduct is open to voluntary acceptance by all members of the Internet Service Providers Association of India (ISPAI).
- Members of ISPAI agree that they will abide by this Code of Conduct in letter and spirit.
- Members of ISPAI understand that compliance with this Code of Conduct does not necessarily imply that they are acting within the law. Any reference in the Code of Conduct to lawfulness or unlawfulness relates solely to Indian Legal Framework.
- This Code of Conduct is issued by the Executive Council of ISPAI, which is the sole authority to amend it from time to time in accordance with rules and regulations of ISPAI.

Objective

- The aim of ISPAI Code of Conduct is to enunciate and maintain high standards of ethical and professional practices in the field of Internet Services.

Principles

- In seeking to achieve its objective, the ISPAI Code of Conduct is based on the following principles:

Technology neutral

Fair to all concerned

Protection of user's data

Responsibility for contents on the Internet rests with the relevant content provider.

Obligatory Practices

Obligations to Law

- ISPAI and its members have a responsibility to adhere to law and co-operate with 'Law Enforcement Agencies' acting within specified Indian Legal Framework.

- Members will not knowingly permit any User or fellow Member to engage in any illegal activity in terms of the provisions of Information Technology Act 2000, ISP Policy and any other such applicable legal framework.
- Members will follow and adhere to all jurisdictional laws pertaining to transaction reporting.
- Members, their services and promotional material will not encourage anything patently, which is in any way unlawful.

Obligations to the Public

- Members will deal fairly with fellow professionals and public, giving due respect to the rights and legitimate interests of others.
- Members will endeavour to support public service initiatives in harmony with the jurisdictions in which they provide their services.
- Members will ensure that their services and promotional material does not contain anything which may incite violence, cruelty or hatred on the basis of sexual discrimination, cast, creed or religion.
- Members shall ensure that minors are not registered by them for Internet services except with the explicit permission of their parents/guardian.

Obligations to own Profession

- Members will abide by all terms and conditions of the license agreement in letter and spirit for provision of internet services.
- Members shall be truthful in all promotional activities and publish such information which is devoid of inaccuracies, ambiguities, exaggerations or omissions about their operations, services and pricing to the customers and government / private agencies.
- Members will institute controls to detect and eliminate fraud and protect their data and the systems from internal and external breaches.
- Members will co-operate with each other in investigating and preventing the instances of hacking.
- Members will institute adequate control measures to prevent the unauthorized access to the resources of Internet services.
- Members shall ensure that that they explicitly bring to the notice of their customers, all terms and conditions for provision of their services, before such customers register with the member for their services.

Obligations to the Customers

- Members have a responsibility to make this Code of Conduct clear to all their clients as well as to their channel partners / distributors and indicate to them that any breach of the Code of Conduct and / or violation of law will result in cessation of services.
- Members will design and operate their services to afford customer's privacy and confidentiality and will post their confidentiality practices and procedures appropriately.

- Members will follow best industry practices in offering latest Customers Filtering Software and advise them regarding any software tools, which they can use to protect their confidential data and privacy.
- Members will follow the best industry practices in using Anti-Spamming Software, such that customers can elect to minimize the amount of spam sent to their e-mail account.
- Where Internet services involve collection of personal information such as telephone no., credit card details and addresses etc from the customers, it would be obligatory for Members to clarify to them the purpose for which such information will be used.

Complaints

- Since this Code of Conduct is open to voluntary acceptance by all members of ISPAI, the Executive Council considers it prudent not to institute any ‘complaint handling procedure’ at the initial stage. However, this situation may be reviewed subsequently.

Before any Internet Service Provider (ISP) can start operating, he/she needs bandwidth, which is the channel for global connectivity. Currently in India, bandwidth can be obtained from either VSNL or STPI (Software Technology Park India) or the DoT. The government has granted permission to private players for setting-up their own gateways. As per Satyam’s estimate this could cost anywhere between Rs. 90 crore to Rs. 110 crore.

The private gateway providers are responsible for connecting routers above 2 mbps with monitoring agencies like Intelligence Bureau and RAW. DoT would be responsible for issuing the security clearances. A committee comprising representatives from DoT, Department of Electronics, Ministry of Defence, Space and Home, National Informatics Centre and NASSCOM clears projects.

Under the new Internet Policy, ISPs were allowed to set up their own gateways, but the absence of any security guidelines precluded this, and they had to lease capacities from VSNL. Like VSNL, they would be allowed to lease surplus capacities to other ISPs.

The government has brought some relief to ISPs by reducing the rent they had to pay for a telephone line. ISPs will now have to pay the normal costs. In an earlier circular, it was notified that for every telephone line that an ISP took from DoT, it was supposed to pay an annual rental of Rs.15, 000, which is significantly higher than the rate for normal users.

6.7 ISP AS NEW MEDIA CENTRE

The ISP or Internet Service Provider can be viewed as a new media centre. It allows a number of people to interact around it (what experts call as community creation) and can exploit this crowd to get advertising and push e-commerce. There are two aspects of facilitating this interaction: (A) Up linking and (B) down linking

Down linking is transfer of data from the servers located elsewhere, to the one located where the user is. Up linking is the opposite. It is observed and proven that in case of Internet, up linking forms a very small part of the data transfer. Majority of

the transfer involves downloading from various servers, which are mostly located outside India. Compare this with a television, where the transfer only involves down linking from the satellite. There is no up linking at all.

Links to the subscriber can be provided in the following ways:

- **Dial-up Access**

The most common way to access the Internet from home is with a modem and a phone call to the ISP. The call to the ISP is through the regular MTNL or DoT lines. This option is best suited for small time users, students, etc. This is the most viable option for people using the Internet for 5-6 hours a day.

- **Leased Lines**

Leased lines are dedicated lines directly from the ISP to the subscriber. The speeds available are in the range of 9.6 kbps to 2 mbps. The efficiency of the leased line connection is 2-2.5 times better than the dial-up access. Usually corporate houses subscribe to this type of service. The cost is more than that of the dial up access.

- **ISDN**

ISDN network is a very fast, highly reliable medium that brings voice, data and video together on one digital line. The hardware cost for setting up ISDN services is higher. It has two channels, hence it can support up to two voice-grade signals per 'ISDN wire'.

6.8 EVOLUTION AND PRESENT STATUS OF AN ISP IN INDIA

Before the appearance of VSNL's Gateway Internet Access service (GIAS), the Internet in India was in the form of Educational Research Network (ERNET). However, it was not possible for many people to get access to it, as it was meant only for the educational and research communities. The ERNET was a joint undertaking of the Department of Electronics (DOE) of the Government of India, and the United Nations Development Program (UNDP), which provides technical assistance to developing nations. ERNET was one of the most successful operations that UNDP has funded.

All major nodes of ERNET are connected to each other using 9,600 bps leased lines. These lines are being upgraded to 64 kbps links. Over 200 academic and R&D groups exchange e-mail with each other using ERNET. Over 8,000 scientists and technologists have access to ERNET facilities. International access is provided over a 64 kbps leased line, from NCST, Mumbai, to USA.

Videsh Sanchar Nigam Limited (VSNL) is the dominant Internet Service Provider in India. On August 15, 1995, Videsh Sanchar Nigam Limited (VSNL) – India's international trunk carrier and Gateway to the world – launched the Gateway Internet Access Service (GIAS) for the first time on commercial basis. VSNL has set up Internet nodes. Each GIAS Internet node is connected to the Internet via high speed circuits from one of the following service providers, MCI (USA), KDD (Japan), Telecom Italia, and TELEGLOBE. A total of approximately 40 mbps bandwidth is available for Internet data transmission in and out of India. VSNL in coordination with DoT has launched Internet services in many other cities. Users in

remote areas of India can reach GIAS via I-NET. The Department of Telecommunication (DoT) has a widespread network in India called the I-NET, which has direct connectivity to each GIAS node.

At present, there are 67.3 lakh registered Internet users throughout India. Similarly many ISPs are providing services, like Sify, Satyam and Spectra net.

6.9 BUSINESS MODEL FOR ISPs IN INDIA

There are more surfers in India than there are on-line customers for any product or service. The country's 3.40 lakh customers of ISPs, whose ranks are swelling by 200 per cent per annum, will spend more than Rs. 240 crore in 1999 simply to stay linked to the Net. That's 1.83 times the amount they are expected to spend buying products in the country's market space this year.

The product segments that an ISP can cater to are mainly two: (1) basic services and (2) value added services.

For an ISP, cash flow may not be a problem because revenues are collected upfront, but a certain critical mass of customers is essential, before the ISP can start making money. Unlike landline services, an ISP's costs are not ramped up with an increase in its customer-base. On the contrary, as much as 60 per cent of its initial total costs, (which could average Rs. 15 crore), could be and on setting up the InfoTech infrastructure for managing the service, and on buying bandwidth from the VSNL, which still has a monopoly on gateways. The requirement of bandwidth will depend on the type of applications the ISP intends to provide to its customers. (Ref. Table 2)

Table 2: Bandwidth requirements for different applications

Minimum Bandwidth per user, kbps	Name of Application	Type of Technology
155,000	Virtual reality, medical imaging	ATM
3,000	Video-conferencing, Multimedia	T3/E3
1,500	Sample video, Digital voice	T1/E1
128	Browsing	ISDN, Frame relay
28.8	IP, E-mail, File Transfer	New modem
19.2	Telnet	Old modem
4.8	Paging	Wireless WAN

However providing connectivity alone will not be enough. The ISPs will have to provide value added services to the customers. Two possible revenue strategies should be considered for this: one, use these value-additions to attract surfer traffic much the way any content-provider does-and then sell those to advertisers. Two, market them to the captive customer-base of ISP services, charging higher prices. Thus, while Satyam-online is offering additional user features like horoscopes, greeting-card services, free classifieds et al, Mantra-online has added corporate services like setting up intranets, extranets, and virtual private networks.

6.10 VALUE ADDED SERVICES

- **Web Hosting**

The Internet has unleashed a number of business opportunities, the basic of which is what is known as web hosting. Web hosting ISPs will provide the servers where the sites are hosted, for example, when you type www.hotline.com, your request goes to the server on which the site is residing. Some of the smaller entities cannot afford to buy their own servers, so they lease server space. This has resulted in the web hosting opportunity.

- **Virtual Private Network**

A virtual private network is a group of computer systems, typically connected to a private network (a network built and maintained by an organization solely for its own use) with limited public-network access that communicates “securely” over a public network. VPNs may exist between an individual machine and a private network (client-to-server) or a remote LAN and a private network (server-to-server). Security features differ from product to product, but most security experts agree that VPNs include encryption, strong authentication of remote users or hosts, and mechanisms for hiding or masking information about the private network topology from potential attackers on the public network. As networks get more and more complicated, many corporate may just want to outsource the entire service to a provider who offers managed data network services. That means creating and running the whole network – including Intranet, extranet and VPN – for a corporate client.

Usages of VPN

To access the protected network or office network from a public network, users need to send a request by VPN client to the external interface of the office/protected network. The user id and password of the user must be configured on the external interface “normally router” of the protected network. If the user id and the credential match then a secure network pipe established between the user system and destination network, which allows the user to access the total network or to a pre-defined destination.

Voice Over Internet

Internet telephony is the new technology where phone calls can be made to any part of the world through the Internet. There are various web sites offering Net Telephony services like Net2phone (www.Net2Phone.com), Vocaltec (www.vocaltec.com), NetMeeting (www.netmeeting.com). The voice quality is not comparable to that of the normal telephone call. According to a survey, it has been found that price is a more favoured feature than quality. Currently, Internet telephony is banned in India and if detected an ISP can lose its operating license.

- **E-Mail**

Incoming e-mail is received by the ISP and stored in a mailbox on a computer known as a MX “message exchanger” server. Two kind of protocol/services configured on mail server knows as POP “Post office protocol” and SMTP “simple message transport protocol”. POP3 is the protocol by which message download to a mailbox on the user computer, when he logs in and runs his mail software. Outgoing e-mail is essentially the same process by SMTP . Quality expectations are up and

user fees are down. The result is that low budget/low volume/low quality/low cost systems can no longer expect to find a profitable initial niche in most markets.

- **Cable Internet**

A cable modem is a device that allows high-speed data access (such as Internet) in a cable TV network. It will have two connections, one to the cable wall outlet and the other to a computer. Cable modem speeds vary depending on the cable modem system, cable network architecture and traffic load. An asymmetric cable modem is most common. The downstream channel has a much higher bandwidth allocation (faster data rate) than the upstream, primarily because Internet applications tend to be asymmetric in nature.

Please answer the following Self Assessment Question.

Self Assessment Question 3	<i>Spend 3 Min.</i>
What is the value added services provided by ISP in India? Elaborate.	
.....	
.....	
.....	
.....	
.....	

6.11 MONETARY CONCEPTS OF AN ISPs

For an ISP, the major cost items are infrastructure and access costs. A significant proportion of the costs in the Internet service business are fixed in nature and independent of the level of usage of the network. The cost components of the infrastructure network primarily includes hardware, software, networking, telecom, backbone and costs of up gradation. These costs depend on the category of ISP licence. There are three categories of ISP licences. A national level player is defined as category A, while category B includes cities of Ahmedabad, Bangalore, Hyderabad and Pune in addition to four metros and 20 territorial telecom circles. Category C ISPs are local in nature, limited to a secondary switching area of the DoT.

The basic hardware includes servers, peripherals, personal computers and backup storage devices. On the software side, an ISP requires software for billing, server maintenance, security and network management. The investments in hardware at each Point of Presence (PoP) could vary between Rs. 3-4 mn. For other categories, costs could be lower at Rs. 1.5mn. This will depend on the subscriber base.

The other important attribute of the cost is access. It has to focus on the ratio between the numbers of subscribers per port. Globally, the norm is placed at 1:8. This means that the number of subscribers per port is 8. In India, it is 1:10, at times higher at 1:15.

The capital cost of an ISP is the cost of establishing distribution infrastructure through a network of PoPs. A PoP is an ISP's node, with necessary infrastructure

to which a subscriber connects locally (through any of the various access mechanisms such as local dial-up, leased lines, ISDN lines or cable modem) for accessing the Internet. The number of locations in which an ISP would choose to establish a PoP, is likely to be determined by the costs of connecting the PoP to a node of the international gateway provider and the expected revenues from each PoP. A PoP would be connected to the gateway node through leased telecommunication lines. An ISP would also need to invest in hardware, software and telecommunication infrastructure, to be able to provide value-added services.

The Internet access charges are not very important whereas the hike in the local call charges is an important issue. It is a hidden cost and will matter in the long run when people start accessing the Net more and more as they will pay higher telephone bills. It will also allow providers like MTNL and VSNL to continue their monopoly as they have their own networks. They can even afford not to charge anything for Internet access.

The Internet market can be demarcated into 2 segments – commercial and retail. With price wars threatening to break out (given stiff competition), players will find it difficult to make money. For an ISP to be successful, it should have a proper infrastructure. Customer acquisition should be the first priority for ISPs.

Please answer the following Self Assessment Question.

Self Assessment Question 4	<i>Spend 3 Min.</i>
What are the main cost items for an ISP?	
.....	
.....	
.....	
.....	
.....	

6.12 EVALUATION OF PERFORMANCE OF ISPs

In order to provide a basis for comparison of different Indian ISPs, a model for evaluation has been proposed. This is primarily based on models used for evaluating the ISPs in the US also. It involves assessment of the following 4 core issues:

- Network design
- Content hosting and applications
- Customer service and pricing
- Performance guarantees

Let us now look at each of these in detail:

Network design:

This section looks at various design parameters of the ISP network including the following important ones:

- Geographic coverage — number of cities covered within own country and whether other Asian countries are included.
- Whether direct links to other Asian countries are provided? This would permit the ISPs to switch traffic straight to the destination instead of routing it via the US. It avoids dealing with congestion on the US backbone and leads to a big reduction in the number of router hops.
- Whether there are any connections to network access points and private peering arrangements.
- What choice of access methods has been used — dial-up modems, leased lines, ISDN, frame relay or ATM.
- Whether redundant links have been provided to every point-of-presence

Content hosting and applications:

This part looks at the infrastructural aspects of the ISPs and addresses the following key issues:

- What kind of servers are being used — shared, dedicated or collocated?
- How is the database hosting done
- Whether ISPs will help customers to build internets/extranets?
- What security services are provided by the ISP in terms of consultancy, systems integration, software applications, firewalls and authentication servers?

Customer service / pricing:

Customer service and pricing are key parameters for attracting and retaining customers as the customer base available is itself very low. The customer aspects involve:

- Cost of access
- Whether 24-hour customer service is provided?
- Whether a web-based interface has been provided for reporting and /or trouble shooting?
- Whether network maps and performance reports are made available to customers?
- Whether there are any standard billing formats in use?

Performance Guarantees:

Performance Guarantee has to maintain as per the term of contract, as far as Quality of Service (QoS) is concerned. These are generally:

- Speed

- Download and Upload capacity
- Free Space provision

6.13 LIABILITY OF WEB SITE OWNER/ISPs

A company could also be held liable as a Web site host/owner or as an ISP for any defamatory statement published on its site. If a hacker breaks into a Web site and publishes a defamatory statement, the Web site host or ISP could be held liable. However, if a defendant can show that the publication of the defamatory matter was not intentional, he/she can escape liability proceedings.

The question that will have to be decided by courts is whether a Web site host can be equated to a distributor of published matter such as a library or whether it should simply be equated to an institution such as a telephone firm, which is a mere passive conduit for the information which it carries and over which it has no effective control.

ISPs and Web site hosts or owners must, therefore, take care to control, as far as possible, the information published on their Web sites. Factors that could possibly be taken into account in determining whether an ISP or a Web site host/owner have exercised reasonable care would be:

- The nature and purpose of the Web site containing the defamatory material and the relationship of the defendant thereto, that is, whether the defendant is a bulletin board operator or an ISP or simply an organization controlling its own Web site;
- Whether the monitoring system is proportionate to the size of the site;
- The amount and characteristics of information flowing through the site;
- The characteristics of the site users;
- Whether or not the site attracted repeat offenders and, if so, why was the Web site then not removed;
- Whether defamatory material was removed immediately upon request by the person being defamed;
- Measures that would assist in reducing the exposure of an ISP or a Web site host/owner to liability for defamation include;
- Posting of notices, warning potential users of the site not to put libelious material on the site;
- A periodic monitoring of Web sites and bulletin boards with a view to doing away with any problematic material;
 - The introduction of a system to facilitate speedy publication of apologies in respect of any statements published on the site which are found to contain libelious allegations, and;
- Making access to the Web site conditional upon the provision by any user to provide his/her name, address and other specified identifying data so that the author of any defamatory statement can later be easily traced and disclosed to a potential defendant if a claim for defamation is threatened.

6.14 SUMMARY

- Internet has no owner yet. It has no central authority to manage or control it. That's why it is called Unsecured Channel.
- India is a member country of ICANN, a private sector non profit? dedicated to preserving the operational stability of the Internet.
- ISPs (Internet Service Providers) are the service providers for Internet access. There are two types of ISPs. One is national ISPs and others are local ISPs.
- Presently broadband service is in huge demand .It means speed must be minimum 256 KBPS.
- Links to the subscriber can be provided in the following ways:
 - Dial –up Access,
 - leased Line, and
 - ISDN.
- Value added services are: Web Hosting, VPN, Internet Telephony and E-mail.
- Performance of ISPs can be evaluated by network design, content hosting and application, Customer Service and pricing and performance guarantee.
- Web Site owner/ISPs are also liable for any defamatory statement published on its site.

6.15 TERMINAL QUESTIONS

- 1) What do you mean by an ISP? Describe its role and liability?
- 2) How will you evaluate the performance of an ISP?
- 3) What are the main problems in Domain Name System?

6.16 ANSWERS AND HINTS

Self Assessment Questions

- 1) Internets possess a decentralized status as there is no authority to control over cyberspace. Yes, ICANN does favour United States.
- 2) Internet Service Provider.
- 3) Web hosting, Virtual Private Network, Voice over Internet, E-mail, Cable Intranet
- 4) The major cost items for an Internet Service Provider are infrastructure and access cost.

Terminal Questions

- 1) Refer to section 6.4, 6.5 and 6.13 of the unit.
- 2) Refer to section 6.12 of the unit.
- 3) Refer to section 6.3.1 of the unit.

Apart from the above, please follow other reference books for in-depth knowledge.

6.17 REFERENCES AND SUGGESTED READINGS

1. Best4sites.net. 16 feb. 2007 <<http://www.best4sites.net>>.
2. ISPAI - ISP Association of India. 16 Feb. 2006 <<http://www.ispai.in>>.
3. Oemji. 2 Mar. 2007 <<http://www.Oemji.com>>.
4. Vsnl. 3 Mar. 2007 <<http://www.vsnl.in>>.