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A REVIEW OF GOVERNMENT POLICY TOWARDS INTERNET SERVICE PROVIDERS IN INDIA

Prof. M.P. Gupta

Abstract

With the opening up of Internet Service Provider (ISP) segment, the industry is changing at a very fast pace. Increase in the number of players is leading to increase in competition among players. In this study, various government policies affecting ISP industry in India are being reviewed with the aim to understand: what changes are likely to occur? In what way companies will get affected? What will be the new sources of revenue? How will these revenues shape business models of ISPs in India? how do these changes benefit the customer? The study covers the policy, IT bill, Internet telephony, budget and ISP Policy , international gateways and role of Telecom Regulatory Authority of India (TRAI).

Keywords : Internet Service Provider (ISP) and Government Policy

INTRODUCTION

The Internet revolution has marked the upcoming of new industry as a whole called Internet service provider (ISP) industry. When it was started in 1995, Videsh Sanchar Nigam Limited (VSNL) was the lone player. ISP industry was protected and no private player could enter this market. In year 1998, the ISP market was deregulated and a number of private ISPs entered the market. Today post deregulation Department of Telecommunications (DoT) has issued license to 225 (as on 2nd February 2000) players out of which over 70 are active players providing services across country. Their optimism confirms their faith in the vast market potential of this segment. As per the published data in the Economic Times (19th June 2000), the private ISPs across the country have taken over the public sector giants VSNL, MTNL and DoT, in terms of their cumulative internet subscriber base. According to the data available till mid June, private ISPs have surpassed their counterparts with a comfortable margin of over 1.5 Lakh, and their total subscriber base has crossed 7 lakh. The total subscriber base for the country thus stands at 12 lakh or 1.2 million. For a particular access fee, the service provider provides installation software, a user name and password and access telephone number. In addition to serving individuals, ISPs also serve large companies, providing a direct connection from the company's network to the Internet. ISPs themselves are connected to one another. There are three categories of ISPs : National ISPs, Regional / local ISPs and Cable ISPs. National ISPs operate points of presence throughout the country. One category of national ISPs own the net work backbone and lease the international connectivity while the other category of players lease the network and the international connectivity form other ISPs. Regional and local ISPs operate in the smaller towns or particular states. These ISPs serve both the business and consumer segments usually within a geographic region. Cable ISPs, yet to come in a big way, will provide Internet access through cable TV's network media. They have the advantage of providing high speed access (upto 2 MBPS) as compared with dial up lines (33.6 KBPS) and 24-hour connectivity apart from other benefits.

The subscriber base of Internet users in India is increasing exponentially and according to survey by IDC (India) as shown in figure -1, the Internet subscriber base in India is expected to cross the one million mark by the end of year 2001 and 7.5 million by the end of 2003. The survey also says that, there were close to half a million Internet subscribers at the end of 1999.

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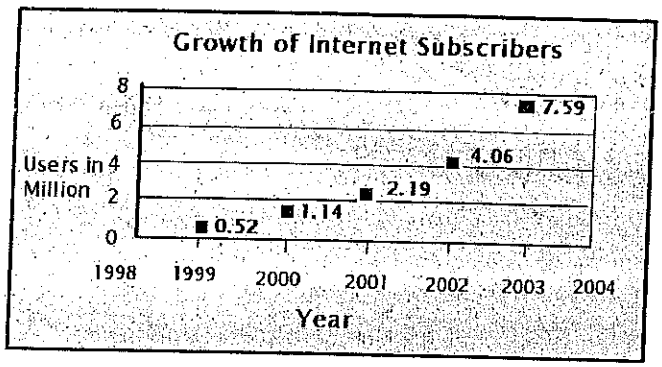

Figure 1 : Growth of Internet Users

Source IDC (India) Ltd. Year2000

As per forecast, the Internet subscriber base in the country would grow at a CAGR of 95% during the years 1999 to 2003. The Internet access market is segmented into three divisions namely: Home segment, small office home office segment (SOHO) and Commercial segment. Amongst segments, the commercial segment (comprising of small/ medium/ large business, government and education & research segments) would witness a CAGR of 57% whereas the home segment would grow at a whooping 163%. It is assumed that during the forecast period, the Indian economy would continue to grow at its current pace. During the forecast period, share of home Internet subscribers is expected to grow from 20% in 1999 to 67% by end of 2003. By end 2001, it is expected that there would be as may Internet subscribers in homes as in the commercial segment. The break-up of Internet subscribers by commercial and home segment is represented in the figure 2

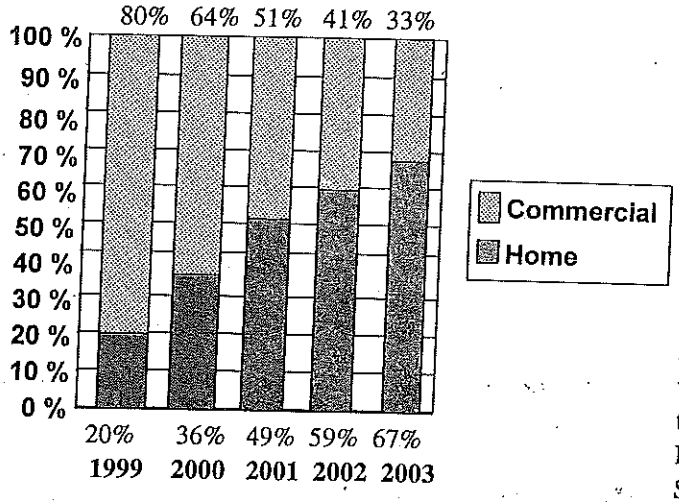

Figure 2 : Break up of Internet Subscribers

Source: IDC (India) Ltd. Year 2000

Factors Effecting Growth

Following factors account for this dramatic growth projection of Internet subscribers in the home segment :

* *Low Cost PCs* - Drop in the prices of multimedia PCs has contributed to the growth of PC shipments in home segment. An increase in PC installed base in home would have a direct impact on the home Internet subscriber base in a positive way.
* *Access through cable* - Internet access through cable is available in select areas as of now. However in the near future it expects a healthy growth. IDC (India) expects that by the end of 2001, Internet access through cable would be available in most of the cities/ towns having population of more than one million.
* *Cheaper cable modems* - An expected decline in cable modem prices by 30% per year in the next two years would also help in the adoption of Internet access through cable modems in homes as well as small and medium business establishment.
* *Indian content on the Internet* - It is also expected that in the coming two years, sufficient and relevant Indian content would be available to fuel the demand for home Internet subscriptions. Content related to education, entertainment and kids would be the one drawing most interest from the home segment.

Value added services provided by ISP's

Sometime back, the ISPs were at each other's neck in the form of a price war. However, the focus now seems to have shifted towards offering more innovative features and services. While, all service providers in general target the home users, small office home offices and corporate, their services and prices vary. ISP are offering following services-

Web Hosting

Web hosting is a big revenue source for ISPs . Ordinarily if a company was to get into web hosting business, it will need to take leased line from an ISP to be able to host a website. In this regard ISPs take leverage of existing bandwidth they have and provide web-hosting services. Web hosting ISPs provide the servers where the web sites can be hosted. Some of the smaller entities cannot afford to buy their own servers, so they lease server space. Satyam Infoway who is into Internet access providing, advertising on the net, value added services, E-commerce etc claims that their maximum

revenue comes from web hosting services as of now. However, that may change in the future.

Virtual Private Network (VPN)

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 mechanism for hiding or masking information about the private network topology from potential attackers on the public network. As networks get increasingly complicated, many corporates just outsource the entire service from a provider who offers managed data network services.

Voice over Internet

Internet telephony is the new technology where telephone calls can be made in 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**, Net Meeting **www.netmeeting.com**. The voice quality however, is not comparable to that of normal telephone call. According to a survey, it has been found that price is a more favoured feature than quality. Internet telephony is banned in India. If detected as ISP can lose its operating license. However, there is fresh initiative to allow internet telephony if the draft Information, Communication and Entertainment (ICE) Act of India 2000 becomes a reality.

E-mail

E-mail is one of the best applications of Internet technology. Many users of Internet used Internet only for the sake of sending and receiving emails and not browsing. E-mail has become more of a commodity than a revenue generator. However, its services to the Internet subscriber, which often come free of cost, are viewed as an important value added service.

A Review of Government policies

The Prime Minister of India, formed an IT task force in 1998, which invited suggestions and recommendations from various segments of the industry. Out of the 108 odd proposals made by IT task force, it recommended immediate de-regulation of Internet services, which was subsequently implemented. On November 6 1998, cyberspace service was opened up under the gaze of Prime Minister and that meant end of VSNL's monopoly. Here, various government policies affecting ISP industry are being reviewed with the aim to understand issues such as: What changes are likely to occur? In what way companies will get affected? What will be the new sources of revenue? How will these revenues shape business models of ISPs in India? How do these changes benefit the customer? The study covers the ISP policy, I.T. bill, internet telephony, budget 2000, international gateways and role of TRAI.

The ISP Policy

It was in September 1997, that the Government of India (GOI) formed a committee headed by Dr.Bimal Jalan, the then Member-secretary, Planning Commission, to study and

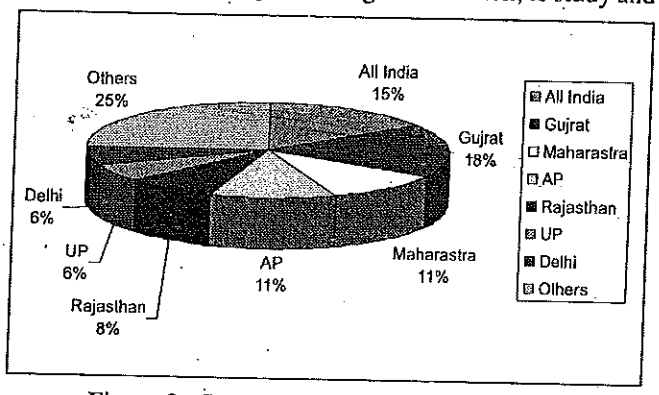

Figure 3 State wise License issued to ISPs

Source: Dataquest, 31 January'2000

recommend measures for private sector participation in providing Internet services and related matters. Subsequently the Govt.of India announced major policy decision on the subject. However the policy guidelines were withdrawn because of tussle between DOT and TRAI. Though grossly inadequate, the policy draft set the motion in the right direction, making the prospective players hopeful. From then onwards, it was perceived as just a matter of time before Internet services would be opened for the private sector. The setting of National IT Task Force and its subsequent recommendations were also great milestones. Then came the Prime Minister's Council on Trade and Industry in which the different subject groups were headed by the Captains from the Industry for the first time. In Telecom, the group on Telecommunication was set up with the specific task of formulating a Telecom policy that is in sync with the changing realities. Finally on recommendations of DOT, the government came up with

New Telecom Policy (NTP99) and also an ISP policy on November 6, 1998.

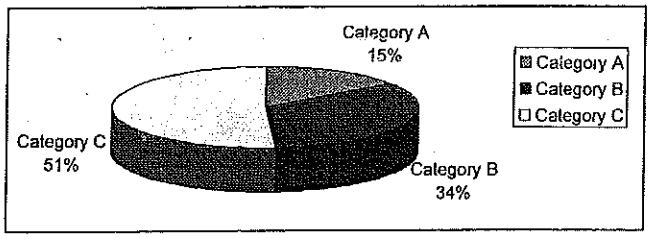

Figure 4 Categorywise licenses issued to ISPs

The ISP policy specified guidelines for the issue of ISP licenses in the three categories 'A', 'B', 'C' (Figure 4). With that a mad rush began, both for the small and the big companies alike to become ISPs. By now, more than 225 licenses have been issued in all the categories and already over 62 ISPs have started their operations (Figure 3). DOT finally announced the policy for private ISPs on January 15, 1999. Since then there has been no looking back. The Government has also permitted foreign equity to the extent of 49%.

The salient points of the ISP policy are analyzed as follows:-

i) Eligibility

* Invitation to apply for ISP license is open to any Indian Registered Company.
* There are no requirements if the applicant company is having prior experience in Information Technology or Telecommunication services.

ii) Service area

The country has been divided into separate service areas in three categories as mentioned below:

a) *Category "A"* - this covers the territorial jurisdiction of the Union of India except in specified areas that may be notified for exclusion from time to time.

b) *Category "B"* - Any of the 20 territorial Telecom Circles, four metro telephone districts of Delhi, Mumbai, Calcutta and Chennai; and four major telephone districts of Ahmedabad, Bangalore, Hyderabad and Pune are category `B" service areas.

c) *Category "C"* - Any Secondary Switching Area (SSA) of DOT with geographical boundaries as on 01.04.1998, will form a separate category "C".

Service Area with the exception of each of the 4 Metro telephone districts of Delhi, Mumbai, Calcutta and Chennai and 4 major telephone districts of Ahmedabad, Bangalore, Hyderabad and Pune of the DOT/MTNL with geographical boundaries as on 1.4.98, will form a separate category'B' service area.

* Applicants are required to submit separate applications for each service area.
* The ISP will be required to set up his nodes i.e. routes/ servers within the geographical limit of the service area.
* An applicant company may be granted any number of licenses.
* There shall be no limit on number of licenses that can be granted in a particular service area.
* The leased line subscribers shall be from within the service area, however, the ISP can offer dial-up services from any part of the country.
* Existing E-mail and VSAT service licencees may also obtain separate ISP license for any number of the above mentioned service areas subject to fulfillment of the eligibility criteria.

iii) Validity of the application:

Each proposal shall be valid for a minimum period of 6 months from the date of application.

iv) Processing fee:

The proposer shall enclose a DD for Rs. 5,000/- in favor of Pay & Accounts Officer, Headquarters, Department of Telecommunications, Sanchar Bhawan, New Delhi-110001 in respect of each service area, separately with each application towards processing fee. The processing fee is not refundable.

v) Issue of Licence:

Separate licenses will be issued for each service area proposed, under relevant provisions of Indian Telegraph Act, 1885, Indian Wireless Telegraphic Act, 1933 and TRAI Act, 1997 and the Licensee shall abide by the provisions of the said acts and the rules made there under.

vi) Inter-connection with other Net works:

Direct inter connectivity between two separately licensed ISPs shall be permitted. Authorised Public/Government Organisations will be allowed to provide Internet Gateway Access including International leased circuit directly without going through VSNL Gateways. Private ISPs are allowed to

provide such International Gateways after obtaining security clearance for which the interface of private ISPs shall only be with the telecom authority. The licensee may obtain transmission link on lease from DOT, licensed basic service operators, railways, State Electricity Boards, National Power Grid Co-operation or any other operator specially authorized to lease such lines to the ISPs. The licensee may also establish its own transmission links within its service area for carrying traffic originated and terminated by his subscribers, provided that such capacities are not available from any other authorized agencies and subject to permission of telecom authorities.

An ISP may provide Internet service to any V-SAT subscriber (who could be served by a shared hub commercial service provider or a captive private V-SAT Network), if the V-SAT is located within the service area of the ISP. For this purpose, a direct inter-connection of V-SAT or V-SAT Hub through leased line obtained by an authorized provider to the ISPs node/server shall be permitted only for the flow of Internet traffic. The existing license for closed users group domestic 64KV PS Data Network via INSAT Satellite system does not grant long distance carrier right to the licensee. The ISP shall provide to the telecom authority a monthly statement of V-SAT subscribers served with their locations and detail of leased line inter-connection with the V-SAT Hub. The V-SAT Hub, however, need not be located in the service area of the ISP. Resources required for inter-connecting the licensees network to the network of upstream internet access providers (Dot/.VSNL etc.) or any other service provider licensed by authority including time frame for provision of the same, will be mutually agreed between the parties concerned. The resources may refer to include but not limited to physical junction, PCM derived channels, private wires, leased lines, data circuits and other network elements. The licensee shall apply for and obtain network resources from the concerned parties. The tariff of such network is outside the scope of this licensed agreement. Licenser will have no obligation for such resources from the other parties.

vii) Extension of License. The validity of licence is nitially for a period of 15 years unless otherwise erminated.

iii) License fee and schedule of payments:

The telecom authority has decided to waive the license fee for a period upto 31.10.2003. For those ISPs also who obtained licenses prior to 1.11.2003, a nominal license fee of Rs.1/- per annum shall become payable from 1.11.2003.

* For access and other charges including MODEM charges payable to DOT/MTNL/VSNL/other service provider at the prescribed rate, bills will be raised directly by the DOT/MTNL/VSNL/other service provider and shall be a matter between the licensee and such service provider(s).

ix) *Performance Bank Guarantee:* A performance Bank Guarantee of Rs. 2 Crores for a category (A) Service Area, Rs. 20.00 lakhs for each category (B), service area and Rs. 3.00 lakhs for each category (C) service area valid for 2 years has to be submitted along with the applications for each service area.

x) *Tariff:* The ISPs are free to fix their own tariff.

xi) Miscellaneous:

* Financial Institutions and Banks will be asked to encourage new entrants. The license guidelines also suggests and earnest Money deposit of Rs. 20.00 lakh for Class A Cities, Rs. 5.00 lakh for Class B Cities and Rs. 1.00 lakh for all class C Cities. The ISP will have to provide financial guarantees of Rs. 15.00 lakh each for Class A Cities, Rs. 20.00 lakh each for class B Cities and Rs. 2.00 lakh each for Class C cities. Performance guarantees for similar cities are to be pegged at Rs. 25.00 lakhs, Rs. 10.00 lakh and Rs. 1.00 lakh.
* Cyber Laws will soon be codified which will bring the country in tune with the realities of the digital age.
* Foreign equity participation of upto 49% in an ISP is permitted.

THE IT Bill:

Now, this much awaited cyber law has been passed during the year 2000 Summer Parliament Session. It plays an important role in maintaining the sentiments of ISPs, as well as the so called dot.com, entrepreneurs. It is designed to achieve the following:-

* Provide legal recognition to electronic documents and define the time and place of their exchange so that they can be admitted as evidence in law. Once Government considers electronic documents as legal it will open a plethora of opportunities for companies to gain revenues from E-Commerce channels.
* Define the procedure for affixing "Digital Signatures" to authenticate electronic documents, provide for non-repudiation of contracts, besides ensuring data integrity and confidentiality in storage and transmission of data.

* Define "Cyber crimes" and suggest penalties and punishments.
* Set up the required mechanism to administer speedy justice in cyber crimes.

At the International level, first initiative came from UN Commission International Trade Law (UNCITRAL) in the form of model law on E-commerce in December, 1996, which has become the basis for the adoption of cyber laws by individual countries. It was, then, recognized that the advent of E-commerce and the use of digital medium as an alternative to the physical market place had created some novel legal issues where, there were no clear answers. Many countries are working out one or the other part of the law. Countries that started early were USA, Germany, Malaysia and Singapore. The major concerns are in the categories of contracts , IPR, customs and taxes, privacy, content and liabilities. Other issues also need attention related to access, telecom policy, technical standards, cyber crime restriction on type of information transmitted, control over standard developments, licensing requirements, among others. Serious re-looking at the various existing rules and regulations and rates of service providers is necessary before the drafting of any cyber law. India took timely initiative and prepared two drafts DoE's IT Bill, 1998 and Commerce Ministries E-Commerce Act, 1998, which has taken the help of 3 foreign law firm and drafted on the lines of Malaysian and Singaporean Law. Though the IT Bill 1998 was cleared by the Parliament, the Law is yet to be enforced. However, there has been a remarkable increase in the trade using E-Commerce. This probably is owing to the fact that the users are willing to take on some risk to reap the first mover advantage and to be ready to go with full force once such laws are in place. Also the huge advantages for using E-Commerce have probably helped to induce people to trade through this medium. The issues of concern for cyber laws can be categorized in three groups namely:legal, taxation and ethical.

LEGAL ISSUES:

* *Digital signatures:* As of now, the Govt.of India does not recognize digital signatures. Digital signature is an electronic form of ensuring authentication. Herein, the contents are encoded using the "Key". This will be unique for different users and will identify/authenticate the content to be from identified users. Digital signatures will be issued by the third party, which will do a thorough check on the user before issuing the same. Therefore, in the future, using digital signature will authenticate all electronic document. These will be upholding in the court of law once the Government recognize this form of electronic signature.
* *Cryptography:* This is the technique of coding (encryption) of materials to be transferred on the network and it's decoding (decryption) by the designated recipient. This will ensure that the material sent on the network is not accessed by any un-authorized person. Government of India (GOI) does not permit transmission of encrypted signals on it's network. Also USA does not allow encryption technology, which uses more than 56 bit key, for export to other countries. Once law regarding encryption is in place, extending of encryption will be possible. Another issue is that of the misuse of encryption technology by terrorists to transmit their messages. So, all these issues and their implications have to be studied. Although, many technologies like SET + SSL are there to enable encryption.
* *Intellectual Property Rights:* This is one of the important issues, as far as, distribution of content through Internet is concerned. This includes issues like trade marks, copy rights etc.. But what is of serious concern is the copy right issues of multimedia content on the net. This further raises the questions of piracy of copyrights material available on the net and it's misuse. Right now, lots of guidelines are available and formulated by WIPRO (World Intellectual Property Rights Organization); though these do not cover the content on the Internet, governments are working towards evolving a consensus to take care of such issues through WTO. This would enable the prosecution of defaulters.
* *Security:* Right now the state of affairs is such that network 'hackers' cannot be prosecuted in the absence of any cyber laws. This poses serious threat to the security of the network. Many technologies are available like, firewalls, virtual private network, encryption, SSL etc. to ensure security of the network. However, in absence of any deterrents in terms of legal prosecution, these networks are susceptible to attack by hackers and vulnerability of the organizational data and the content is very high.
* *Computer crime and abuse:* This is one of the burning issues but nothing can be done about it unless there are laws in place to prosecute perpetrators of such crime like hacking, sniffing data, unauthorized access etc.

Payment Issue: This is something, which is a major

stumbling block in large-scale proliferation of business to consumer e-commerce. There are no laws in place to check monetary frauds on the Internet. So people are unwilling to make monetary transactions through the net. There are ways of using a third party which issues digital certificates, to carry out such transactions on authentication, but there is no safeguard against a fraud on this account

Taxation Issues.

* *Personal:* Right now there are no laws to tax income generated by a person through the net; and there are no ways to keep a track of such income generated.
* *Residence:* Since there are no Cyber tax laws, a person can show script of funds through internet at a place where tax is low, thereby enabling lower tax and liability cause losses to the concerned government.
* *E-commerce:* When a trade is carried out through the net, the sale, purchase and delivery may be carried out at three different places. This makes sales tax related issues very complicated and their interpretation can differ for different people. So a law has to be framed which lays down the guidelines for taxing the items which are sold through the net.
* *Tax on goods and services:* Peculiarity of E-commerce is such that goods may be produced at one place and sold at the other. Therefore, the issue arises as to where is that does the tax become applicable. Also goods & services which can be delivered though the internet pose another problem for taxation i.e. Whether tax should be applicable at place where these goods and services are received or at the point of origin of these goods.
* *Permanent Establishment:* For a virtual firm, since there is no brick or mortar, it is very difficult to establish its physical location. Therefore, it is difficult to determine how the firm is to be taxed especially since the firm is located at one place and provides services at the other.

Ethical Issues

* *Privacy:* This issues assumes importance because the consumers pass on lot of personal data to the firms while trading though the net. Issue of concern is the extent to, which the firm collects and uses this data. Another issue is regarding the misuse/sale of this date to individual or firm another. It is the moral responsibility to the firm not to disclose this data to any other organization without prior permission of the consumer.
* *Content:* Pornographic, pirated, harmful and sensitive material etc. should not be allowed on the net. The extent to which these should be allowed, is a contentious issue since it is associated with issues such as freedom of expression etc.
* Hacking and unauthorized access to content available on the net
* Cyber squatting i.e. Replicating domain name and profiteering from these.
* Authentication and reliability of the content offered on the net.
* Misuse of IT facilities and software by employees of an organization for personal reasons.
* Unauthorized access to organizational data and using it for personal gains.

Issues Covered by IT Bill:

* Contracts
* IPRs
* Cushions & Taxes
* Privacy
* Content & Liabilities.
* E-Commerce.

Issues not covered by IT Bill

* *IPR:* Copyright liability of ISPs, BBSs and domain name issues.
* Encryption issue relating to import and export as well as domestic use
* Privacy and data protection issues: whether information provided to web site should be used for any other purpose. Also, policy regarding cookies is to be looked at.
* Technologies that can help in solving or minimizing legal issues.
* Whether to enforce advertising codes on net?
* Whether cash should be allowed or not?
* Cyber frauds
* Money laundering.

Issues covered in IT bill 1998, but requiring debate.

* *Evidential Issues:* Whether computer printouts and soft copies should be recognized as admissible evidence.
* *Jurisdiction:* Whether accessibility of web site in a particular region is sufficient for that region court to excuse jurisdiction.
* *Contractual Issues:* Whether it should include digital signatures.
* Liability of ISPs regarding providing Internet accesses.
* Network Security and Hacking Issues: future measure etc.

Internet Telephony

Other regulatory challenges plaguing the Indian Internet industry include the current ban on usage of VSNL accounts for Internet telephony. Internet telephony is a big market and promises customers very cheap long distance calls. The market has been seeing following trends:

* Telecommunications companies (telcos) in U.S. and Europe are recognizing the paradigm shift in voice and data communications, and are rapidly embracing Internet telephony.
* IDC predicts that the Internet telephony market will account for 12 billion minutes of voice traffic by the Year 2001 which is more than the entire volume of long distance calls made from India in one year. Unlike the rest of Asia (especially Singapore.), the Internet telephony market in India has been frozen.
* It does not seem that Indian users will be able to legally avail Internet telephony for next two or three years. But eventually it is bound to happen. Indian users will be able to make international calls over the Net for Rs. 12 a minute instead of the current Rs. 60 a minute.
* The most revolutionary aspect of India's Internet policy is letting ISPs do the last mile connect- and this could well be the source of litigation from basic service license holders who worry about voice over IP.
* Government telecom service provider Mahanagar Telephone Nigam Ltd, (MTNL) is considering waiving off local phone call charges for Internet users, or bundling calling charges for its own Internet service.
* The Government of India has set up a 12 member expert group on telecommunications, headed by deputy chairman of planning commission to make recommendations on the various issues.

As per the news published in the Economic Times (20 June 2000), Internet telephony, may finally be allowed if the draft Information, Communication and Entertainment (ICE) Act of India 2000 becomes a reality. At Present, transmission of voice over public internet is not permitted by the Government since it bypasses the exchanges set up by the Department of Telecom Services, Videsh Sanchar Nigam and Private basic telecom service providers, causing revenue loss to these entities. " Transmission of voice over public Internet is banned in many countries as it results in revenue loss to the basic telecom service providers. However, it is permitted in the US,"said Vinoo Goyal, director (development), VSNL. The lifting of the ban on Internet protocol telephony and voice over IP was one of the objectives of the Information, Communication and entertainment authority.

Interestingly, the move comes at a time when the department of telecom is opening up log-distance telephony to the private sector. DOT is planning to invite bids from prospective service providers for NLD (national long distance) licenses. However, if Internet telephony is allowed, the NLD licenses will not be lucrative as substantial traffic may be routed through the Net. The DTS, the existing NLD service provider, too will lose revenue. Goyal confirmed that VSNL would also lose revenue if Internet telephony was permitted, as the calls would then by pass VSNL gateways. At present, VSNL and the DTS are implementing IP technology to compress the voice on a pilot project basis. This will allow efficient use of bandwidth and the cost of telephone calls will be lower as compared to conventional telephony.

Budget and ISP Policy

Government's Taxation Policy does not remain consistent. As far as taxation is concerned, the government has kept no fee for ISP license. The excise duty on the network infrastructure equipment and their components has impact on the cost of ISP business. The excise duty on PC and its components has an impact of price of PCs, which affects PC penetration and indirectly the ISP business. However, the Budget 2000 has announced further incentives to the ISP industry. The existing duty of 41-60% on the networking equipment such as routers and RAS (remote access server) equipment has been brought to about 22%. Also, no service tax was imposed on ISPs as was feared by some speculators. However, the demand for recognizing ISP as an infrastructure industry did not come through.

As far as import is concerned, the government's import duty has impact on the costs of equipment imported by the ISPs. Some of the ISPs who are providing leased line connections on RF links have most of their equipment imported. The cable modems required for Internet over cable are at present imported and their landed cost is Rs 16000 - 18000 per modem. The reduction of import duty on this item is urgently required for making Internet over cable popular.

The worst part is that the taxation and import duty structure keeps on changing with every budget. In budget 2000, there was a reduction in customs duty for the ISPs project imports of networking equipment such as routers and RAS (remote access server) equipment.

International Gateways.

The ISP policy of government of India permits the ISPs to set up international gateway for Internet after obtaining the security clearance, for which the interface of the ISP's shall be with the telecom authority. The government has issued the following guidelines for ISP's to setup international gateways:-

* Only the ISP licensees can establish gateways.
* Gateways have to be within the service of the ISP.
* The transmission link between the ISP node/point of presence and the gateway they are not co-located, and is regulated as per the ISP licensee condition 7.2 i.e. the transmission link should be from DOT, licensed Basic Service Operators, Railways, State Electricity Board, National Powergrid Corporation or any other operator specially authorised to lease such links to ISP.
* The ISP has to apply to the Telecom Authority for bandwidth (transponder capacity in case of satellite access) giving them detailed requirement. (both short term and long term).
* Gateway will be used only for carrying Internet traffic.
* All the conditions of the ISP license would be applicable.
* The ISP should provide information about all ISP's that would be connected to the gateway. Any change should be intimated immediately to the Telecom Authority.
* The details of the topology should be provided including the details of how the monitoring equipment will be fitted. Any change in the topology should be informed to the Telecom Authority immediately.
* Details of types of services that are proposed to be provided should be given. Any chage in the same should be informed to the Telecom Authority immediately.
* The permission to set up Gateway is subject to other clearances/permissions that are required as per the laws of the land and it will be the responsibility of licensee/ company to obtain these clearances/permissions.
* International Gateways will not be permitted to be set up in security sensitive areas.
* The Internet nodes on places of security importance (as identified by security agencies) would be routed through VSNL only. Interconnection of these nodes with other nodes within the country directly is not permitted.
* The ISP should make available all the billing details of any subscriber on demand to the Telecom Authority.
* The Government (Licensor) reserves the right to make changes in the security considerations.

MRTP Act.

The ISPs who are also in the business of basic telephony like MTNL can even provide free Internet access if they start cross subsidizing their Internet business with basic telephony services. MRTP Act ensures that private ISPs who are not in the basic Telephony (at present hardly any, except for Bharti group) are not impacted by the companies like MTNL who can give free Internet access if they cross subsidize it with their telephony business.

Role of TRAI

Telecom Regulatory Authority of India (TRAI) is a regulatory body created by the act of Parliament to create a level playing field for the private operators against the DOT's policies and traffic structures. TRAI has played a fair role, by and large, up till now and has done enough to create a level playing field for the private operators. However, as elsewhere in the world, the monopolistic attitude of the government bodies (DOT in this case) has created continuous barriers for TRAI to act smoothly. Many of the TRAI's recommendations have been challenged in the court and are under subjudice. The special provisions of the TRAI Act 1997 govern the license, as modified from time to time. The special provisions of the TRAI Act 1997, which are of interest are as follows:

(1) Notwithstanding anything contained in the Indian Telegraph Act 1885, the functions of the authority are to:-

* Ensure technical compatibility and effective inter-connection between different service providers.
* Protect the interest of the consumers of telecommunication service.
* Monitor the quality of service and conduct the periodic survey of the same provided by the service providers.
* Inspect the equipment used in the network and recommend the type of equipment to be used by the service providers.

(ii) Where the authority considers it expedient to do so, it may, by order in writing:

* Call upon any service provider at any time to furnish in writing such information or explaination relating to its affairs as the authority may require; or
* Appoint one or more person to make an inquiry in relation to the affairs of any service provider; and
* Direct any of its officers or employees to inspect the books of account or other documents of any service provider.

As a part of its drive to make the Internet increasingly accessible to a much wider customer base, TRAI has slashed the tariff for Internet leased lines of 2 Mbps to Rs. 4.180 mn from Rs. 10mn. The company will stand to benefit from the increased volumes arising out of reduction in costs.

IMPACT OF THE GOVERNMENT POLICIES

The government policy is very liberal as far as imposing restrictions is concerned. Unlike the heavy license fees on the basic telephony service providers, the ISP licenses are free for 5 years and only a token fee of Re. 1 is charged per year. The number of the licenses that can be granted in a particular service area is unlimited, unlike in basic telephony services where there is a duopoly. The bank guarantees to be paid are nominal, at least to the 'C' category. The bank guarantee for 'A' category is Rs.3 lakhs for 'B' Category Rs. 50 lakhs and for 'C' Category Rs. 2 cores. TRAI has put ceiling on maximum tariff for Internet services. For dial up, it is Rs. 30 per hour of usage.

The ISP Policy is very liberal as discussed above but still some regulations exist which need to be looked into. It allows private ISPs to set up their own international gateways only after government's prior permission regarding security clearances. It took the government one-year to come up with security guidelines for setting up the gateways, once the first proposal for ISP licence came from the private operator. It is only recently that the government has given in principle the clearance to the 16 Private ISPs for setting up the International gateways. But still a constraint remains. The ISPs are not allowed to lend their gateway to other private operators and restrict it only for their own use. They, thus cannot use it for commercial purpose. Present ISP Policy does permit ISPs to provide last mile connectivity using radio links and optical fibre only. Other impacts are:

i) Impact of non opening of domestic long distance for private participation
   * *Cost:* The effect of government's regulations preventing private operators to participate in the long distance dial up communications sector had led to high rates of international bandwidth in the initial phase. These rates have however come down recently after TRAI's intervention. The organizations like Railways and Power Grid will take little more time before they start leasing their services for commercial purpose. After they start, the competition may bring down the rates further.
   * *Non Availability:* Another impact has been the infrastructure bottlenecks. The DOT's monopoly in the sector has led to a lot of infrastructure problems in the country. The country is short of sufficient domestic long distance lines. At present, there is a shortage of leased lines in smaller towns of the country. The leased lines from DOT are not available at all the places.
   * *Non Availability of Asymmetric Bandwidth:* the line based backbone and the equipment presently mounted on it give the ability of a symmetric bandwidth i.e. same bandwidth is available on both the sides the majority of ISPs requires asymmetric bandwidth (different for up and down stream), hence there is a waste of resources which has cost implications.
   * *Non Reliability:* The present DOT infrastructure is not very reliable and the desired reliability of 99% is a distant dream.

ii) Impact of VSNL's monopoly in international bandwidth is also negative. The impact has been the same as in domestic long distance i.e. the high cost of leasing the international bandwidth.

These rates have however come down after intervention of the TRAI. The rate Rs. 72lakhs charged by the VSNL earlier for a 2 Mbps line have now been reduced to Rs. 42 lakhs . The rate VSNL has to pay to the International carriers is 35lakhs for a 2 Mbps line. The extra 7lakhs which VSNL charges as of now is not enough, considering the investments VSNL has made on setting up the international gateway.

Another impact has been on the quality of services. VSNL signs no Service Level Agreements (SLA) with the private operators for the quality of bandwidth it is to offer. As a result, private operators are not sure whether they are getting what they have demanded.

The last problem is that the process of leasing the international bandwidth takes too long a time as per international standards.

The government took ten months to release the guidelines for applying for setting up international gateways, once ISPs approached it to set up their own gateways. And, once the guidelines came, it took another 4-5 months to clear the companies who applied for the license.

iii) The last mile connectivity regulations though exist, ISPs do not find it cost effective to provide it. The radio links, clearance from DOT has to be taken because of frequency interferance. Also, laying of optical fiber in a city area requires clearance to be taken from at least 100 agencies.

Hence, approaching DOT for the last mile connectivity is a cheaper option for a private ISP .The only hitch is that there are three problems, which an ISP faces:

* DOT infrastructure had been traditionally designed for voice traffic, obviously, the quality of data transmission will be not that good.
* The telephone penetration in India is very low. As a result, the last mile connectivity will be a bottleneck in providing new internet connection at a place where telephone line does not exist.
* The private ISP is dependent on the DOT/MTNL for the connectivity leading to delays in providing the connection immediately to new subscriber.

CONCLUDING REMARKS

Over a period of time the government realized the importance of Internet as a tool to usher in a more interactive society, The Internet was seen as a means that will transform not only the way the business is being done, but also as a means that will transform the interactions at the individual levels. In order to transform the economy into a Internet driven one, the government needed more investments which a restricted entry into the sector would not bring. The setting of national IT task force and its subsequent recommendations were also great milestones. The government came up with New Telecom Policy (NTP99) and also ISP policy on Nov 6th 1998. The ISP policy specified guidelines for the issue of ISP licences in the three categories 'A', 'B', 'C'. By now, more than 225 licences have been issued in all the categories and already over 70 ISPs have started their operations. However, the existing ISP Policy is only an access policy and not one meant for service .It does not mention the need to have Internet exchange for routing the center traffic through a server, located in some other country. The worst part is that the government policy does not remain consistent, the taxation and import duty structure keeps on changing with every budget, year's 2000s budget had announced further incentives for the ISP industry,. Already existing liberalized policies in terms of issuing licenses and license fees, the budget had announced the reduction in customs duty for the ISPs project imports of networking equipment. No service tax was imposed on ISPs as was feared by some speculators Demands for recognizing ISP as an infrastructure industry did not come through.

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