PERFORMANCE OF INTERNET SERVICE PROVIDERS : VSNL VIS-A-VIS STPI

by

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ABSTRACT

Paper projects the performance of the Internet Service Providers (ISP), especially the leased line connectivity extended from the institutions of Government of India i.e., Software Technology Parks of India (STPI) established under the Ministry of Information Technology and Videsh Sanchar Nigam Ltd., (VSNL) established under the Ministry of Communication. Emphasis is laid on the leased line Internet connectivity being extended to the academic institutions and private industrial establishments in Mysore City. Also highlighted are the various issues concerned with hardware and passive component requirements, including the comparison of cost factor. The data /information provided here are based on the empirical studies and experiences gained in both the cases over the past 3 years. Also depicted are the comparison of certain issues of terms and conditions quoted by both the ISPs, while extending the services. More than anything, the effectiveness of services and the customer satisfaction in attending to the work of installation and follow-up services are compared. The merits and demerits in getting the Internet connectivity through the local data circuit maintained by the BSNL (DoT) and the radio waves from the earth station are examined.

Keywords: Internet Access, ISP's

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0 Introduction

How astonishing it is to note that a weekly edition of "New York Times" carries more information than an average man of the 17th Century England, who was supposed to know in his entire life time had ! Such is the amount of information that is being generated now. However, one need not be bewildered of the situation because, technology has paved ways and means of information storage and communication. Few decades ago, we used to come across only two kinds as to the format of information sources are concerned : the paperback edition and the hard bound library edition of books. Today, information is made accessible in variety of formats : paperback, hardbound books, on CD-ROM high density floppies, magnetic tapes, microfiche and on the web. The 32 volume set of Encyclopedia Britannia is now available on CD-ROM diskette, as well as, on the Internet. Access to the encyclopedia articles on Internet is

free. You can even send the desired article of your interest to any of your friend through e-mail. This provision is made in the case of Encyclopedia Britannia on the web.

You can opt for CD-ROM version, cost of which is Rs.1,950=00 instead of hard copy for Rs. 36,000.00. Quite a number of reference works and journals are now being published in electronic format and made accessible online. More than anything, the time consumed while tracing the information in a traditional library is more than getting pertinent information on Internet. In this way, Internet has emerged as a boon to academicians and researchers. Write-up on "Angle of Justice", "National Fruit and Tree" and the like can be had from Internet browsing. Many of the information of these kinds are not available in the popular reference works of yester years.

1 Internet Service Providers (ISPs)

There are number of Internet service providers in India. They can broadly be classified into two groups – private ISPs and ISPs which come under the purview of the Government of India concern. In the later category, there are two organizations.

- ?? Software Technology Parks of India (STPI)
- ?? Videsh Sancahr Nigam Limited (VSNL)

While referring to the private sector of Internet service providers, the following table indicates the popular organizations which are providing the Internet connectivity.

Table 1. List of Private ISPs

AMI Online	HCL Infinet	Netkracker	Satyam Online
Ankhnet	i91	Nettinx	Sigma Online
BPL Net	KMR Online	Only Smart	Southern Online
Caltiger	Livewive!Net	Pacific Internet	Swift Online
City Online	Manipal Control Data	Pioneer Online	Tring Tring
Dishnet / DSL	Mantra Online	Power Surface Net	Value Online
Freedialin.com	MTNL	RoltaNet	W3C
Glide Online	Net4 India	Sampark Online	Wilnet Online
Global Online			XPS Online
			Zee Next

Underlined ISPs are operating in Mysore.

The two major organizations of the Government of India concern have been considered here for comparison of the performance and effectiveness of the services.

2 Software Technology Parks of India (STPI)

Software Technology Parks of India, is a society set up by the Ministry of Information Technology, Government of India in 1991, with the main objective of encouraging, promoting and boosting the export of software products and services from India. The

objective of STPI aim is to make India a global IT super power and one of the largest generator and exporter of software in the world within the next ten years.

The STPI schemes are for 100% export oriented units for the development and export of software using data communication links. STPI acts as the front end on behalf of the Government of India to take care of all the statutory requirements like project approval, import approval, bonding, export certification and the like related services. The improvement benefits under the STPI scheme are:

- ?? Duty free imports of hardware and software
- ?? Exemptions from income tax till the year 2010
- ?? 100% foreign equity participation
- ?? Exemption of excise duty for domestic purchase of capital goods
- ?? Reimbursement of CST

STPI supports new software companies by providing infrastructure, especially with facilities such as Internet, telephony, fax, backup power etc. As of today, there are more than 6000 software exporting companies operating under the umbrella of the STPI. The share of the software export from STPI units is more than 70% of the total software exports from India. The major activities of STPI are:

Soft Net Service – High speed data communication links between software company and their partners abroad.

Soft Point Service – International digital private leased lines provided for connecting customers in India to any country in the world. The services act as the life line in networking and building virtual organizations.

Captive Networks – The technology enterprise in STPI is very rich and this helps to extend customization of the services to meet specific requirements of enterprise customers. With the customization, the service delivery, optimization of band width, diversity, storage network management, flexibility of applications and better values for investment are the special features. Captive network offering are featured with (a) network design and architecture (b) international connectivity (c) providing local loops (d) remote customer site support (e) first to offer digital private lines through multiple access radio network – 1992 (f) first to offer commercial Internet services in India – 1993 (g) first to demonstrate video conferring capabilities – 1993.

SoftLink Service – SoftLink is an Internet service developed specially to cater for the enterprise and the ISP segment of the business. The coverage is also extendable to academic and research organizations, including government establishments. SoftLink is a completely online service offering unique features;

- ?? India's only Class B network
- ?? Multi homed network connectivity to major tier one Internet backbone in the world like UUNET, WorldNET.
- ?? High throughputs and very good loading radio
- ?? Strong platforms for routing and supporting diverse configurations
- ?? Network management for end-to-end delivery

Soft Link service by virtue of multi homing, enjoys robust network configuration and fail proof service customized for web hosting either on STPI services or as a co-location. The services under SoftLink services include;

- ?? Internet connectivity from 64 kbps to 45 mbps and higher leased lines
- ?? Gateway services for ISPs
- ?? Web hosting and server co-location facilities.

3 Videsh Sanchar Nigam Ltd., (VSNL)

Videsh Sanchar Nigam Ltd., (VSNL) is India's vehicle for thrust in information technology established on the 1st of April 1986 under the Ministry of Communication. The prime objective of VSNL is to establish global information network and thereby provide access to information required by the public anytime and anywhere. It is also intended to extend these facilities quite effectively at the minimum cost.

As part of Global information revolution VSNL's Gateway Internet Access Services (GIAS) has successfully put India on the information superhighway. GIAS is the gateway to Internet, and enables you to send or receive e-mail, read news, surf the net, log on to remote machines, download files and much more. VSNL also offers ISDN Internet access, leased line Internet access, web site and web server hosting services, to enable you to establish your preference on the net and help your business reach out globally.

As India's international telecommunication provider VSNLs mission is to create a global and seamless bus network of information super highways; to connect people and computers cost effectively and efficiently anytime, anywhere. The services are segregated in three groups (i) basic services (ii) valued added services (iii) specialized services.

The VSNL is playing an important role in the providing value based information service. The main gateways are in Chennai, Bombay, Calcutta and New Delhi. The total capital investment of VSNL exceeds Rs.3,000 millions and the number of personnel working for the organization exceeds 3000. The share prices of VSNL is indicated in the New York Stock Exchange list. Above all, VSNL has been one among the nine income generating organizations in the country and is popularly termed as one of the 'NAVARATNA'.

Table 2. Internet lines extended to customers from STPI and VSNL in Mysore City

	Leased Lines			
ISP	Band Width	No. of Lines	ISDN Dial-Up 64 kbps	PSTN Dial-up
VSNL	64 kbps *(Industries 2, Govt. 1)* 128 kbps 256 kbps 512 kbps	03 -- -- --	45 **User Category** Educational – 2 Government – 2 Industrial – 5 Private - 36	1600

STPI	64 kbps 128 kbps 256 kbps 512 kbps	10 07 01 01	**User Category** Educational - 5 Government - 5 Industrial - 3 Private - 6	19

Table no.2 depicts the statistical data pertaining to the Internet lines extended to the customers, both corporate and private, from VSNL and STPI. The number of customers and the type of Internet connectivity obtained by the users are given. It is clearly evident that corporate Internet users have preferred STPI in respect of leased line connectivity of 64 kbps to 512 kbps band width. It is pertinent here to mention that many of the corporate users, especially the educational and research organizations which were with VSNL prior to the year 2000, gradually shifted to STPI for leased line connectivity noticing some of the advantages. The advantages are explained in the comparative account in the subsequent pages.

Further, it clearly evident that 45 ISND dialup lines have been extended from VSNL. The user community here comprises mainly Medical Transcriptionists, Share Market Dealers and Commercial Internet Browsing Centers. However, on the other hand more than 1600 users have been provided with dialup connectivity on Public Switched Telephone Network (PSTN) of 28.8 kbps.

COMPARISON OF THE INTERNET CONNECTIVITY AND SERVICES

STPI	VSNL
STPI is a society established by the Ministry of Information Technology, Government of India in the year 1991	VSNL is established by the Ministry of Communication, Government of India in 1986 for Gateway Internet Access Services.
Concerned with extending leased line Internet facility. Many industrial, educational and research organizations have obtained Internet connectivity of 64 kbps to 512 kbps band width of leased lines.	A great majority of the customers are for PSTN dial-up Internet connectivity. There are only 3 corporate customers for 64 kbps leased line facility. Major part of user community comprises private / personal connectivity.
In the beginning of the year 2001, there was 15% discount for educational and government organizations on port access and loop maintenance charges	A discount of 50% (on port access charges) which was prevailing upto Dec 2000 has been cancelled from 1.1.2001. No discount for educational and government organization effective 1.1.2001
Of late, there is no special discount or whatsoever for educational and government organizations on port access and loop maintenance charges, including the charges on registration and installation of the facility.	Of late, it is announced that the recognized educational and government organizations, including newspapers and newspaper agencies are also eligible for 50% concession on annual port access charges. The recognized software exporters are eligible for 20% concession, (the annual export turnover has to be above

	US$1,00,000=00
Installation charges is based on the contract period of either one year or three years. Recently, whatever may be the contact period of service preferred, charges remains the same.	Registration fee is refundable only when service being non feasible, or subscriber surrenders the registration before the issual of demand note for payment. Minimum period of contract is enforced for leased line connectivity (one year).
STPI insists on the certificate of latitude, longitude and MSL issued from the survey of India, before proceedings for installation process.	No such certificates are required in the case of VSNL leased line connectivity.
The antenna fixed on the mast of the customer should be in the "line of sight" with the antenna of the STPI earth station. Radio modems are installed to receive the microwaves directly from the earth stations. Transmission of data is by means of microwaves. Since no cable network is involved, in case of any breakdown / problem of transmission, rectification is easier and quicker, with almost no downtime	The transmission of information is through the local data circuits (cable network provided by BSNL). Modems are connected by the telephone cable network so as to receive / transmit data converting signals of analog into digital and vice versa. Since cable network is involved in transmission of data, it is difficult and usually time consuming to detect the reason for break down, and to fix the bug. Quite a number of links / locations are to be checked before ensuring the constraints and proceed for fault repairs.
Payment of separate charges for cable network maintenance is eliminated here as the transmission of data is direct through radio waves	Separate demand note will be issued annually from BSNL as local cable maintenance charges. It has to be paid to BSNL apart from Internet rentals of VSNL
Erection of iron antenna mast, usually of 15 meters height is required to keep the earth station antenna in the "line of sight" to receive radio wave transmission. The building terrace must be strong enough to bear the load of about 2.5 tons. Any obstruction for line of sight caused by tree top, either now or in future, be chopped off. (within our premises or outside of it)	Does not need antenna or erection of mast on the building. All that is needed is the installation of local data circuit by BSNL and extending and ensuring connectivity between the modems. The risk of maintaining the antenna mast of 2.5 tons on 4 legs of 4 feet apart on the building is overcome here.
Requires installation of aviation lamps on the antenna mast, as well as R.F. cables, copper cables and separate earth pits for lighting arrest. However, in case of upgradation to higher band width, the equipments and other components remains the same without becoming obsolete or no need for replacement.	Such costly components are not required as transmission is not through antenna and radio waves. However, in case of upgradation of Internet band width, separate charges have to be paid for registration and modem has to be replaced by the one with higher capacity.
STPI does not impose any kind of deposit	VSNL insists on payment of advance deposit.

or advance payment of annual rentals.	The amount of one quarter rent be paid in advance as caution deposit.
Port access charges be paid quarterly or half yearly or annually. No interest will be levied on delayed payment of charges	Strictly insist on payment of 24% interest per annum on delayed payments of quarterly rentals / port charges, failing which the services will be subjected to disconnection without notice.
Services are being extended from the STPI sub office, established in Mysore. All financial transactions and administration is controlled from the main office in Bangalore	Services are being extended from BSNL Mysore, maintaining the modems and data circuits. All directives are being given from the VSNL center Bangalore, except financial transaction which is controlled from VSNL, Chennai.
Professional and technical staff will be on duty all the time, throughout the year. Any fault in transmission will be immediately attended to by the engineers. Customer can be in touch with the staff of the STPI sub office in person, at times of break down of services. Trouble shooting steps are determined and the procedure to be followed by the customers is given in writing, indicating the names of the professional engineers and their contact numbers : voice, fax and e-mail address	Lack of trained professional staff to maintain the services locally. Staff will not attend to fault repairs on holidays. The BSNL staff has to verify the local circuit before coming to conclusion on fault repairs. Usually the procedure is tiresome and time consuming. The professional staff in Bangalore is not easily accessible either for technical clarification or fault repairs.
Professional staff attends to special programmes, if invited, to deliver lecturers / discussions on technical issues, as well as workshops and training programmes	No professional staff for the purpose of out reach / extension services of this kind. If at all any programme of this kind is organized, the professional staff has to come from the Bangalore office. Therefore, as it stands, there is no training programmes / or instruction classes for freshers.
Data transmission on the specified band width can be verified at any given time. In case of slow transmission, it can be identified almost instantaneously. Above all, STPI link maintains the band width (speed of data transmission) without any constraints. On this specific issue, STPI service is commendable	Band width cannot be verified instantaneously as the process involves verification at both ends of the local circuits with separate equipment reader. It is seen, usually the transmission speed will be low / varies from time to time in a 24 hour duration. Apart from this major issue, the other aspects of VSNL are commendable.
The terms and conditions mentioned in the contract agreement form of STPI is loop sided. Conditions are framed as to ensure maximum safety and benefit of STPI forgetting the customer totally (without maintaining the balance on both sides)	Terms and conditions are not too many and are generally acceptable. Every term is weighed and include, and the customer is well taken care of while conditions are spelt.

Tariff for Leased Line Connectivity-VSNL

Band Width	Reg. Fee	Installation Fee and Testing Fee	Annual Rent
64 kbps	Rs.20,000.00	Rs.10,000.00	Rs.5.00 lakhs
128 kbps	Rs.20,000.00	Rs.10,000.00	Rs.7.6 lakhs
256 kbps	Rs.40,000.00	Rs.10,000.00	Rs.10.5 lakhs
512 kbps	Rs. 40,000.00	Rs.10,000.00	Rs.15.1 lakhs
1 mbps	Rs.40,000.00	Rs.10,000.00	Rs.25.1 lakhs
2 mbps	Rs.50,000.00	Rs.10,000.00	Rs.41.8 lakhs

Traffic for Leased Line Connectivity – STPI

Band Width	**Radio Survey**	**Reg. Fee**	**Installation Charges**	**Annual port access charges**	**Annual Loop maintenance charges**
64 kbps	Rs.5000.00	Rs.20,000.00	Rs.2,0 lakhs	Rs.2.5 lakhs	Rs. 1.0 lakh
128 kbps	Rs.5000.00	Rs.20,000.00	Rs.2.0 lakhs	Rs.3.8 lakhs	Rs. 1.8 lakhs
256 kbps	Rs.5000.00	Rs.40,000.00	Rs.2.0Lakhs	Rs.5.2 lakhs	Rs. 2.5 lakhs
512 kbps	Rs.5000.00	Rs.40,000.00	Rs.4.0Lakhs	Rs.6.85 lakhs	Rs. 3.0 lakhs

Educational and government organization will get 50% concession on annual rentals in case of VSNL. However, STPI which was hitherto extending 15% discount has now stopped extending the concession of any kind.

4 Conclusion

VSNL and STPI have been in the field of extending Internet service to corporate, as well as private establishments. STPI services are restricted to leased line connectivity and the performance is quite commendable. On the other hand, VSNL has been providing services to individuals on Public Switched Telephone Network (PSTN) dial-up connectivity. A vast number of users are covered in this category, with incentive of extending free access from 11.00 pm to 8.00am on week days and full day on national holidays and Sundays. The service is well received by the public and is satisfactory. However, of late quite a number of commercial ISPs have emerged in Mysore City: Satyam Online, Call Tiger, Dish Net, HCL Infinet. It is high time that VSNL has to improve its quality of service and expeditiousness in attending to the fault repairs in order to complete with these private ISPs in the future.

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