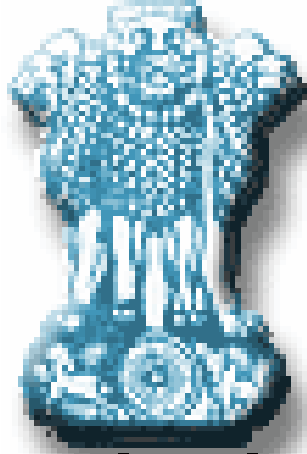


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सत्यमेव जयते

Telecom Regulatory Authority Of India

Study Paper

on

Analysis of Internet & Broadband Tariffs in India

New Delhi

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A Study Paper on “Analysis of Internet & Broadband Tariffs in India”

Background

1. Dial-up connections are still the most popular way to connect to the Internet, but take-up of faster, digital alternatives, collectively referred to as broadband, is on the rise. The percentage of Internet subscribers using dial-up connection for Internet access decreased from 84% in March-05 to 66% by March-06 and it is 60% at the end of June-06.

2. Unlike dial-up connections, broadband services, are always-on (while the computer is switched on), does not interfere with the use of telephone line to make calls or send faxes, and allows the user to share a single connection with more than one computer.

3. DSL and cable modem are the popular consumer broadband technologies. A dialup service connects to the Internet through phone line. The modem in the PC "calls" an Internet Service Provider (ISP) and connects with a maximum speed 56Kbps. Broadband offers a minimum transmission speed of 256 kbps, starting at approximately four times the speed of Dial-up Internet connection.

4. In the TRAI’s recommendations dated 29th April 2004 on “Accelerating growth of Internet and Broadband Penetration”, the following targets were set for the next 6 years i.e. till year 2010.

Year ending	Internet subscribers (including broadband)		Broadband Subscribers	
	Target	Achieved	Target	Achieved
2005	6 Million	5.55 Million	3 Million	0.18 Million
2007	18 Million	-	9 Million	-
2010	40 Million	-	20 Million	-

5. As is evident from the above Table, there has been an overall shortfall of 4.5 lakh subscribers against the set target by the year 2005 and this was caused by the slack growth of Broadband. As against the target of 3 million broadband connections, only 0.18 million (6%) were achieved till 2005 end. Recent available data shows that this shortfall is increasing. As of June 06, there were 7.71 Million Internet subscribers (including broadband) and 1.56 Broadband subscribers. Next milestone as per TRAI's recommendations (Mar 2007) is just three quarters ahead and the growth rate required is 133% in case of Total Internet subscribers and 477% in case of broadband.

6. It may be worth mentioning here that the above subscriber figures are the number of connections and do not reflect the actual number of users of Internet facility. Disparity between the number of connections and number of users is mainly on account of the fact that a number of users avail Internet facility at cyber cafés, sharing Internet lease line/Broadband connections.

7. This paper is intended to provide an analysis of the prevailing market structure and tariffs for Internet service.

Executive Summary

A. Market Analysis

- As of June 2006 there were 7.71 Million Internet (including broadband) subscribers
- About 20% of the total Internet subscribers are broadband subscribers, but this segment is growing at a faster rate.
- Annual growth rate of Internet subscribers seen for the last three years is about 25%. Growth rate for the quarter ending June-06 has been 11%, translating into an annual growth rate of about 44%.
- 86% of the total Internet subscriber base (including broadband) is with five leading ISPs.
- As of June 06, 62% of the total Internet subscribers are with PSUs as against 56% in Mar-06.

B. Tariff Analysis

- Composite tariff for Internet access through cyber cafés generally ranges between Rs. 5 to Rs. 15 for an hour (Rs. 10 being most common)
- Minimum monthly outgo of a dial-up subscriber for an average usage of 3 hours per month (during peak hours) is about Rs. 72 in Mumbai & Delhi and Rs. 47 in rest of India. If we give weightage to off-peak hour usage, the subscribers' monthly outgo would further drop.
- Minimum monthly outgo for a broadband subscriber is Rs. 199 in Delhi & Mumbai and Rs. 250 in rest of India, as these are the monthly rental, which is to be paid even if the subscriber does not access the Internet.
- Effective charge per hour for dial-up service for high users (unlimited usage plan) assuming an average usage of 8 hours per day ranges

between Rs. 10.58 to Rs. 24.59 during peak hours. For Broadband services, the corresponding figure ranges between Rs. 3.75 to Rs. 5.83.

- From the above, it can be concluded that Dial-up service is cheaper than Broadband for very low usage subscribers. As the usage and the quality requirement of the subscriber goes up, broadband becomes cheaper.

Section 1: Market Analysis

1.1 As of 31st March 2006, 153 Internet service Providers are operational. Table given below shows the subscriber base and the rate at which it is growing.

	Total Internet subscribers	Annual Rate of growth (Sequential)
Mar-01	3.04	-
Mar-02	3.42	12%
Mar-03	3.64	6%
Mar-04	4.55	25%
Mar-05	5.55	22%
Mar-06	6.94	25%

1.2 It may be worth noting here that in the last quarter alone, between April to June-06, Internet subscriber base grew at the rate of 11%. This translates to an annual growth of 44%, which is approximately double the annual growth rate seen for the past three years.

	Broadband subscribers	Rate of growth
Mar-05	0.183	-
Mar-06	1.348	637%

1.3 It can be seen that addition to total Internet subscriber base in the financial year 2005-06 is 1.39 Million, out of which 1.16 Million are Broadband subscribers.

1.4 As per the data available, about 60% of the total Internet subscribers are using Dial-up service as of June-06. The usage data of Dial-up subscriber is as follows:

	MOU/sub/ month	% change
Mar-04	400	
Mar-05	305	-24%
Mar-06	175	-43%

1.5 The declining trend in usage of dial-up can be possibly attributed to shift of Bulk Internet users from dial-up to Broadband service. Average MOU/sub during the quarter ending June-06 (190) has been slightly higher than for the quarter ending Mar-06.

Market share of top Five ISPs as on 30/6/2006

Internet Service Provider	Market share
BSNL	43.07%
MTNL	19.26%
Sify Ltd.	11.83%
VSNL	6.12%
Bharti Televentures	5.73%
Total	86.01%

1.6 There are 153 ISPs in operation. 86% of the total subscriber base is with the above five leading ISPs. It may be worth noting here that about 62% of the total Internet subscriber base is with the PSUs (BSNL/MTNL). Their pan India presence and the dominant status in Fixed service, puts them in an advantageous position to offer combo plans [where user of voice services can avail Internet services also].

Section 2: Tariff Analysis

2.1 In this section an attempt has been made to assess the tariff levels for Internet Access by the modes of both Dial-up and Broadband.

2.2 As stated earlier, 86% of the market share is with the five leading ISPs. Therefore, this analysis covers the tariffs offered by these ISPs. The tariff plans for non-commercial subscribers have been taken up for the analysis, as affordability is the key concern in respect of this segment of the market.

2.3 The effective tariff for Internet access has been worked out taking into account the fixed and variable charges payable by the subscriber to avail the service but excludes the service tax. Tariff for Dial-up service and Broadband service has been separately analysed.

2.4 Considering the fact that Internet access through Cyber Cafés is quite popular, it may be worth noting here that the composite tariff for Internet access through cyber cafés generally ranges between Rs. 5 to Rs. 15 for an hour (Rs. 10 being most common).

A: Dial-up service

2.5 Dial-up tariffs are two part tariffs one is the charge for Internet Access and second is the charge for PSTN usage. The tariff analysis given below shows that though the Internet access charges are considerably low, the composite charge for Dial-up usage is high on account of high PSTN usage charge. PSTN component is acting as a bottleneck in lowering of cost of using dial-up service and thus in increase of number of subscribers.

2.6 Dial-up plans are time based i.e. the customer is charged based on the time offered/spent for Internet Access. The tariff plans for dial-up service are available under prepaid and postpaid options.

(i) Prepaid payment option

2.7 In prepaid packs, the subscriber gets certain number of hours of Internet access to be used within the specified period for a fixed payment. The subscriber logs onto the Internet using the PSTN network of the access provider and for this the PSTN component as specified by the access provider is separately payable by the subscriber. In the case of subscribers using the prepaid packs of integrated service providers, the PSTN charges specified by the respective operator has been taken into account. For the customers of standalone ISPs, PSTN charges levied by MTNL/BSNL for dial-up service has been reckoned depending upon the area of operation.

2.8 The average usage per dial-up subscriber is 190 minutes per month, which is about 3 hours per month. However, there is no prepaid pack in the market, which offers such a limited usage. The lowest packs by the service providers generally are for 100 hours of usage. Hence the charges have been worked out on the basis of tariffs applicable in 100 hour packs with a minimum validity of 12 months.

Table 1: Effective Charge per hour**(Rs.)**

Service provider	Charges for 100 hours	Validity (months)	Internet access Charge per hour	PSTN charge per hour		Effective charge per hour	
				Peak	off-peak	Peak	off-peak
MTNL	500	12	5	24	12	29	17
BSNL	500	24	5/0*	9.6	4.8	14.6	4.8
VSNL (Delhi & Mumbai)	800	12	8/0*	24	12	32.0	12.0
VSNL (Rest of India)	800	12	8/0*	9.6	4.8	17.6	4.8
Sify (Delhi & Mumbai)	702	12	7	24	12	31.0	19.0
Sify (Rest of India)	702	12	7	9.6	4.8	16.6	11.8

* Access Charge during off-peak hours is “nil”

2.9 Effective charge per hour ranges between Rs. 14.6 to Rs. 32 during peak hours and Rs. 4.8 to Rs. 19 during off-peak hours. It may be noted here that most of the customers use dial-up connection during off-peak hours.

2.10 If we see Internet access charge alone, it has declined from Rs. 6/hour during the year 2004-05 to a level of Rs. 5/hour in 2005-06 during peak hours. Considering the lowest tariffs for Dial-up service offered by BSNL, Internet access charge of Rs. 5 per hour translates into a charge of 8 paise per minute, whereas PSTN charge is approximately double than the Internet access charge during peak hours and equivalent during the off-peak hours.

Therefore, it can be said that to bring down the composite dial-up charges, PSTN charge for dial-up service has to come down.

(ii) Postpaid payment option

2.11 Generally these plans are CLI based and are being offered by Integrated (Basic) service providers. This may be the cheaper option available for very low users considering that they have to pay only for the actual usage.

Table 2: Effective Charge per hour

(Rs.)

Service provider	Charge per hour	PSTN charge per hour		Effective charge per hour	
		Peak	Off-peak	Peak	Off-peak
MTNL	6	24	12	30	18
BSNL	6	9.6	4.8	15.6	10.8
Bharti (Delhi & Mumbai)	0	24	12	24.0	12.0
Bharti (rest of India)	0	24	7.2	24.0	7.2
VSNL (Delhi & Mumbai)	5.5	24	12	29.5	17.5
VSNL (Rest of India)	5.5	9.6	4.8	15.1	10.3

2.12 For an average dial-up usage of 3 hour per month, CLI option is the cheapest option available. Subscribers' minimum monthly outgo during peak hours is about Rs. 72 in Mumbai & Delhi and Rs. 47 in rest of India. If we give weightage to off-peak hour usage, the subscribers' monthly outgo would further drop.

2.13 Apart from the above options that are intended to cater to the requirements of the low/medium users, the service providers also offer unlimited usage plans for high users.

2.14 In such plans, unlimited usage is provided for a specified period for a fixed payment. The periods of usage in this category of plans are relevant only to work out the applicable PSTN charges. An average usage of 8 hours per day has been assumed to derive effective charge per hour in the unlimited category plans.

Table 3: Effective Charge per hour in unlimited plans (assuming an average usage of 8 hours per day)

(Rs.)

Service Provider	Charges (in Rs)	Duration (in months)	Internet access charge per day	Internet access charge per hour	PSTN charge per hour		Effective charge per hour	
					Peak	Off-peak	Peak	Off-peak
MTNL	1700	12	4.72	0.59	24	12	24.59	12.59
VSNL (Delhi & Mumbai)	2829	12	7.86	0.98	24	12	24.98	12.98
VSNL (Rest of India)	2829	12	7.86	0.98	9.6	4.8	10.58	5.78

2.15 Effective charge ranges between Rs. 10.58 to Rs. 24.59 per hour and Rs. 5.78 to Rs. 12.98 per hour during peak and off-peak hours .

B: Broadband Service

2.16 In Broadband services, the charging pattern is generally based on the quantum of data usage and not linked to the duration of Internet access. Broadband tariff plans can also be divided into two broad categories of limited usage and unlimited usage. Broadband plans offering speed of 256Kbps i.e. minimum mandated download speed, have been considered for the purpose of tariff analysis since non-commercial subscribers are likely to prefer 256Kbps plans.

(i) Limited usage (Volume based) plans

2.17 Under these plans, subscriber gets Internet access with specified free data transfer (in MBs) for a fixed monthly charge. Any additional usage is charged separately. The lower monthly rental plans offered by the 5 ISPs have been analysed. These plans offer free data transfer ranging between 400 MB to 500 MB. Therefore, the charges have been worked based on a monthly usage of 500 MB of data transfer.

Table 4: Effective Charge per MB (Rs.) of download for Broadband Services

Service Provider	Monthly Charges	Monthly Free Data transfer (Download) in MB	Addl. data transfer charge - beyond monthly free download (Rs. Per MB)	Effective Charge per MB in Rs. (for 500 MB of data transfer)
MTNL	199	400	1	0.60
BSNL	250	409.6	1.4	0.75
Sify	300	500	NA (prepaid)	0.60
Bharti	250	400	1.4	0.78
VSNL	375	500	1.25	0.75

2.18 Effective charge for 500 MB of data transfer ranges between Rs. 0.60/MB to Rs. 0.75/MB.

(ii) Unlimited usage plans

2.19 These plans offer unlimited Internet access without any limitation on the quantum of data transfer for a fixed monthly payment. The charges in this category of plans are not dependent on the quantum of data transfer/Internet access. The charges for this category of plans have been worked out assuming average usage of 8 hours per day.

Table 5: Effective Charge per hour

Service Provider	Monthly Charges	Charge per day	Effective charge per hour
MTNL	1399	47	5.83
BSNL	900	30	3.75
Bharti	999	33	4.16
Sify	1000	33	4.17
VSNL	1200	40	5.00

2.20 Effective charge for broadband (unlimited) service ranges between Rs. 30 to Rs. 47 per day. Assuming average usage of 8 hours per day, effective charge per hour ranges between Rs. 3.75 to Rs. 5.83.