

# Telecom Regulatory Authority of India



The Indian Telecom Services  
Performance Indicators July-Sept'04

**December 2004**

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(i) **INTRODUCTION**

- 1.1 This report provides an update on the growth trends for the telecom services for the period **July-Sept 2004**. It presents a broad perspective on the Telecom Services to serve as a reference document for various stakeholders, research agencies and analysts as an update over the previous reports, which pertained to financial year 2002-2003, four quarters of financial year 2003-2004 and first quarter of current financial year. Due to the Unified Access Service Regime, the details under mobile services combine both GSM & CDMA. The Fixed Service details also include WLL (F) and Village Public Telephones (VPTs). The summary of the growth pattern of Fixed, Mobile and Internet services in form of 'Quarterly results at a Glance' is given at the beginning of this compilation.
- 1.2 The information for this report has been collected from various telecom operators and service providers. TRAI collects performance-oriented data from various service providers on a quarterly basis to monitor the growth trend in the sector and to decide upon pro-active and suo motto measures to fuel the growth of the telecom services in the country. The data provided in this report is purely provisional and subject to change. TRAI regularly conducts review of its data collection programme to ensure that its processes remains appropriate/relevant in the rapidly growing telecom sector and are consistent with changing regulatory framework.
- 1.3 This quarterly report is available on the TRAI website ([www.traigov.in](http://www.traigov.in)) and is updated on quarterly basis. Any suggestions pertaining to this may please be addressed to S. N. Gupta, Advisor (CN), TRAI; Tel. 26167914, Fax. 26103294 and e-mail: [traio9@bol.net.in](mailto:traio9@bol.net.in).

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**(ii) Quarterly Results at a Glance**

**Performance Indicators of Telecom Services for QE Sept 2004**

**A. Growth of Fixed & Mobile Services:-**

	FE 2003	QE Sept 2003	FE 2004	QE Jun 2004	QE Sept 2004	%age growth over Sept 2003 (12 months)	%age growth over FE 2004 (6 months)	%age growth over Jun 2004 (3 months)
<b>1) Subscriber's Base (in millions)</b>								
i) Fixed Line including WLL(F)	41.48	41.74	42.84	43.51	43.87	5.10	2.40	0.83
ii) Mobile (GSM + CDMA)	13	23.03	33.69	37.8	42.99	86.67	27.60	13.73
<b>Gross Total</b>	<b>54.48</b>	<b>64.77</b>	<b>76.53</b>	<b>81.31</b>	<b>86.86</b>	<b>34.11</b>	<b>13.50</b>	<b>6.83</b>
<b>2) Traffic (MOU) (minutes of use/ sub/month)</b>								
i) Mobile (GSM)	222	298	322	*	*			
<b>3) ARPU (Rs./sub/ month)</b>								
i) Mobile (GSM)	537	516	436	*	*			
ii) Mobile (CDMA)			382	*	*			
<b>4) Teledensity</b>								
Population in million (Estimated)	1047	1050	1067	1070	1073	2.19	0.56	0.28
i) Fixed including WLL(F)	3.96	4.18	4.01	4.07	4.09	-2.19	1.83	0.55
ii) Mobile (GSM + CDMA)	1.24	2.30	3.16	3.53	4.01	74.20	26.89	13.41
<b>Gross Total</b>	<b>5.20</b>	<b>6.48</b>	<b>7.17</b>	<b>7.60</b>	<b>8.10</b>	<b>24.92</b>	<b>12.86</b>	<b>6.53</b>

\* Information not made available by service providers

**B. Growth of Internet Services:-**

	FE 2003	QE Sept 2003	FE 2004	QE Jun 2004	QE Sept 2004	%age growth over Jun 2003 (12 months)	%age growth over FE 2004 (6 months)	%age growth over Jun 2004 (3 months)
<b>1) Subscriber's Base (in million)</b>								
i) Internet	3.64	3.98	4.55	4.93	5.32	33.67	16.92	7.91
ii) 'Always-On' High Speed Connection	0.08	0.12	0.19	0.23	0.31	158.33	63.16	34.78
<b>2) Minutes of Use (MOU)/ subs/month)</b>								
		400	400	400	320	-20.00	-20.00	-20.00
<b>3) ARPU (Rs/subs/month)</b>								
		303	406	250	280	-7.59	-31.03	12.00

**C. Performance of service providers during the quarter: -**

**(I) Fixed Line including WLL(F) Subscribers Base(in Million)**

1) Basic Service Providers	FE 2003	QE Sept 2003	FE 2004	QE Jun 2004	QE Sept 2004	%age growth over Sept 2003 (12 months)	%age growth over FE 2004 (6 months)	%age growth over Jun 2004 (3 months)
BSNL	35.90	35.82	36.11	36.03	36.15	0.92	0.11	0.33
MTNL	4.63	4.45	4.38	4.54	4.12	-7.42	-5.94	-9.25
Tata/ Hughes	0.45	0.71	1.00	1.32	1.64	130.99	64.00	24.24
Bharti	0.37	0.5	0.64	0.70	0.77	54.00	20.31	10.00
Reliance	0.00	0.1	0.50	0.68	0.92	820.00	84.00	35.29
HFCL	0.08	0.09	0.12	0.14	0.16	77.78	33.33	14.29
Shyam	0.05	0.07	0.09	0.099	0.108	54.29	20.00	9.09
<b>Total</b>	<b>41.48</b>	<b>41.74</b>	<b>42.84</b>	<b>43.51</b>	<b>43.87</b>	<b>5.10</b>	<b>2.40</b>	<b>0.83</b>

**(II) Mobile Services Subscriber Base (in Million)**

Service Providers	FE 2003	QE Sept 2003	FE 2004	QE Jun 2004	QE Sept 2004	%age growth over Sept 2003 (12 months)	%age growth over FE 2004 (6 months)	%age growth over Jun 2004 (3 months)
Reliance	0.54	4.81	7.26	8.18	9.04	87.94	24.52	10.51
Bharti	3.07	4.62	6.50	7.67	8.70	88.31	33.85	13.43
BSNL	2.29	4.04	5.53	6.17	7.96	97.03	43.94	29.01
Hutch	2.16	3.22	5.15	5.77	6.37	97.83	23.69	10.40
Idea	1.28	1.90	2.73	2.95	4.36	129.47	59.71	47.80
BPL Group	1.13	1.31	1.88	2.15	2.34	78.63	24.47	8.84
Others	0.73	0.88	1.29	1.17	1.47	67.05	13.95	25.64
Spice	0.64	0.75	1.21	1.30	1.42	89.33	17.36	9.23
Escotel	0.59	0.69	0.99	1.09				
Tata/ Hughes	0.16	0.37	0.63	0.71	0.69	86.49	9.52	-2.82
MTNL	0.35	0.38	0.46	0.54	0.57	50.00	23.91	5.56
HFCL	0.03	0.03	0.03	0.034	0.043	43.33	43.33	26.47
Shyam	0.03	0.03	0.03	0.027	0.027	-10.00	-10.00	0.00
<b>Total</b>	<b>13.00</b>	<b>23.03</b>	<b>33.69</b>	<b>37.76</b>	<b>42.99</b>	<b>86.67</b>	<b>27.60</b>	<b>13.85</b>

## Chapter One

### PERFORMANCE OF FIXED SERVICES

Subscriber Base crosses 43.8 million

#### 1.1 SUBSCRIBERS BASE: -

1.1.1 As on 30<sup>th</sup> Sept 2004, the Fixed lines services are being provided by 5 licensed private operators in addition to incumbents BSNL and MTNL. List of Fixed Service provider's along with their area of operation is given in table 1:

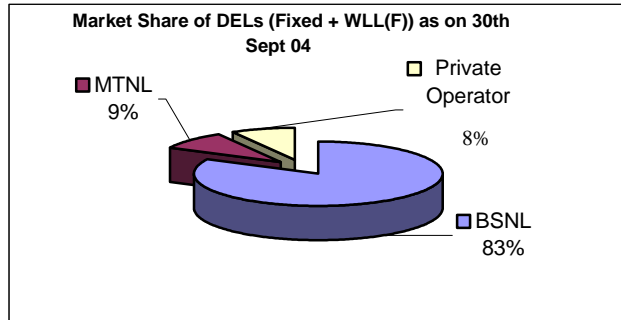
**Table 1**

S.No.	Name of the Service Provider	Area of Operation
1	BSNL	All India (except Delhi & Mumbai)
2	MTNL	Delhi & Mumbai
3	Bharti	MP, Delhi, Haryana, Tamil Nadu including Chennai, Karnataka
4	Tata Teleservices	Maharashtra, AP, Tamil Nadu, Chennai, Karnataka, Gujarat, Delhi
5	HFCL Infotel	Punjab
6	Shyam Telelink	Rajasthan
7	Reliance Infocomm Ltd.	AP, Bihar, Delhi, Gujarat Haryana, Himachal Pradesh, Karnataka, Kerala, MP, Maharashtra, Mumbai, Orissa, Punjab, Rajasthan, Tamil Nadu, Chennai, UP(E), UP(W), West Bengal, Kolkata

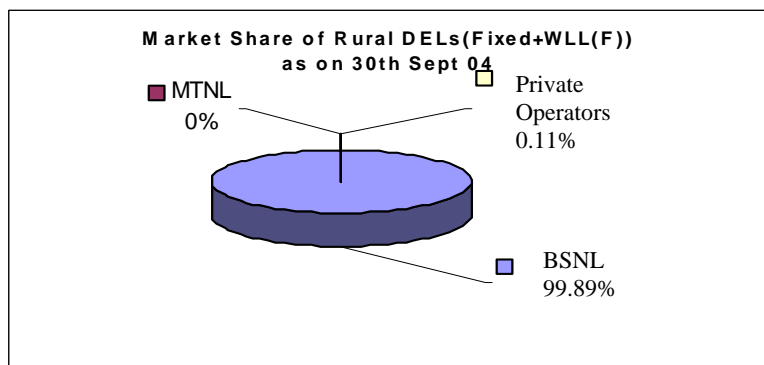
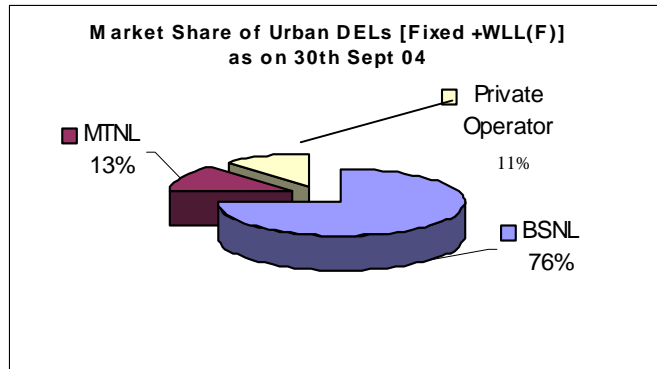
The information in this report is based on the data provided by the Fixed Service Providers. The operator-wise subscriber base is given in Table 1.1.

#### 1.1.2 Market Share of DELs

As on 30<sup>th</sup> Sept 2004, the total subscriber base of Fixed lines including WLL (F) stood at about 43.9 million. The incumbents BSNL and MTNL have 83 % and 9% market share respectively in the subscriber base, while all the five private operators have 8% share. In the current quarter, the share of private operators have increased by 1% and the share of MTNL has declined by 1%.

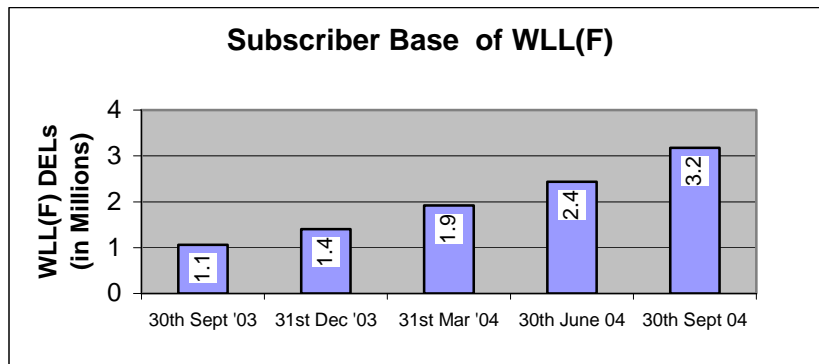
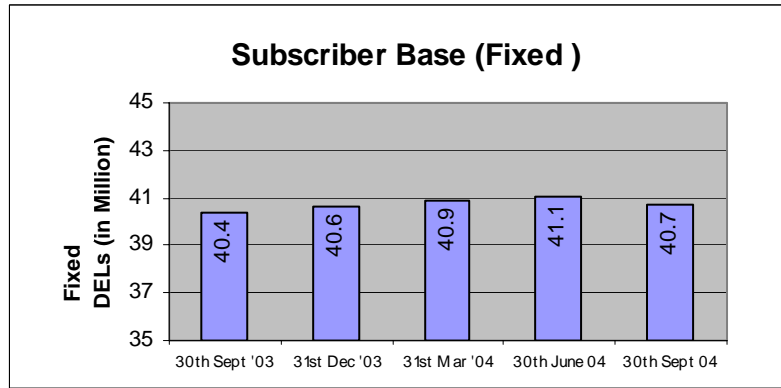
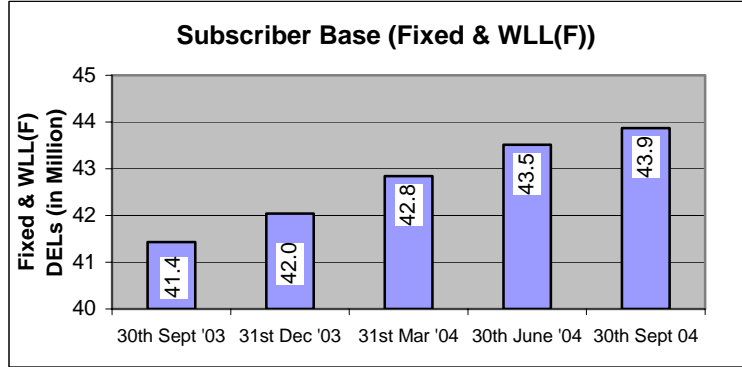


As on 30th Sept 2004 total urban DELs are 31.18 million and rural DELs are 12.69 million. The market share of Fixed Service Providers in Urban DELs and Rural DELs is depicted in the chart below:



### 1.1.3 Subscriber Base of Fixed & WLL(F) for last five quarters

The subscriber base of the Fixed service sector for last five quarters is depicted in the bar chart below:

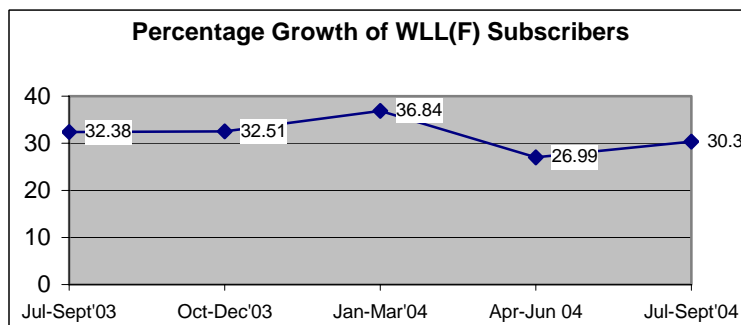
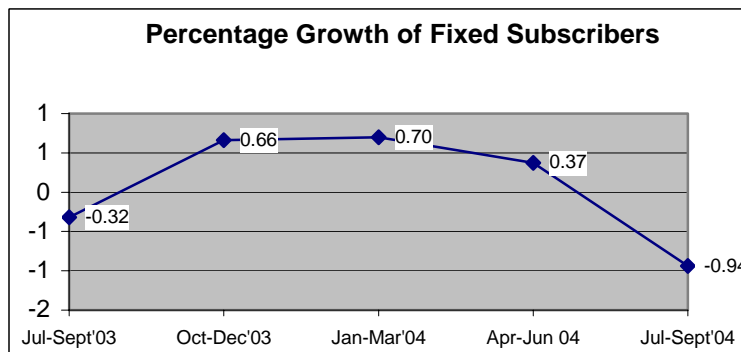
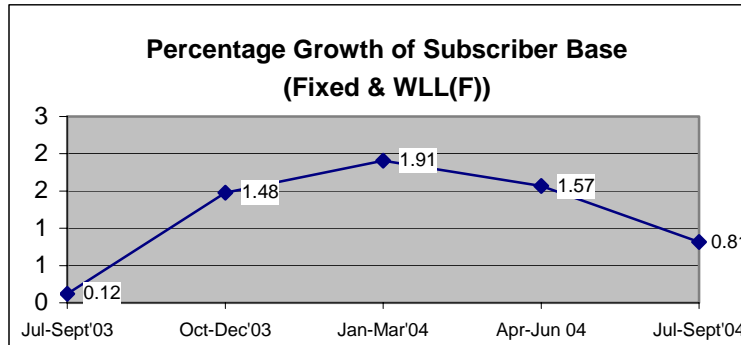




### 1.1.4 Growth of DELs

The Fixed Line Service sector has registered a growth of 3,54,259 lines during the Quarter from 1<sup>st</sup> July 2004 to 30<sup>th</sup> Sept 2004. The actual number of DELs has increased from 4,35,14,087 as on 30<sup>th</sup> June 2004 to 4,38,68,346 as on 30<sup>th</sup> Sept 2004. The overall percentage of growth in subscriber base during the Quarter is 0.81%.

#### **Average percentage growth rate of Fixed Wireline and WLL(F) Subscribers**

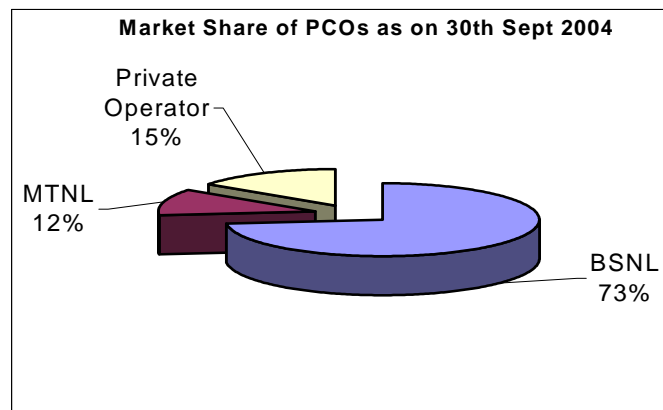


## 1.2 Other Performance Indicators: -

### 1.2.1 Public Call Offices:

During the current quarter 2,08,023 new PCOs have been added. Total number of PCOs in the country as on 30th Sept 2004 is 22,77,853. The contribution of BSNL is 16,71,018 i.e. 73% of the total PCOs. The contribution of MTNL and other private operators is 2,63,450 (12 %) and 3,43,385(15%) respectively.

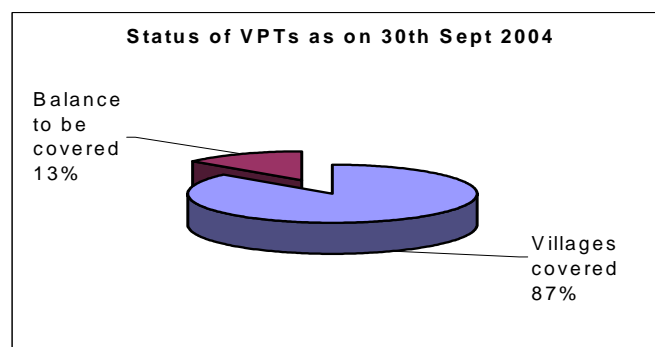
Operator-wise (BSNL/MTNL/Other Private Operators) market share of PCO is depicted in the chart below. Operator-wise details of PCOs is available at **Table 1.2**.



### 1.2.2 Village Public Telephones:

There are 6,07,491 villages in India. During the quarter ending 30<sup>th</sup> June 2004 there were 5,22,972 VPTs in the country whereas by the end of this quarter, the total number of VPTs has marginally increased to 5,24,301. Thus 1329 VPTs have been added during the current quarter. The total number of villages left uncovered, as on 30th Sept 2004 are 83190. BSNL has added 1392 VPTs during the quarter. There was a decrease of 63 VPTs of TTL(AP) during this quarter

Operator-wise details of village public telephones as on 30th Sept 2004 and achievement during the quarter is available at **Table 1.3**.



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## Chapter Two

### Performance of Mobile Services

Subscriber Base crosses 37.5 million.

#### PART A

**2.0 Details of service providers:** - Following operators were providing cellular mobile (GSM) service (in addition to 6 operators as shown in 1.1 of Chapter 1 providing Mobile (CDMA) services) in the respective service areas: -

Service Provider	Service Area	No. of Circles
Bharti	Andhra Pradesh, Karnataka, Punjab, Delhi, UP(W), MP, Maharashtra, Gujarat, Himachal Pradesh, Mumbai, Tamil Nadu, Kerala, Haryana, Chennai, Kolkata and Rajasthan, UP(E)	17
Hutch	Delhi, Kolkata, Mumbai, Andhra Pradesh, Karnataka, Chennai, Gujarat, Punjab, Haryana, Rajasthan, UP(E)	11
MTNL	Delhi, Mumbai	2
Idea	Gujarat, Madhya Pradesh, Andhra Pradesh, Maharashtra, Delhi, Kerala, Haryana and UP(W)	8
Reliance	Madhya Pradesh, West Bengal, Himachal Pradesh, Assam, Bihar, Orissa, NE	7
BPL	Mumbai, Maharashtra, Kerala, Tamil Nadu	4
Aircel	Tamil Nadu, Chennai	2
Spice	Punjab, Karnataka	2
BSNL	Andhra Pradesh, Karnataka, Punjab, UP(W), Madhya Pradesh, Maharashtra, Gujarat, Himachal Pradesh, Tamil Nadu, Kerala, Haryana, Chennai, Kolkata, UP(E), Rajasthan, West Bengal, Bihar, Orissa, North-East, Assam, J&K	21

Circle-wise details of Cellular, Fixed & Unified Access Service providers at the end of the quarter are given at Annex 2.1. All the service areas of the country have mobile operators ranging from 3 to 7.

#### 2.1 Growth of Subscribers Base: -

##### 2.1.1 Subscribers Base

The Mobile sector has almost touched a subscriber base of 43 million mark (GSM 33.6 million & CDMA 9.4 million) at the end of quarter ending 30<sup>th</sup> September 2004.

### 2.1.2 Addition in Subscribers Base

The mobile subscribers base stood at almost 43 million as against 37.8 million for the quarter ending 30<sup>th</sup> June 2004, adding around 5.24 million subscribers in this quarter.

### 2.1.3 Growth Rate

The growth for this quarter is 13.87% as against 12.2% for the quarter ending June 2004. M/s Reliance remains the largest mobile operator followed by M/s Bharti and M/s BSNL.

### 2.1.4 Company wise Market Share:

- a) The Subscriber Base of different Mobile operators is given in Table 2.1. The top five Mobile operators on the basis of market share are as under: -

(in Lakhs)

Mobile Group	Subscribers on Sept, 04	Market Share	Technology Used
Reliance Grp	9,041,113	21.0	GSM & CDMA
Bharti Grp	8,702,255	20.2	GSM
BSNL	7,964,284	18.5	GSM & CDMA
Hutchison Grp	6,371,335	14.8	GSM
IDEA Grp	4,355,230	10.1	GSM

The details of operator-wise subscribers of GSM and CDMA are given in Table 2.2.

- b) Distribution of Subscriber Base and market share of Mobile (GSM) service as on Sept'04 among Metros, Circles A to C is given in Table 2.3.

### 2.1.5 Change in Market Structure

M/s Idea Cellular Ltd has acquired M/s Escotel Mobile Communications Limited by purchasing its 100% shares in Kerala, Haryana and UP (W). M/s Idea is now providing services in 8 circles. M/s Bharti Cellular Ltd has started its services in UP (E) and now they are providing services in 17 circles.

In this quarter, the subscribers base of Cellular services in Gujarat & Karnataka has crossed the subscribers base of Fixed Network.

## PART B

### 2.2 Mobile Tariff Trends: -

#### 2.2.1 Minimum effective charge in Mobile Services for the quarter ending September 2004

Trends in tariffs on the basis of known weights for key parameters: - The minimum charge (amongst tariffs reported from all circles) available for local calls for Mobile service have been calculated for post-paid assuming 400 minutes of usage (both incoming and outgoing) per month.

#### 2.2.2 Minimum effective charge for local calls (Rs. per minute)

Service	Jun-04	Sept-04	% change
Mobile Service (Fully mobile) [GSM & CDMA]	0.77	0.77	--
Mobile Service (Limited to SDCA) [WLL (M)]	0.44	0.44	--

Assumptions:

- 1) Outgoing usage has been distributed in 70:25:5 for Fixed: Cellular: WLL (M).
- 2) 70:30 ratio has been applied for peak: off-peak hours.
- 3) 60% of the total usage has been attributed to incoming calls.
- 4) Average holding time for local calls has been taken as 2 minutes.
- 5) Interest on security deposit & advance month rental has been taken @ 8% p.a.

There has been no change in the minimum effective charge for mobile services during the quarter under review as compared to the previous quarter.

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## Chapter Three

### Performance of Internet Services

Subscribers base crosses 5 million mark

#### 3.1 Service Providers & Subscribers Base: -

For the quarter ending September 2004, 188 Internet Service Providers were operational. Bharat Sanchar Nigam Ltd (BSNL) has retained its top position and reported a subscriber base of 14.94 Lakhs against 12.76 Lakhs during the last quarter. Videsh Sanchar Nigam Limited has retained second position with a subscriber base of 9.85 Lakhs against 9.25 Lakhs. Mahanagar Telephone Nigam Limited (MTNL) retained third position and reported a subscriber's base of 9.15 Lakhs against 8.48 Lakhs subscribers during the last quarter. M/s Sify Ltd. has retained its fourth position during the quarter with a subscriber base of 7.25 Lakhs. Data Infosys reported a subscriber base of 2.26 Lakhs and remained at fifth place during the quarter ending 30<sup>th</sup> September 2004. (ref Table 3.1).

The reported subscriber base has touched 53.21 lakhs as on quarter ending 30<sup>th</sup> September 2004 as compared to 49.26 lakhs during the preceding quarter registering an increase of around 8% during the quarter.

#### 3.2 Internet Telephony: -

The Internet Telephony was thrown open for Internet service provider's w.e.f 1<sup>st</sup> April'02. DOT has given permission to 121 ISPs to offer Internet Telephony services as on September 2004, and as per the report submitted to TRAI, 42 ISPs are providing Internet Telephony services, the list of which is enclosed at Annex 3.2. Total minutes of the usage for Internet Telephony during the quarter were 36 million.

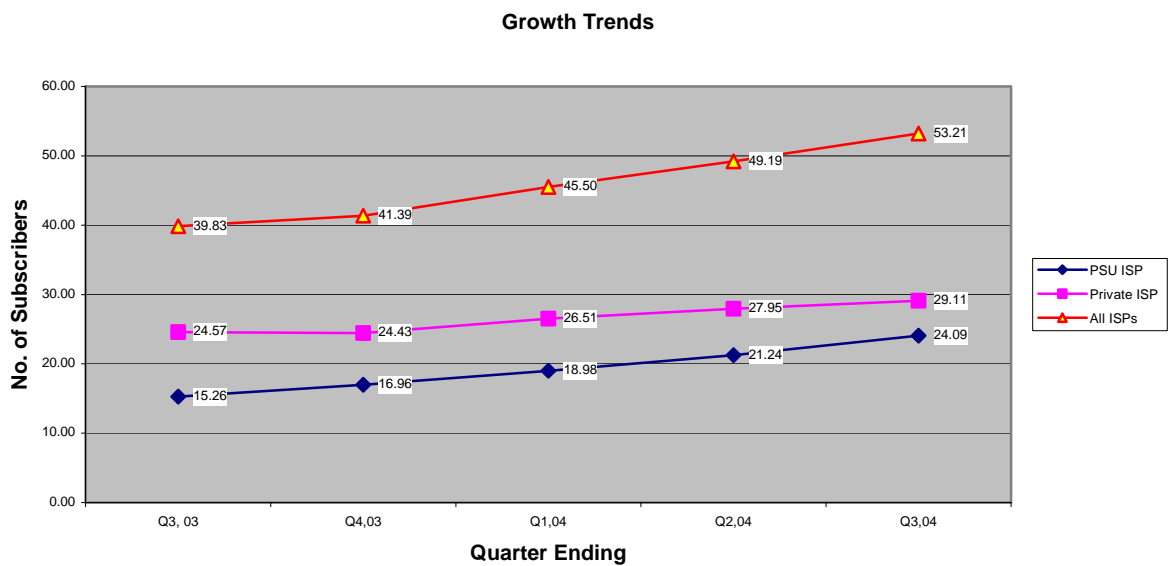
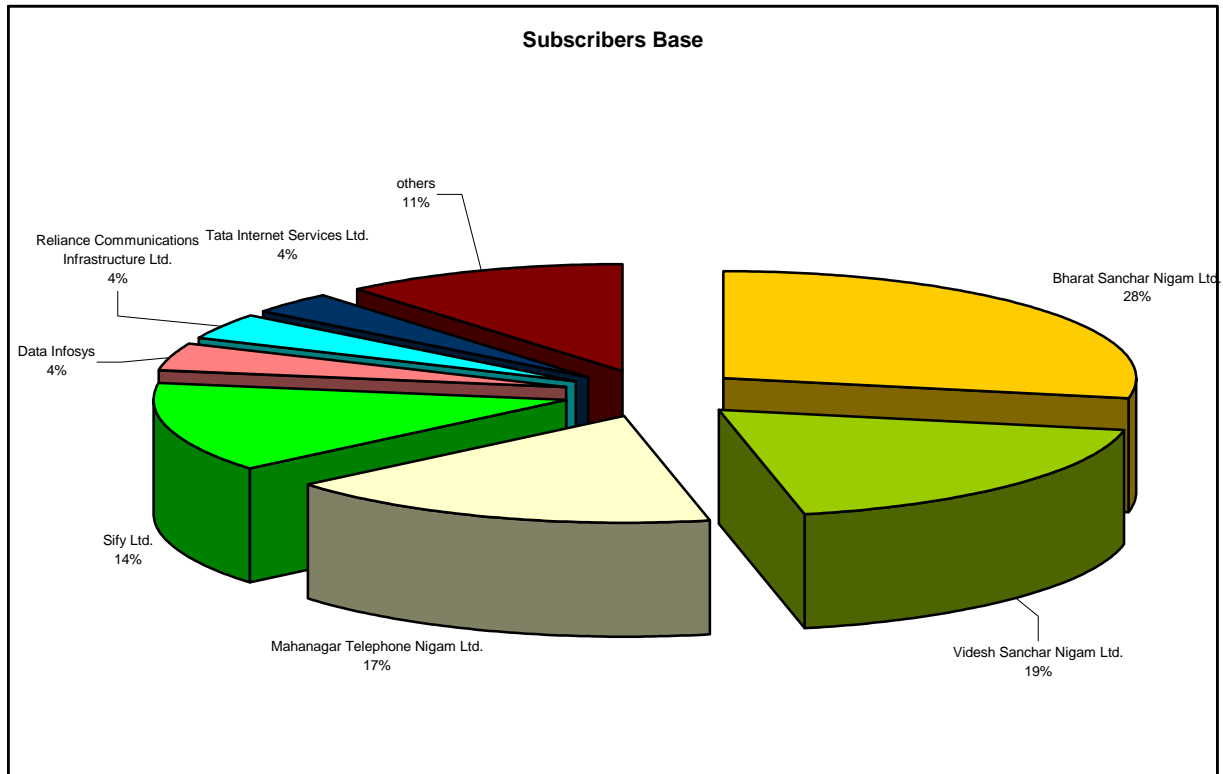
#### 3.3 Market Share: -

The reported subscriber base has touched 53.21 lakhs as on quarter ending 30<sup>th</sup> September 2004 as compared to 49.26 lakhs during the preceding quarter registering an increase of 8.17% during the quarter.

The market share of top 5 ISPs is as under:

ISPs	Market Share
Bharat Sanchar Nigam Ltd.	28.08%
Videsh Sanchar Nigam Ltd.	18.52%
Mahanagar Telephone Nigam Ltd.	17.20%
Sify Ltd.	13.63%
Data Infosys	4.24%

Among the Govt. owned ISPs, M/s BSNL has reported a subscriber's base of 14.94 Lakhs during the quarter ending 30<sup>th</sup> September 2004 as against 12.76 Lakhs during the previous quarter registering an increase of 17.13%. M/s MTNL have reported a subscriber base of 9.15 Lakhs against the subscriber base of 8.48 Lakhs reported during the previous quarter, registering an increase of 7.90 %.



### **3.4 Leased Lines Connectivity: -**

The numbers of Leased Lines connections was 10,744 during quarter ending 30<sup>th</sup> September 2004.

### **3.5 Cyber Cafes/Community Internet Centres (CIC): -**

There existed 10,709 Cyber Cafes during the quarter ending September, 2004, out of which 9,900 have been franchised by the ISPs and 809 are non-franchised.

### **3.6 High Speed Connectivity: -**

The number of subscribers accessing Internet through “Always On” connection reached 3.14 Lakhs showing a growth of 38.74% over the previous quarter.

### **3.7 Minutes of use per subscriber: -**

As reported by 44 ISPs, the average minutes of use per subscriber/ month is approximately 320 minutes.

### **3.8 Average Revenue Per User (ARPU) for ISPs: -**

A total of approx. Rs 417 crores revenue has been reported during the quarter. The average revenue per user (ARPU) per month for Internet usage was of the order of Rs 280.

### **3.9 International connectivity: -**

The bandwidth owned by various IGSP for their ISP operations and Leased lines is reported to be 4.8 GB for downlinking and 4.5 GB for uplinking.

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## Chapter Four

### Performance of Other Value Added Services

Growth trend continues

#### 4.1 Public Mobile Radio Trunked Service (PMRTS): -

Public Mobile Radio Trunked Service (PMRTS) is being provided by 13 operators.

##### 4.1.1 Performance during the Quarter Ending 30<sup>th</sup> September 2004:

- The subscriber base of PMRTS increased from 25409 in June 2004 to 25694 in Sept 2004 registering a marginal growth rate of 1.12%.
- Delhi, Mumbai, Bangalore and Chennai together account for 70% of market share of the total subscribers. Delhi leads the tally with the market share of 8821 subscribers followed by Mumbai and Bangalore with the market share of 3012 and 3463 subscribers respectively.
- Procall Limited leads the tally of subscribers with a subscriber base of 7720 followed by Arvind Mills and QuickCalls India Pvt. Ltd. with a subscriber base of 6695 and 3556 respectively.
- Mobilcom India Ltd. has not submitted their report in this quarter.

The subscriber base of service providers of PMRTS is given in Table 4.1.

#### 4.2 VSAT services: -

VSAT services are being provided by 11 VSAT service providers.

##### 4.2.1 Performance during the quarter ending 30<sup>th</sup> September 2004:

- In the present quarter, there was an addition of 1644 new subscribers. The total number of subscribers increased from 30627 in June, 2004 to 32271 in Sept 2004 registering a growth of 5.37% against the growth rate of 10.96% in quarter ending June, 2004. HCL Comnet remained the market leader with 10283 VSAT subscribers followed by Hughes Escorts Communications Ltd. (HECL) with 10137, Bharti BT with 4472 and Comsat Max with 4175 VSAT subscribers respectively.
- Telstra Vishesh Communication limited and RPG satellite Communications Pvt. Limited are having the negative growth of 15.09% and 5.06% respectively in this quarter.
- The number of subscribers of each service providers from quarter ending December, 2003 to September, 2004 along with the Market Share in terms of Percentage of Subscribers as on 30.09.2004 is given in Table 4.2.

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## Chapter Five

### Quality of Service (QoS) Performance

#### 5.1 Quality of Service performance of Basic Service Operators for the Quarter Ending September 2004: -

Based on Quality of Service Parameters reported by Basic Service Operators for the quarter ending September 2004, the information on QoS parameters is attached to this report as Annex 5.1.

From perusal of the report (Annex 5.1) following points emerge: -

**(1) Provision of telephone within 7 days for exchange areas declared “ On Demand”.**

41 out of 63 operators have not meet the TRAI QoS benchmark for this parameter. The performance of MTNL (Mumbai) and BSNL (all circles) is way below the benchmark of 100%. M/s Reliance Infocom Limited has reported 100% promptness in their all circles for this parameter.

**(2) Fault incidences per month per 100 telephones (should be less than 3 Fault per 100 phones per month)**

BSNL and MTNL have not met the stipulated QoS benchmark for this parameter in their all circles. Among the private operators only M/s Reliance Infocom, Bharti (except Delhi service area) and Tata Teleservices have met the prescribed benchmark of <3 in all service areas.

**(3) Percentage of faults repaired by next working day (should be >90%)**

17 out of 26 circles of BSNL have met the TRAI's QoS benchmark on “Fault Repair by next working day”. MTNL (Delhi & Mumbai) has failed to meet the specified QoS benchmarks. Among the private service operators, Reliance Infocom, Bharti, Tata (GJ, MH) and Shyam Telelink, Rajasthan have met the stipulated benchmark of >90%.

**(4) Mean Time to repair (MTTR) (should be <8hrs.)**

Only 6 out of 26 circles of BSNL have met the benchmark. MTNL (Delhi & Mumbai) have failed to meet the benchmark. Among the private service operators only Tata (AP, DL, TN, KTK, Chennai) have not met the QoS benchmark.

**(5) Grade of Service for junction between local exchanges (should be < 0.002)**

The Figure of Grade of Service not reported by BSNL. MTNL (Delhi & Mumbai) have achieved the desired benchmark. Among the private operators only Tata (Gujarat, TN & Chennai) have not met the stipulated benchmark.

**(6) Call Completion Rate in local network (should be >65%)**

18 out of 26 of BSNL and MTNL (Delhi and Mumbai) have not met the OoS benchmark. Among the private Operators HFCL (PB), Shyam Telelink (RJ), Bharti (TN) & Reliance (except UP-E) have achieved the desired QoS benchmark.

**(7) Metering and Billing credibility (Not more than 0.1% of bills should be disputed over a billing cycle)**

Only 5 out of 26 circles of BSNL have not met the overall QOS benchmark on disputed bills. These circles are MP, NE-I, Orissa, A & N & Jharkhand. MTNL (Delhi & Mumbai) has also not met the same. Among the Private Operators, TATA (except TN service area), HFCL and Bharti (TN & KTK) have not met the QoS benchmark of <0.1%.

**(8) Operator assisted Trunk Calls (Urgent calls should be answered within 1 hr and Ordinary calls within 2 Hrs.)**

For urgent operator assisted Trunk calls BSNL and MTNL have failed to meet the benchmark in all the circles. Among the private operators Bharti (TN) have met the QoS benchmark.

For Operator assisted ordinary trunk calls BSNL (All circles) and MTNL (Delhi, Mumbai) have failed to achieve the QOS benchmark. Among the private operators Shyam Telelink (Raj) and Bharti (DL, HR, KTK) have not met the QoS benchmark.

**(9) Customer Care: Promptness in attending 95% of customers requests (Benchmarks for Shifts, Closures and providing additional facilities are <3 days, <24 hours and <24hours respectively)**

**(i) Shifts :-**

BSNL (Except in Punjab and A&N) have failed to meet the requirement on customer care (shift) in all circles. MTNL (Delhi, Mumbai) have also failed to meet the requirement on Customer care. Among the private operators only Shyam Telelink and Reliance (all circles) have met the QOS benchmark on Customer Care (Shifts).

**(ii) Closures :-**

As regards 'Closures' these figures are not available for BSNL of all circles. MTNL (Mumbai) has not met the benchmark. Among the private operators Tata (GJ), Shyam (RAJ), Bharti (MP & Chhattisgarh, KTK) and Reliance infocom (all circles) have met the stipulated benchmark.

**(iii) Additional Facility :-**

BSNL has not reported the figure for additional facility. MTNL (Delhi and Mumbai) have failed to meet the QOS benchmark. Reliance, Tata (GJ), HFCL (PB) and Shyam Telelink (Rajasthan) have met the QoS benchmark.

M/s Reliance Infocom has reported 100% and M/s Shyam Telelink Limited, Rajasthan above 95% promptness in their all circles for attending customer requests regarding **shifts, closures and additional facilities**.

**(10) Percentage of repeat faults (should be <1%)**

In case of Repeat faults, BSNL in all circles (except in Assam, TN, UTTR, HP) & MTNL (Delhi & Mumbai) have failed to meet the QOS benchmark. Among the private Operators Reliance, Shyam (RAJ) and Tata (Delhi) are within TRAI's benchmark limits.

**5.2 Quality of Service performance of Cellular Mobile Service Providers for quarter ending 30<sup>th</sup> September 2004: -**

- a) In this quarter all Cellular Mobile Service Providers have submitted their QoS report to TRAI.
- b) BSNL (North East & UP - E), Bharti (UP -E) and Huchison Essar Limited (Punjab) have submitted their first performance report in this quarter. Thus, the number of service providers who have reported their QoS performance has increased from 78 to 82 in this quarter.

The summary of status of the service providers who have met the benchmarks in this quarter as compared to previous quarter is given in the following table:

Sr. No.	Parameter	Benchmark Marks	No. of operators meeting benchmarks	
			Sept'04	June'04
			Out of 82	Out of 78
1.	No. of faults (per 100 subscribers per month)	<1	66	62
2	Faults cleared within 24 hrs	100%	52	49
3	Accumulated down time of community isolation	<24 hrs	71	61
4	Call Success Rate (within licensee's own network)	>99%	51	43
5	Service Access Delay	Between 9 to 20 Sec	82	78
6	Call Drop Rate	<3%	78	77
7	% of connection with good voice quality	>95%	68	67
8	Complaints per 100 bills issued	<0.1%	49	43
9	% of complaints resolved with 4 weeks	100%	72	69
10	Period of all refunds/payment due to customers from the date of resolution of complaints as in (ii) above	<4 weeks	79	74

### 5.2.1 The analysis of PMR of 82 CMSPs is as under: -

- i) From the table, it is observed that there has been an improvement in the performance as compared to the previous quarter.
- ii) No. of faults (per 100 subscribers) for BSNL- Kolkata, BSNL- Assam, and TATA- Gujarat are 2.60%, 2.00% and 2.64% respectively which is way beyond the stipulated benchmark of TRAI <1%.
- iii) For the parameter "Fault cleared within 24 hrs" the performance of BSNL (HP, KOLKATA, Orissa, Raj) and TATA (Chennai, AP, Delhi) are 76.68%, 77.79%, 81.94%, 83.88%) and (70%, 73%, 82%) respectively, which is way beyond the stipulated benchmark of 100%.
- iv) The Call Success Rate for BSNL (MH, HP, KR, KTK) and Bharti cellular (MH & Goa) are 80.05%, 80.42%, 88.50%, 88.93% and 88.96% respectively, which is much below the benchmark of 99%.
- v) All the Service Providers have met the benchmark of the Parameter for "Service Access Delay".
- vi) Call Drop Rate for Reliance (Bihar) and BSNL (Assam, HP, HR) are 4.40% and 3.70%, 3.69%, 3.43% respectively which is below the stipulated benchmark of <3%.
- vii) No. of Complaints per 100 bills issued for BSNL (PB, KTK, Kolkata, MH, KR), TATA (Mumbai, MH) and Hutchison Essar (AP) are (6.3%, 3.95%, 2.4%, 1.77%, 1.1%), (2.45% , 1.22%) and (1.04%) respectively, which is way beyond the benchmark of 0.1%.

### 5.2.2 Details of Quality of service:

Detail of performance related to fault incidence and repair, network performance and billing complaints are available at Annex 5.2.

### 5.3 Quality of Service Performance of Internet Service Providers: -

5.3.1 The annex 5.3 indicates the Quality of Service achieved by Top 20 ISPs during the quarter: It is observed that most of the ISPs are able to meet the benchmarks, barring one or two cases.

5.3.2 The observations on QOS Benchmarks is as follows:

#### 5.3.2.1 *Service Activation Time:*

All the ISPs have met the benchmark of 6 hrs.

#### 5.3.2.2 *Time to Access:*

ISPs are required to achieve the benchmark 30 sec. All ISPs except one (Trak Online Net India Pvt. Ltd.) have met this target in this quarter.

5.3.2.3 *Probability of Accessing the ISP Node:*

ISPs are required to maintain the parameter of 80% for the first attempt, 90% for the second attempt and 99% for the third attempt. All the ISPs are able to meet this benchmark.

5.3.2.4 *ISP Node unavailability:*

ISP Nodes unavailability should not exceed 30 minutes in a month. All ISPs are able to achieve this benchmark.

5.3.2.5 *Grade of Service:*

ISPs are required to maintain the Grade of Service on the link connecting PSTN node to the ISP node as 1 in 100. One ISP (Trak Online Net India Pvt. Ltd.) has not able to meet the target, another ISP (VSNL) has informed that the information regarding the above mentioned benchmark can not be provided as the BSO has not given the information to them, WWW Communications has not provided the data as per the prescribed format.

5.3.2.6 *Mean Time to Restore (MTTR):*

As per clause 1.9 schedule 'C' of ISP license, ISPs are required to rectify 90% of faults resulting due to subscriber complaints within 24 hours and 99% within three days.

All the ISPs have been rectifying the fault within stipulated period of three days.

\*\*\*\*\*

Table 1.1

## Subscriber Base of Fixed Services

Operator wise details of Subscriber base					
Sr. No.	FSO	Area of Operation	30th Sept 2004		
			Urban	Rural	Total
1	BSNL	All India(except Delhi& Mumbai)	23474342	12672981	36147323
2	MTNL	Delhi & Mumbai	4123826	191	4124017
3	Bharti Telenet Ltd	MP, Delhi, Haryana, Tamil Nadu, Karnataka	764872	607	765479
4	Tata Teleservices Ltd	Maharashtra, AP, Tamil Nadu, Karnataka, Gujarat, Delhi, Chennai	1635037	3998	1639035
5	HFCL Infotel Ltd	Punjab	161284	753	162037
6	Shyam Telelink Ltd	Rajasthan	105068	3113	108181
7	Reliance Infocomm Ltd	AP, Bihar, Delhi, Gujarat, Haryana, HP, Karnataka, Kerala, MP, Maharashtra, Mumbai, Orissa, Punjab, Rajasthan, Tamil Nadu (Including Chennai), UP (E), UP(W), West Bengal, Kolkata	916023	6251	922274
<b>Grand Total</b>			<b>31180452</b>	<b>12687894</b>	<b>43868346</b>

Table 1.2

## Details of Public Call Offices (PCO)

S.No	Service Providers	Area of Operation	PCOs as on 30.09.04	PCOs added during the quarter ending 30.9.2004
1	BSNL	All India (except Delhi & Mumbai)	1671018	73536
2	MTNL	Delhi & Mumbai	263450	13808
3	Bharti	MP, Delhi, Haryana, Tamil Nadu Including Chennai, Karnataka	90519	11942
4	HFCL	Punjab	38544	14837
5	Tata	Maharashtra, Mumbai, AP, Tamil Nadu, Chennai, Gujarat, Karnataka, Delhi	70174	12064
6	Reliance	AP, Bihar, Delhi, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, MP, Maharashtra, Mumbai, Orissa, Punjab, Rajasthan, Tamil Nadu (incl. Chennai) UP(E),UP(W), West Bengal, Kolkata	127502	79693
7	Shyam Telelink	Rajasthan	16646	2143
	<b>TOTAL</b>		<b>2277853</b>	<b>208023</b>

\* Source - Operators



Table 1.3

## Details of Village Public Telephones (VPT)

S.No	Service Providers	Area of Operation	VPTs as on 30.6.04	VPTs as on 30.9.04	Achievement during the Qtr. ending 30.9.2004
1	BSNL	All India(except Delhi& Mumbai)	510021	511413	1392
2	MTNL	Delhi & Mumbai	191	191	0
3	Bharti	MP, Delhi, Haryana, Tamil Nadu including Chennai, Karnataka	607	607	0
4	HFCL	Punjab	968	968	0
5	Tata Teleservices	Maharashtra, Andhra Pradesh, Tamil Nadu Including Chennai, Karnataka, Gujarat, Delhi	4061	3998	-63
6	Reliance	AP, Bihar, Delhi, Gujarat, Haryana, HP, Karnataka, Kerala, MP, Maharashtra, Mumbai, Orissa, Punjab, Rajasthan, Tamil Nadu, Chennai, UP(E),UP(W), West Bengal, Kolkata	4114	4114	0
7	Shyam Telelink	Rajasthan	3010	3010	0
	<b>TOTAL</b>		<b>522972</b>	<b>524301</b>	<b>1329</b>

\* Source - Operators

\* VPTs figures shown above are also included in Rural DELs shown in Table 1.1

Table 2.1

**Subscriber Base of Mobile operators**

<b>Mobile Groups and their market share</b>			
<b>Cellular Group</b>	<b>Subscribers on Sept, 04</b>	<b>Market Share (%)</b>	<b>Technology Used</b>
Reliance Grp	9,041,113	21.0	GSM & CDMA
Bharti Grp	8,702,255	20.2	GSM
BSNL	7,964,284	18.5	GSM & CDMA
Hutchison Grp	6,371,335	14.8	GSM
IDEA Grp	4,355,230	10.1	GSM
BPL Grp	2,341,997	5.4	GSM
Spice Grp	1,415,943	3.3	GSM
Aircel Grp	1,466,076	3.4	GSM
Tata Teleservices	690,636	1.6	CDMA
MTNL	574,443	1.3	GSM & CDMA
HFCL	43,017	0.1	CDMA
Shyam Telelink	26,635	0.1	CDMA
<b>Total Subscribers</b>	<b>42,992,964</b>	<b>100</b>	<b>GSM &amp; CDMA</b>

\* Source - Operators

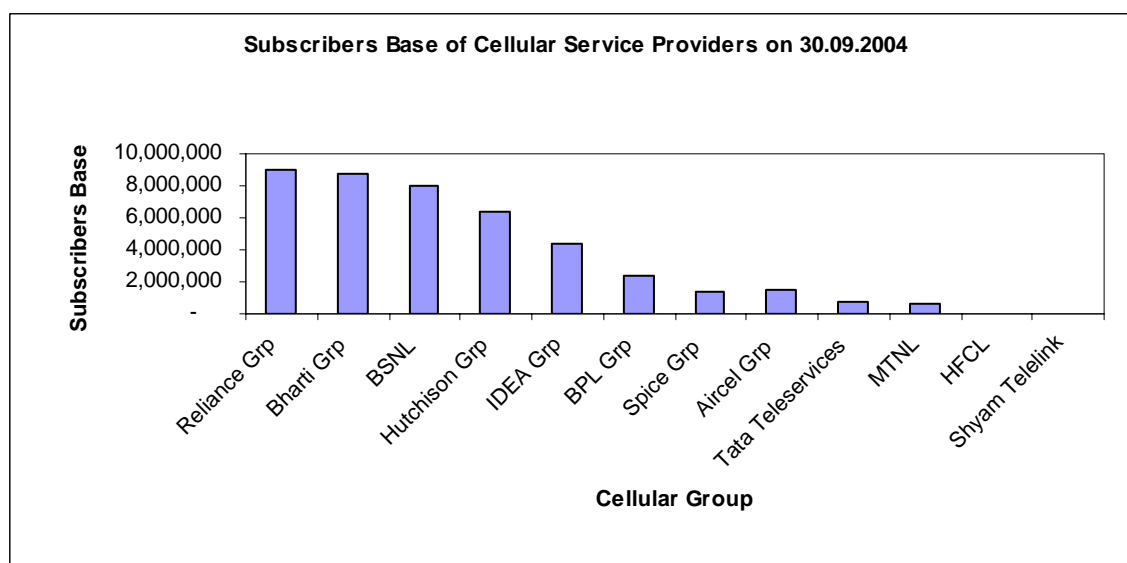


Table 2.2

### Market Share of Mobile (GSM + CDMA) Service Providers

a) The market share of different GSM operators is given below:

<b>Cellular Group</b>	<b>No of Subscribers</b>	<b>Market Share</b>
Bharti Group	8702255	25.9
BSNL	7539632	22.5
Hutchison Group	6371335	19.0
Idea Group	4355230	13.0
BPL	2341997	7.0
Spice Group	1415943	4.2
Reliance	939821	2.8
MTNL	440469	1.3
Others - Aircel Group	1466076	4.4
<b>Total</b>	<b>33572758</b>	<b>100</b>

b) The market share of different CDMA operators is given below:

<b>CDMA Group</b>	<b>No of Subscribers</b>	<b>Market Share</b>
Reliance Infocomm	8101292	86.00
Tata Teleservices	690636	7.33
BSNL	424652	4.51
MTNL	133974	1.42
HFCL	43017	0.46
Shyam Telelink	26635	0.28
<b>Total</b>	<b>9420206</b>	<b>100</b>

**Table 2.3**

**Growth Pattern in Mobile (GSM) Subscriber Base**

**Mobile (GSM) Subscribers Base**

The market share distribution among Metros & Circles A to C is given below:

<b>Circle</b>	<b>No. of Subscribers</b>	<b>Market Share</b>
Metros	12.65 million	29.42%
Circles 'A'	15.80 million	36.74%
Circles 'B'	12.60 million	29.32%
Circles 'C'	1.94 million	4.52%

The market share distribution among Metros, Circle A, Circle B & Circle C for the three quarters is as under:

<b>Category</b>	<b>March'04</b>	<b>June'04</b>	<b>Sept,04</b>
Metros	10.55	11.53	12.65
A' Circle	12.55	13.86	15.80
B' Circle	9.29	10.84	12.60
C' Circle	1.31	1.53	1.940

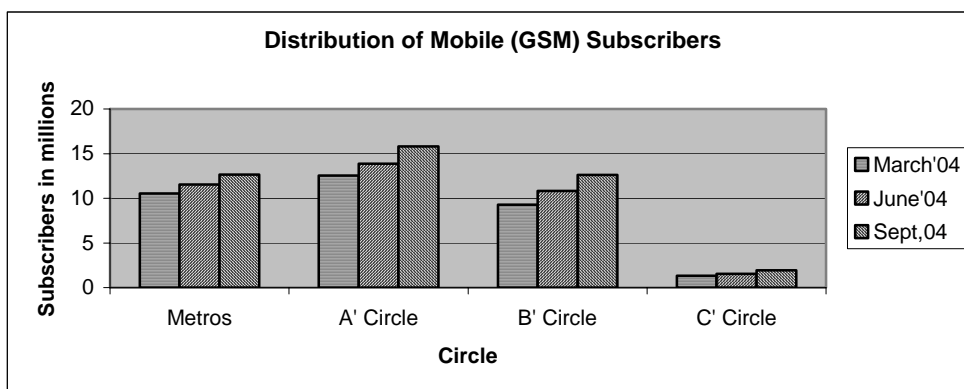


Table 3.1

## Subscribers Base of Internet Services

S. No.	Name of ISP	Category	Area of Operation	Jun-04	Sep-04
1	Bharat Sanchar Nigam Ltd.	A	All India	1275522	1494037
2	Videsh Sanchar Nigam Ltd.	A	All India	925062	985242
3	Mahanagar Telephone Nigam Ltd.	B	Mumbai & Delhi	848267	915269
4	Sify Ltd.	A	All India	693181	725038
5	Data Infosys	A	All India	223850	225621
6	Reliance Communications Infrastructure Ltd.	A	All India	224345	209060
7	Tata Internet Services Ltd.	A	All India	179477	179477
8	Bharti Infotel Ltd. (Bharti Broadband Network Ltd.(Bharti BT))	A	All India	64430	80937
9	HCL Infinet Ltd.	A	All India	56135	46862
10	Shyam Internet Service Pvt. Ltd.	A	All India	30788	41164
11	BG Broadband India Pvt. Ltd.	B	Surat SSA, Mumbai	23185	39600
12	ICENET.NET Ltd.	B	Gujrat	31317	33187
13	Sab Infotech	B	Punjab, Karnal & Dharamshala	31660	32896
14	Hathway Cable & Data Pvt Ltd.	A	All India	23172	29548
15	Tata Teleservices (Maharashtra) Ltd. (Hughes Telecom)	A	All India	21594	20765
16	Data Access Pvt. Ltd.	A	All India	20398	19655
17	Fascel Ltd.	B	Gujarat	18001	18001
18	Trak Online Net India	A	All India	25588	16506
19	WWW Communications Ltd.	B	Delhi	13032	13032
20	Asianet Sattelite Communications Ltd.	B	Kerala	9050	11851
21	Broadband Pacenet (I) Pvt. Ltd.	B	Mumbai	10800	11600
22	HFCL Infotel Ltd.	B	Punjab	9852	11397
23	Rolta India Ltd.	B	Mumbai	12042	11101
24	Emmsons Infotech Ltd.	B	Punjab	10200	10200
25	Primus Telecommunications India Ltd.	A	All India	5940	7988
26	S. S. net Com Pvt Ltd.	B	North East	6968	7169
27	Wilnet Communications	B	Gujarat	6192	6192
28	Seven Star Dot Com Pvt. Ltd.	B	Khar(w), Jogeshwari (w)	5101	6125
29	In 2 Cable.com(India) pvt. Ltd.	A	All India	5003	5712
30	RPG Infotech Ltd. (Sprint RPG India)	A	All India	5299	5299
31	Space Online (P) Ltd.	B	Gujarat	4332	4332
32	Southern Online Services Ltd.	B	Andhra Pradesh	4263	4263
33	Spectra Net Ltd	A	All India	2940	3290
34	Jindal Online.com Ltd.	B	Gujrat	3177	3177
35	E-Comm Opportunities Pvt. Ltd.	B	Gujrat	3124	3124
36	Narmada Cyberzone Pvt. Ltd.	B	Gujrat	2910	3036

37	City Online Services Pvt. Ltd.	B	Andhra Pradesh & Karnataka	3033	3033
38	West Bengal Electronics Industry Development Corporation Ltd.	B	Calcutta	2745	2989
39	Forum Infotech (P) Ltd.	C	Srinagar SSA	2882	2882
40	Blazenet Pvt. Ltd.	B	Gujrat	2809	2809
41	Data Link Impex Pvt. Ltd.	B	Gujrat	2709	2709
42	Sixth Sense Informatics Pvt. Ltd.	B	Mumbai	2550	2550
43	Navin.com (I) Pvt. Ltd.	A	All India	2257	2257
44	Digital 2 Virtual ISP Private Ltd.	C	vadodara	2199	2199
45	Trikon Electronics	B	Mumbai	1750	2147
46	Hughes Escorts Communications Ltd.	A	All India	2027	2027
47	Ankhnnet Information Pvt. Ltd.	B	Mumbai	1977	2010
48	Primenet Global Ltd.	A	All India	2001	1832
49	HCL Comnet	A	All India	1718	1765
50	Tawi e.com	C	Jammu Tawi	1611	1761
51	Descon Ltd.	B&C	Kolkata, West Bengal	1555	1717
52	Kelnet Communication Services (P) Ltd.	C	Trivendrum	1715	1715
53	iPath India Pvt. Ltd.	C	Ernakulam	1983	1687
54	Pioneer Online Service Pvt. Ltd.	B	Andhra Pradesh	1630	1630
55	Nettlinx Ltd.	B	Andhra Pradesh	4102	1379
56	Vasnet Communications Pvt. Ltd.	C	Mangalore SSA	1320	1320
57	Mylai Karpagamba Information System Pvt. Ltd.	B	Chennai	1275	1289
58	Pacific Internet India	A	All India	1400	1263
59	Swiftmail Communications Ltd.	A	All India	1169	1186
60	Weikfield Mnemonix Infonetworks Pvt. Ltd.	B	Pune	1150	1150
61	Siti Cable Network (Zee Interactive Multimedia Ltd.)	A	All India	1153	1137
62	Hathway Bhawani Cable & Datacom	B	Mumbai	949	1082
63	Comsat Max Ltd.	A	All India	1042	1044
64	GTL Ltd.	A	All India	1028	1028
65	Online Media Solutions Ltd.	B	Andhra Pradesh	1201	1000
66	Jain Info net Pvt Ltd.	B	Rajasthan	986	986
67	Patriot Automation	A	All India	956	956
68	Spectrum softech Solutions	C	Ernakulam SSA	955	955
69	Broadlane Network Pvt. Ltd.	C	Kalyan SSA	774	878
70	ERNET India Ltd.	A	All India	837	860
71	Micky Online Pvt. Ltd.	C	Moradabad, Nainital	850	850
72	Bhasinsoft India Ltd.	B	Karnataka	761	749
73	IOL Broadband Ltd. (India Online Network Ltd.)	B	Mumbai	721	721
74	Rida Communications Pvt. Ltd.	C	Aligarh	703	703
75	Bohra Prastithan Pvt. Ltd.	C	Udaipur SSA	665	686
76	Sujan Engineering Pvt. Ltd.	C	Vadodara SSA	667	667
77	Value Heathcare Ltd.	B	Mumbai	630	630
78	Speed Online.net Pvt. Ltd.	C	Rajkot	719	629
79	Ortel Communications Ltd.	C	Bhubaneshwar	1382	625
80	Opto Networks Pvt.Ltd.	C	Ghaziabad, Meerut SSA	624	624

81	Kappa Infotech Pvt Ltd.	C	Kota SSA	594	594
82	Growth Compusoft Exports Ltd.	B	Gujrat	559	548
83	Chanchalan Electronics Pvt. Ltd.	C	Ranchi	531	531
84	Viraj Telecom Ltd.	B	Karnataka	502	502
85	Antriksh Technologies Pvt. Ltd.	C	Jammu SSA	516	483
86	Bhaskar Multinet Pvt. Ltd.	C	Jaipur SSA	465	465
87	Quest Consultancy Pvt. Ltd.	C	Valsad	439	454
88	deLaila Industry Pvt. Ltd.	C	Srinagar SSA	416	416
89	Silicon Mountains (I) Ltd.	B	Maharashtra	409	409
90	CJ Online Pvt. Ltd.	C	Ghaziabad SSA	594	403
91	Websurf Pvt. Ltd.	C	Kalyan SSA	398	398
92	Gateway Systems Pvt. Ltd.	A	All India	393	381
93	Lee & Nee Softwares (Exports) Ltd.	C	Bhuvaneshwar	422	366
94	My Net Services Pvt	C	Salem	346	346
95	ISP Solutions India pvt. Ltd.	C	Coimbatore SSA	335	344
96	Mac Info Pvt. Ltd.	B	Hydrabad	340	340
97	My Guru Online	B	Andhra Pradesh	329	329
98	Rajasthan Telematics Ltd.	B	Rajasthan	325	325
99	Excel Infotech Ltd.	B	Punjab	308	308
100	Excel media Pvt Ltd.	B	Andhra Pradesh	308	308
101	GUJ Info Petro Ltd.(GIPL)	A	All India	311	305
102	Digital Nagpur Online Pvt. Ltd.	C	Nagpur	304	304
103	SpaceCom Broadband Network Ltd.	B	Delhi	292	292
104	Bareilly Communications Pvt Ltd.	C	Bareilly SSA	290	290
105	Sanchar Telenetwork Pvt. Ltd.	C	Bhavnagar SSA	283	283
106	n-Logue Communications(P) Ltd	A	All India	266	266
107	Jumpp India Pvt. Ltd.	A	All India	350	250
108	Nachiket (I) Management Services (P) Ltd. (Diksha Cyber City)	C	Sri Ganganagar	237	237
109	NetMagic Solutions (P) Ltd.	B	Mumbai	198	211
110	Emtici Engineering ltd.	C	Khera SSA	207	207
111	Bhupati Hotels Pvt. Ltd.	C	Visakhapatnam	123	203
112	CJM Consultancy Services Pvt. Ltd.	B	Delhi	232	200
113	Swastik netvision telecom pvt. Ltd.	B	Gujrat	178	194
114	Planet Internet Satellite Pvt. Ltd.	C	Nadiad SSA	203	193
115	del DSL Internet Pvt. Ltd.	B	Delhi, Ghaziabad, Gurgaon	139	159
116	Starnet Online Services Ltd.	C	Visakha patnam SSA	154	154
117	Trans Virtual Pvt. Ltd.	C	Guwahati	150	150
118	Assured Web Technologies Pvt.	C	Bhopal SSA	143	143
119	North East Online Services Pvt. Ltd.	C	Guwahati	141	141
120	Chandra net Pvt. Ltd.	B	Gujrat	140	140
121	Trident Netcom Solutions Pvt. Ltd.	A	All India	136	136
122	Manipal Ecommerce Ltd. (Manipal Control Data Electronic Commerce Ltd.)	B	Karnataka	127	132
123	Srishti Open systems Pvt ltd.	C	Trivendrum	143	126
124	A-Team Information Technology Ltd.	C	Erode	125	125
125	Estel Communications Pvt. Ltd.	A	All India	120	120
126	Surevin Internet Services Ltd	C	Ghaziabad SSA	150	120
127	Q Tel Comtech Ltd.	C	Gurgaon	109	109

128	Dialnet Communications Ltd.	B	Delhi	145	107
129	i2i Enterprise Ltd.	A	All India	65	107
130	Reach Network India Pvt. Ltd.	A	All India	105	105
131	Czars Oleoresin Pvt. Ltd.	C	Gulbarga	49	102
132	Aksh Broadband Ltd.	C	Jaipur SSA	140	90
133	Broad Range Application Integrated Networks Solutions Pvt. Ltd.	C	Bokaro SSA	88	88
134	Gujrat State Petroleum Corp Ltd.	B	Gujrat	86	86
135	Centre for Development of Advanced Computing, C-DAC	C	Ghaziabad	76	76
136	Master Chip	C	Nizamabad	72	72
137	Micromap Satcom Pvt. Ltd.	C	Lucknow	60	60
138	L&T Finance Ltd. (L&T Netcom Ltd.)	A	All India	61	59
139	Direct Internet Pvt. Ltd.	B	Delhi	56	56
140	Apna Telelink Pvt LTD	C	Jalandhar SSA	46	46
141	Access Online Pvt. Ltd.	B	Mumbai	45	43
142	Tata Power Company Ltd.	A	All India	37	38
143	Arun Girija Communications Pvt Ltd.	C	Patna SSA	36	32
144	Indian Quotations Systems Pvt. Ltd.	B	Mumbai	32	32
145	Karvy Consultant Ltd.	B	Andhra Pradesh	30	30
146	shreedhar Infosys Ltd.	C	Varanasi SSA	54	23
147	PBC Venture Ltd. (earlier Chemical & Metallurgical Design Co. Ltd..0)	B	Delhi	20	22
148	GNFC	A	All India	18	21
149	Sree Sree Infotainment Pvt. Ltd.	C	Vishakapatnam	20	20
150	Paya Computers Services (P) Ltd.	C	Dhanbad	19	19
151	Essel Shyam Communication Ltd,	A	All India	18	18
152	MX Solutions Pvt. Ltd.	B	Kerala	17	17
153	Ice Network (P) Ltd.	B	Bangalore	15	15
154	World Phone Internet services (P) Ltd.	A	All India	15	15
155	Astro Network India Pvt. Ltd.	A	All India	13	13
156	Astra Infonets Pvt. Ltd.	B	Hydrabad	15	12
157	RailTel Corporation of India Ltd.	A	All India	12	12
158	Beacon Broadband Networks Pvt. Ltd.	C	Durg SSA	10	10
159	Uttar Pradesh Network Pvt. Ltd.	B	Uttar Pradesh (E&W)	10	10
160	World tel TamilNadu Pvt. Ltd.	B	Tamilnade circle excluding Chennai & Chennai	10	10
161	Cyquator Technologies Ltd.	A	All India	9	9
162	Samkhya Networks (P) Ltd.	C	Gurgaon	8	8
163	Software Technology Park of India	A	All India	8	8
164	Bihar Network Pvt. Ltd.	B	Bihar	5	5
165	Giga Solutions Pvt. Ltd.	B	Maharashtra	5	5
166	Haryana Cybernet Pvt. Ltd.	B	Haryana	5	5
167	Indus ind Cable Television Pvt. Ltd.	B	Mumbai	5	5
168	Infomagic Services Pvt. Ltd.	B	Mumbai	5	5
169	Kerala communication Network Pvt. Ltd.	B	Kerala	5	5
170	Kushagra Telecom Pvt Ltd.	C	Ghaziabad SSA	5	5
171	MP Network Pvt. Ltd.	B	Madhya Pradesh	5	5
172	Orissa Network Pvt. Ltd.	B	Orissa	5	5



173	Punjab Communications Ltd	B	Punjab	5	5
174	Punjab Cybernet Pvt. Ltd.	B	Punjab	5	5
175	Tandem Infotech Pvt. Ltd.,	C	Trivandrum	5	5
176	Godrej Infotech Ltd.	B	Mumbai	4	4
177	Compucom (I) Ltd.	C	Jaipur SSA	3	3
178	Surana Telecom Ltd.	B	Andhra Pradesh	3	3
179	Worldwide com Pvt. Ltd.	C	Saharanpur	3	3
180	Bharti Aquanet Ltd.	A	All India	2	2
181	CMC Ltd.	A	All India	2	2
182	iServe India Pvt Ltd.	A	All India	1	1
183	Reliance Engineering Associates Pvt. Ltd. (Broadband Solutions)	A	All India	1	1
184	Tata Power Broadband Company Ltd.	B	Mumbai	1	1
185	Vehtel Obconic Internet Protocol Pvt. Ltd.	B	Andhra Pradesh	1	1
186	Bharat Connect Ltd.	B	Delhi	1	0
187	Dishnet Wireless Ltd.	A	All India	0	0
188	Nomus Internet Systems	B	Andhra Pradesh	1	0
	<b>Total</b>			<b>4919136</b>	<b>5320881</b>

Table 4.1

**Subscriber Base of Public Mobile Radio Trunking Service (PMRTS)**

Total number of operators: 13  
 Number of operators who have submitted reports: 12

Sr. No.	Name of the Service Provider	Operative Area	Subscriber Base as on 30-06-2004	Subscriber Base as on 30-09-2004
1	Aryadoot Transport Pvt. Ltd.	Vishakhapatnam	939	953
2	Jet-Aiu Skyline Transport Pvt. Ltd.	Indore	370	353
3	Container Movement (Bombay) Transport Pvt. Ltd.	Delhi	239	5
4	Arya Offshore Services Pvt. Ltd.	Mumbai	901	882
		Chennai	717	771
	<b>Total</b>		<b>1618</b>	<b>1652</b>
5	Hapag Llyod (German Express Shipping Agency (India) Pvt Ltd.	Navi Mumbai (Belapur)	396	397
		Delhi	353	587
	<b>Total</b>		<b>749</b>	<b>984</b>
6	United Liner Agencies of India (Pvt.) Ltd	Delhi	569	606
		Jamnagar	0	0
		Calcutta	953	920
	<b>Total</b>		<b>1522</b>	<b>1526</b>
7	Procall Limited	Delhi	6475	6611
		Jaipur	219	237
		Gurgaon	629	246
		Faridabad	273	626
	<b>Total</b>		<b>7596</b>	<b>7720</b>
8	The Arvind Mills Ltd.	Delhi	948	946
		Faridabad	1	1
		Mumbai	1182	1279
		Vashi	46	46
		Ahmedabad	305	311
		Baroda	668	637
		Surat	920	905
		Chennai	1022	1082
		Bangalore	1432	1488
	<b>Total</b>		<b>6524</b>	<b>6695</b>
9	Iconet Communication Pvt. Ltd	Kotagiri		

		Yercaud Kodaikanal	License Surrendered	License Surrendered
	<b>Total</b>		<b>0</b>	
10	Smartalk Pvt Limited	Pune	449	625
		Vashi	420	476
		Mumbai	303	282
	<b>Total</b>		<b>1172</b>	<b>1383</b>
11	QuickCalls India Pvt. Limited	Bangalore	1794	1760
		Hyderabad	925	1004
		Chennai	874	792
	<b>Total</b>		<b>3593</b>	<b>3556</b>
12	Bhilwara Telenet Services Pvt Ltd.	Mumbai	744	569
		Delhi	0	0
	<b>Total</b>		<b>744</b>	<b>569</b>
13	Mobilkom India Limited*	New Delhi	66	66
		Shimla	17	17
		Dhanbad	0	0
	<b>Total</b>		<b>83</b>	<b>83</b>
14	India Satcom Ltd.	Bangalore	260	215
15	ITI LTD.	Madurai	License Surrendered	License Surrendered
		Hyderabad		
		Chennai		
		Ahmedabad		
		Vadodra		
16	Hofintel Ltd.	Hyderabad	License Surrendered	License Surrendered
		Chennai		
	<b>Grand Total</b>		<b>25,409</b>	<b>25,694</b>

Table 4.2

## Subscriber Base of VSAT Service Providers

S.No.	Service Provider	31.12.2003	31.03.2004	30.6.2004	30.9.2004	Percentage of Market Share (%) as on 30.09.2004
1	Hughes	7263	8395	9955	10137	31.41
2	HCL Comnet	5833	8376	9581	10283	31.86
3	Comsat Max	3833	4210	4085	4175	12.94
4	Bharti BT	3824	3829	4053	4472	13.86
5	Essel Shyam	2005	2040	2066	2144	6.64
6	Tata Services	176	367	503	700	2.17
7	Telstra Vishesh	159	159	159	135	0.42
8	RPG Satellite Communications Pvt. Ltd.	91	79	79	75	0.23
9	HFCL	67	67	67	71	0.22
10	ITI *	53	53	53	53	0.16
11	GNFC*	26	26	26	26	0.08
	<b>Total</b>	<b>19778</b>	<b>23330</b>	<b>30627</b>	<b>32271</b>	<b>100.00</b>

\* The Service Providers have not provided the data so the last quarter data have been retained.

## Details of Fixed Service Licenses issued to private operators

Service Provider	Service Area	DoT. Letter. Reference No.	License No.	Date
<b>Bharti</b>	M P		17-12/95-BS-II	28.02.1997
<b>HFCL</b>	Punjab	10-10-2003-BS-II / Vol-II	17-15/95-BSII/Punjab	07.11.1997
<b>Tata</b>	Maharashtra including Mumbai	10-10-2003-BS-II	17-11/95-BS-II	30.09.1997
<b>Shyam</b>	Rajasthan	10-10-2003-BS-II / Vol-II	17-16/95-BS-II/Rajasthan	04.03.1998
<b>Tata</b>	A P	10-10-2003-BS-II	17-1/95-BS-II/Andra Pradesh	04.11.1997
<b>Tata</b>	TN	10-10-2003-BS-II	18-61/2001-BS-II	31.08.2001
<b>Tata</b>	Karnataka	10-10-2003-BS-II	18-59/2001-BS-II	31.08.2001
<b>Tata</b>	Delhi	10-10-2003-BS-II	18-57/2001-BS-II/Delhi	31.08.2001
<b>Tata</b>	Gujarat	10-10-2003-BS-II	18-58/2001- BS-II	31.08.2001
<b>Reliance</b>	Bihar	10-10-2003-BS-II / Vol-II	18-113/2001-BS-II	20.07.2001
<b>Reliance</b>	Delhi	10-10-2003-BS-II / Vol-II	18-32/2001-BS-II	20.07.2001
<b>Reliance</b>	Gujarat	10-10-2003-BS-II / Vol-II	17-6/95-BS-II	18.03.1997
<b>Reliance</b>	Haryana	10-10-2003-BS-II / Vol-II	18-30/2001-BS-II	20.07.2001
<b>Reliance</b>	HP	10-10-2003-BS-II / Vol-II	18-116/2001-BS-II	20.07.2001
<b>Reliance</b>	Karnataka	10-10-2003-BS-II / Vol-II	18-35/2001-BS-II	20.07.2001
<b>Reliance</b>	Kerala	10-10-2003-BS-II / Vol-II	18-38/2001-BS-II	20.07.2001
<b>Reliance</b>	MP	10-10-2003-BS-II / Vol-II	18-32/2001-BS-II	20.07.2001
<b>Reliance</b>	Maharashtra	10-10-2003-BS-II / Vol-II	18-36/2001-BS-II	20.07.2001
<b>Reliance</b>	Orissa	10-10-2003-BS-II / Vol-II	18-112/2001-BS-II	20.07.2001
<b>Reliance</b>	Punjab	10-10-2003-BS-II / Vol-II	18-31/2001-BS-II	20.07.2001
<b>Reliance</b>	Rajasthan	10-10-2003-BS-II / Vol-II	18-115/2001-BS-II	20.07.2001
<b>Reliance</b>	Tamil Nadu	10-10-2003-BS-II / Vol-II	18-29/2001-BS-II	20.07.2001
<b>Reliance</b>	UP(East)	10-10-2003-BS-II / Vol-II	18-34/2001-BS-II	20.07.2001
<b>Reliance</b>	UP(West)	10-10-2003-BS-II / Vol-II	18-39/2001-BS-II	20.07.2001

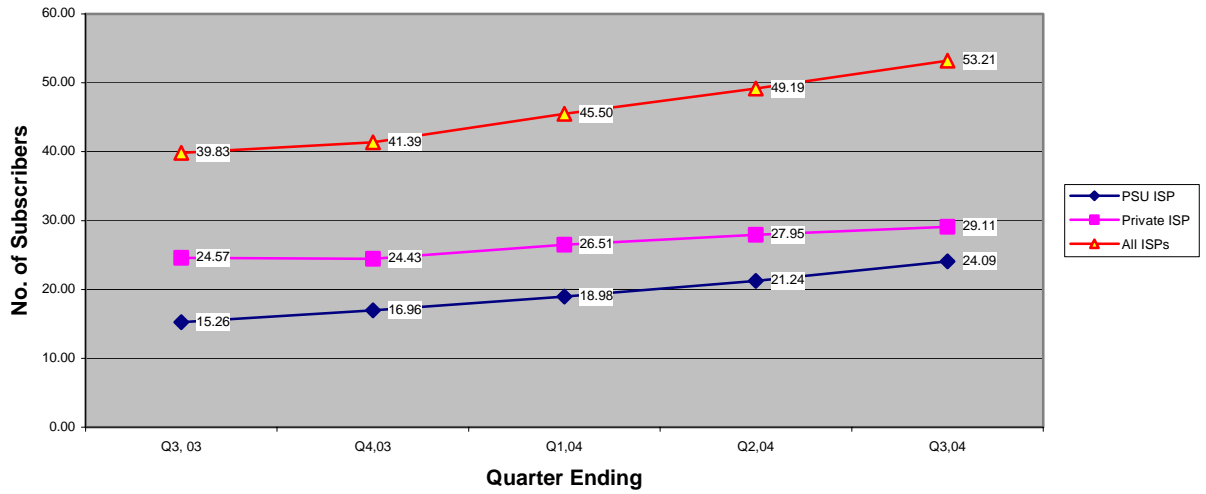
## List of Cellular, Fixed &amp; Unified Access Service Providers

Circle	Operators		
	Mobile		Fixed
	Cellular	Unified	
Delhi	Hutch	Reliance Infocomm	MTNL
	MTNL	Tata Teleservices	Bharti Telenet
	Idea	Bharti Cellular Ltd	
Mumbai	BPL	Reliance Infocomm	MTNL
	Hutch	Tata Teleservices	
	MTNL	Bharti Cellular Ltd	
Chennai	Aircel Cellular	Reliance Infocomm	BSNL
	BSNL	Tata Teleservices	Bharti Telenet
	Hutchison	Bharti Cellular Ltd	
Kolkata	Hutchison East	Reliance Infocomm	BSNL
	BSNL	Tata Teleservices	
		Bharti Cellular Ltd	
Maharashtra	BPL	Reliance Infocomm	BSNL
	Idea	Tata Teleservices	
	BSNL	Bharti Cellular Ltd	
Gujarat	Fascel	Reliance Infocomm	BSNL
	Idea	Tata Teleservices	
	BSNL	Bharti Cellular Ltd	
Andhra Pradesh	Idea	Reliance Infocomm	BSNL
	Hutchison	Tata Teleservices	
	BSNL	Bharti Mobile Ltd.	
Karnataka	Spice	Reliance Infocomm	BSNL
	BSNL	Tata Teleservices	Bharti Telenet
	Hutch	Bharti Mobile Ltd.	
Tamilnadu	BPL	Reliance Infocomm	BSNL
	Aircel	Tata Teleservices	Bharti Telenet
	BSNL	Bharti Cellular Ltd	
Kerala	Escotel	Reliance Infocomm	BSNL
	BPL	Tata Teleservices	
	BSNL	Bharti Cellular Ltd	
Punjab	Spice	Reliance Infocomm	BSNL
	BSNL	HFCL Infocom	
	Hutchinson	Tata Teleservices	
		Bharti Mobile Ltd.	
Haryana		Spice Communications	
	Escotel	Reliance Infocomm	BSNL
	Aircel Diglink	Tata Teleservices	Bharti Telenet

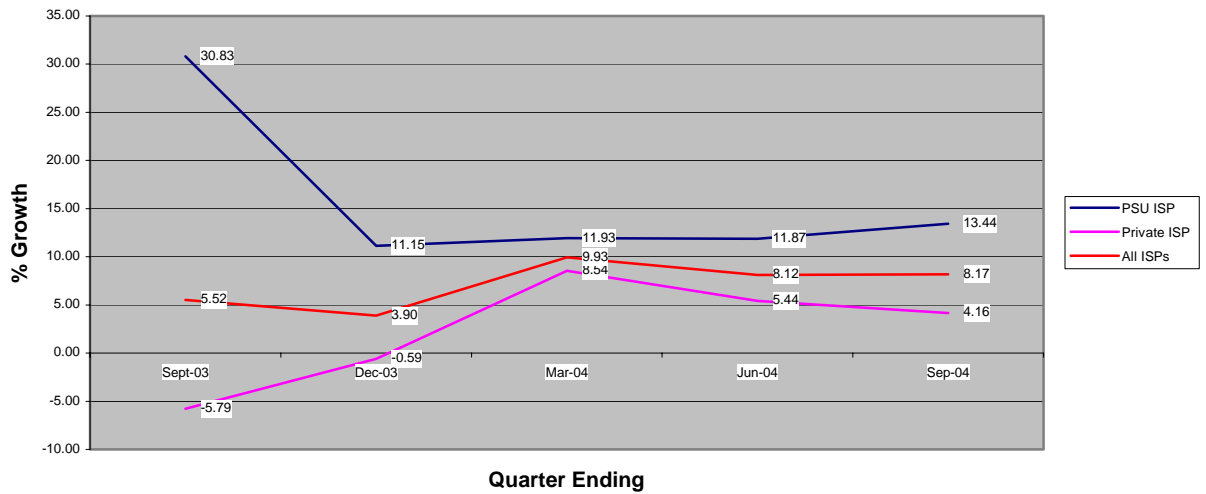
	BSNL	Bharti Cellular Ltd.	
Utter Pradesh(W)	Escotel	Reliance Infocomm	BSNL
	BSNL	Huchinson Essar South Ltd.	
		Tata Teleservices	
Utter Pradesh(E)		Bharti Cellular Ltd.	
	Aircel Diglink	Reliance Infocomm	BSNL
	BSNL	Tata Teleservices	
Rajasthan		Bharti Cellular Ltd.	
	Aircel Diglink	Reliance Infocomm	BSNL
	Hexacom	Tata Teleservices	
Madhya Pradesh	BSNL	Shyam Telelink	
	Idea	Reliance Infocomm	BSNL
	BSNL	Bharti Infotel Ltd.	Bharti Telenet
		Tata Teleservices	
WB&A&N		Bharti Cellular Ltd.	
	BSNL	Reliance Infocomm	BSNL
		Tata Teleservices	
		Bharti Cellular Ltd.	
		Huchinson Essar South Ltd.	
Himachal Pradesh		Dishnet DSL Ltd.	
	BSNL	Reliance Infocomm	BSNL
		Tata Teleservices	
Bihar		Dishnet DSL Ltd.	
	BSNL	Reliance Infocomm	BSNL
		Tata Teleservices	
		Bharti Cellular Ltd.	
Orissa		Dishnet DSL Ltd.	
	BSNL	Reliance Infocomm	BSNL
		Tata Teleservices	
		Bharti Cellular Ltd.	
Assam		Dishnet DSL Ltd.	BSNL
North East	Reliance	Dishnet DSL Ltd.	BSNL
	BSNL		
Jammu & Kashmir	BSNL	Dishnet DSL Ltd.	BSNL
	Bharti		

### Growth Pattern of Internet Subscribers

Growth Trends- Subscriber Base



Growth Rate Trends

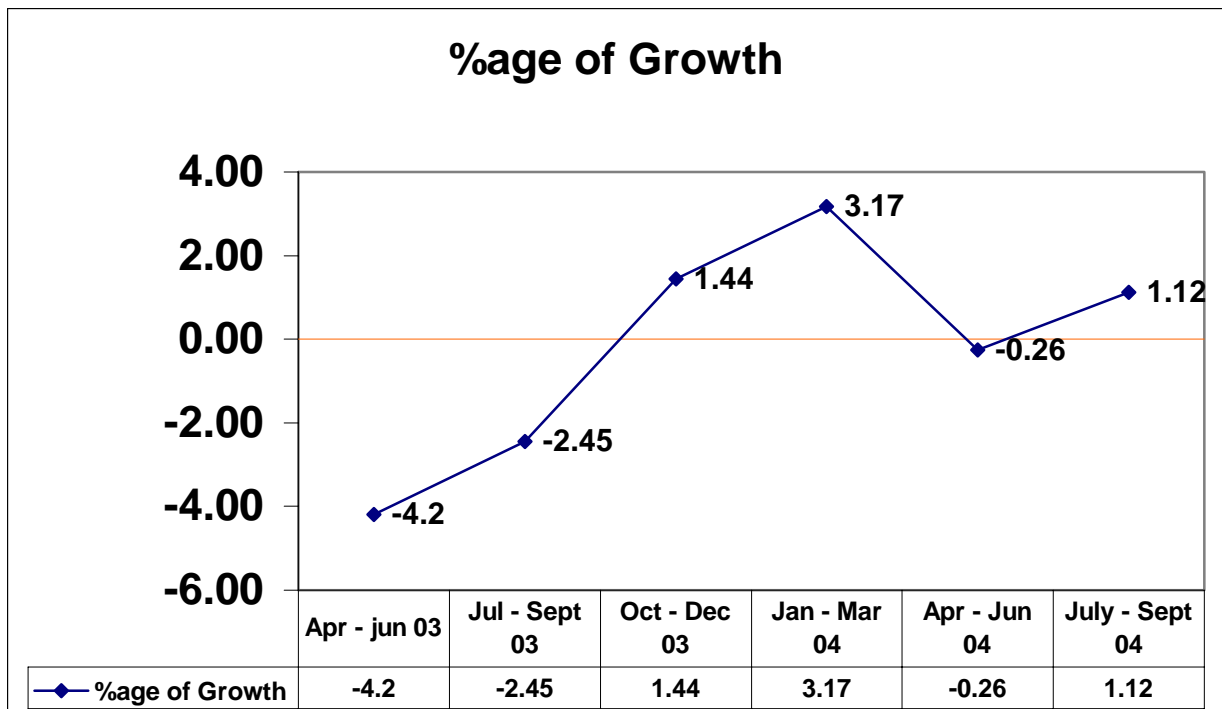




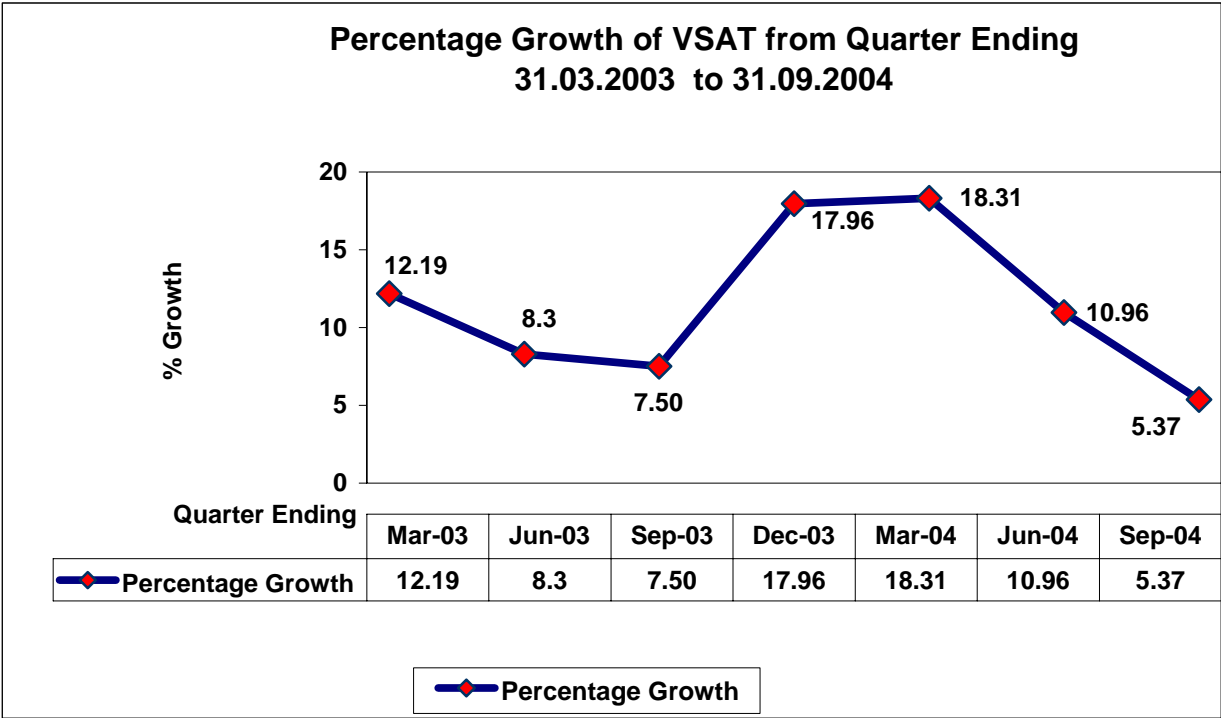
### List of Internet Telephony Service Providers

S. No.	Name of ISPs
1	Apna Telelink Pvt. Ltd.
2	Asianet Satellite Communications Ltd.
3	BG Broadband India Pvt. Ltd.
3	Bharti Broadband Network Ltd.
4	Bharat Sanchar Nigam Limited
5	City Online Services Pvt. Ltd.
6	Data Infosys Ltd.
7	Data Link Impex Pvt. Ltd.
8	Digital2Virtual SP Pvt. Ltd.
9	Estel Communications Pvt. Ltd.
10	Gateway Systems (I) pvt. Ltd.
11	Growth Compusoft Exports Ltd.
12	GTL Limited
13	Hathway Cable & Datacom Pvt. Ltd.
14	HCL Infinet Ltd.
15	Icenet.net Limited
16	In2Cable.Com(India) Ltd
17	iServe India Solutions Pvt. Ltd.
18	Jain Infonet Pvt. Ltd.
19	Karuturi Networks Ltd.
20	Mahanagar Telephone Nigam Limited
21	Narmada Cyberzone Pvt. Ltd.
22	NetMagic Solutions(P) Ltd.
23	Netlinx Ltd.
24	Online Media Solution Ltd.
25	Opto network Pvt. Ltd.
26	Ortel Communications Ltd.
27	PBC Venutres Ltd.
28	Primus Telecommunication India Ltd.
29	Rolta India Limited
30	SAB Infotech Pvt. Ltd.
31	Seven Star Dot Com
32	Sify Ltd.
33	Southern Online Services Ltd.
34	Surana Telecom Ltd.
35	Swiftmail Communications Ltd.
36	Trak Online Net India Pvt.Ltd
37	Trikon electronics Pvt. Ltd.
38	Value Healthcare Ltd.
39	Videsh Sanchar Nigam Limited
40	Wilnet Communications Pvt. Ltd.
41	World Phone Internet Services (P) Ltd.

Growth Rate of PMRTS subscribers



Growth Rate of VSAT Subscribers



## Quality of Service Performance for Fixed Services

(Page 1)

## Performance Monitoring Report of Quality of Service of Fixed Service for the Quarter ending Sept, 2004

QoS Parameters			New connections after registration of demand*	Fault incidences per 100/sub/mth)	Fault repair by next working day			Mean Time to Repair (MTTR)	Grade of service (calls per thousand)	Call completion rate in local network	Metering & billing credibility- % of bills disputed	Operator Assisted Trunk calls (% answered within time norm)	Shifts	Closures	Additional facility	Percentage of repeat faults			
S. No	Service Area	Service Providers			100% in < 7 days	<3	>90% (Month-1)									>90% (Month-2)	>90% (Month-3)	<8 hrs between local exchange (2/1000)	>65%
													< 3 days	< 24 hours	< 24hours				
1	ANDRA PRADESH	BSNL	47.60	7.22	90.83	90.12	9.07	13.30	NA	56.58%	0.05	88.45	81.96	52.12	NA	NA	15.40	16.93	13.18
		RELIANCE	100	0.00	100.00	100.00	100.00	1.70	0.002	71.52%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
		TATA	94.01	1.47	89.01	86.23	84.94	12.50	0.0011	49.85%	0.22	N/App	N/App	80.15	0.00	94.37	5.69	3.60	3.00
2	BIHAR	BSNL	2.07	8.03	83.81	90.58	85.04	12.00	NA	27.03%	0.04	81.70	87.12	30.81	NA	NA	2.21	6.44	3.37
		RELIANCE	100	0.01	100.00	100.00	100.00	2.00	0.002	67.67%	0.08	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
3	DELHI	MTNL	86.58	21.76	81.55	76.79	84.99	12.80	0.0006	45.00%	0.14	82.61	78.65	62.69	100.00	88.35	16.00	17.51	15.62
		RELIANCE	100	0.00	100.00	100.00	100.00	2.70	0.002	69.23%	0.05	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
		BHARTI	86.42	3.54	98.25	97.66	99.19	5.01	0.001	52.60%	0.06	68.59	93.52	13.89	93.83	94.50	8.61	8.09	6.83
		TATA	98.69	0.18	93.57	80.60	86.66	12.10	0.0004	56.00%	0.75	N/App	N/App	41.36	19.82	75.02	0.00	0.00	0.00
4	GUJARAT	BSNL	25.78	7.54	96.58	91.07	95.36	8.00	NA	61.46%	0.09	86.98	84.91	80.17	NA	NA	6.84	8.00	74.17
		RELIANCE	100	0.00	100.00	100.00	100.00	6.00	0.002	74.86%	0.07	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00

		<b>TATA</b>	95.35	0.33	100.00	100.00	100.00	2.70	0.413	50.90%	0.16	N/App	N/App	72.60	100.00	97.82	4.21	5.31	4.35
5	<b>MP &amp; CHATTISGARH</b>	<b>BSNL(MP)</b>	33.65	9.62	90.11	77.89	88.71	11.00	NA	67.00%	0.13	85.30	84.58	77.33	NA	NA	3.16	94.05	2.88
		<b>BSNL(Chattisgarh)</b>	20.93	15.56	73.71	83.05	83.67	19.00	NA	62.21%	0.06	99.47	99.85	66.87	NA	NA	3.12	3.99	3.11
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	2.30	0.002	76.75%	0.09	N/App	N/App	100.00	NA	NA	0.00	0.00	0.00
		<b>BHARTI</b>	98.13	2.86	97.37	90.18	93.19	7.20	0.000	63.60%	0.06	91.37	Nil	54.59	100.00	92.92	3.11	1.55	1.76
6	<b>MAHARASHTRA</b>	<b>BSNL</b>	36.26	9.00	8.86	86.60	91.17	15.00	NA	58.65%	0.05	83.94	87.95	85.50	NA	NA	4.44	3.51	3.49
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	2.30	0.002	71.36%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
		<b>TATA</b>	NA	1.34	99.45	99.31	99.77	3.16	0.002	62.28%	3.18	N/App	N/App	77.25	0.00	61.46	6.73	6.20	6.21
7	<b>PUNJAB</b>	<b>BSNL</b>	70.95	9.33	93.91	89.92	98.20	14.00	NA	64.70%	0.07	88.38	92.69	96.00	NA	NA	1.55	2.62	1.67
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	1.30	0.002	69.79%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
		<b>HFCL</b>	96.25	5.45	91.39	89.49	86.06	4.48	NA	74.37%	0.21	N/App	N/App	57.22	93.76	98.73	7.71	8.04	8.62
8	<b>RAJASTHAN</b>	<b>BSNL</b>	33.41	11.59	87.55	83.07	100.00	11.00	NA	58.31%	0.06	87.68	92.77	40.55	NA	NA	3.12	2.92	2.83
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	3.30	0.002	69.19%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
		<b>SHYAM</b>	85.02	4.06	98.12	95.58	97.60	4.63	0.001	67.00%	0.09	N/App	80.84	95.67	100.00	95.79	0.72	1.52	0.99
9	<b>TAMILNADU</b>	<b>BSNL</b>	48.43	5.45	96.55	96.86	96.79	8.00	NA	70.48%	0.06	98.94	99.19	77.41	NA	NA	0.86	0.93	0.90
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	1.20	0.002	76.84%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
		<b>BHARTI</b>	92.87	1.64	100.00	99.62	99.52	2.12	0.002	66.69%	0.85	100.00	Nil	81.53	66.36	74.63	1.26	1.06	1.32
		<b>TATA</b>	86.05	0.08	83.28	58.67	98.98	15.05	0.0082	48.58%	0.05	N/App	N/App	76.29	93.47	81.42	2.05	2.00	1.02
10	<b>HARYANA</b>	<b>BSNL</b>	40.10	9.41	92.95	88.53	92.62	14.00	NA	67.65%	0.10	60.05	83.27	54.26	NA	NA	3.89	4.45	4.83
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	1.50	0.002	68.46%	0.09	N/AP	N/Ap	100.00	100.00	100.00	0.00	0.00	0.00
		<b>BHARTI</b>	89.42	2.91	99.85	96.50	98.29	7.24	0.001	58.24%	0.08	68.50	92.67	17.11	91.07	94.50	7.63	7.08	4.03
11	<b>KARNATAKA</b>	<b>BSNL</b>	48.27	7.19	95.47	96.10	95.52	3.00	NA	55.06%	0.07	93.87	97.69	69.22	NA	NA	6.59	5.80	6.02
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	1.60	0.002	77.51%	0.08	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
		<b>BHARTI</b>	95.64	0.71	97.36	99.74	99.31	3.40	0.000	60.31%	0.18	Nil	53.96	74.43	96.00	90.73	6.54	5.79	7.31
		<b>TATA</b>	92.56	0.53	90.67	77.58	65.36	9.40	0	53.22%	0.75	N/App	N/App	34.66	5.73	48.38	2.66	3.18	2.58

Operator not meeting prescribed benchmark

NA

Not available

N/App

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Not Applicable

QoS Parameters			New connections after registration of demand*	Fault incidences per 100/sub/mth	Fault repair by next working day			Mean Time to Repair (MTTR)	Grade of service (calls per thousand)	Call completion rate in local network	Metering & billing credibility- % of bills disputed	Operator Assisted Trunk calls (% answered within time norm)	Shifts	Closures	Additional facility	Percentage of repeat faults			
S. No	Service Area	Service Provider			100% in < 7days	<3	>90% (Month-1)									>90% (Month-2)	>90% (Month-3)	<8 hrs	a) Junction between local exchange (2/1000)
12	A&N	BSNL	41.69	15.20	96.82	93.87	94.55	17.00	NA	45.41%	0.20	90.91	74.94	98.62	NA	NA	2.59	9.99	7.70
13	Assam	BSNL	35.17	10.07	96.49	95.56	95.91	24.00	NA	73.36%	0.09	79.81	77.77	30.81	NA	NA	0.46	0.79	0.84
14	Chennai	BSNL	30.99	9.30	94.78	94.48	93.20	16.00	NA	76.45%	0.08	85.01	83.54	58.72	NA	NA	22.49	6.13	6.57
		Reliance	100	0.00	100.00	100.00	100.00	2.90	0.002	76.74%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
		TATA	87.94	0.09	64.20	59.67	99.54	21.14	0.0091	63.24%	0.38	N/App	N/App	64.96	93.39	78.51	2.81	0.71	2.76
15	HP	BSNL	15.62	10.35	96.90	95.11	95.91	6.00	NA	63.07%	0.08	81.80	86.69	57.25	NA	NA	0.58	0.49	0.52
		RELIANCE	100	0.13	100.00	100.00	100.00	0.40		77.51%	0.00	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
16	Jhar khand	BSNL	6.86	9.18	90.80	87.72	90.90	18.00	NA	32.01%	0.18	93.87	97.69	18.19	NA	NA	1.61	1.18	1.27
17	J&K	BSNL	1.29	13.25	88.90	93.72	93.04	11.00	NA	43.00%	0.06	63.75	73.51	35.03	NA	NA	7.33	5.70	6.82
18	Kerala	BSNL	5.51	9.00	88.26	87.35	90.47	18.00	NA	67.21%	0.03	68.38	93.17	63.11	NA	NA	8.83	8.69	8.18
		RELIANCE	100	0.00	100.00	100.00	100.00	2.40	0.002	75.94%	0.08	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
	Kolkata	RELIANCE	100	0.00	100.00	100.00	100.00	1.70	0.002	74.87%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00

19		<b>BSNL</b>	35.01	6.79	92.80	91.48	92.80	13.00	NA	49.59%	0.07	70.11	80.83	47.08	NA	NA	4.89	5.36	4.89
	<b>Mumbai</b>	<b>TATA</b>	NA	0.90	64.20	59.67	99.54	1.69	0.002	63.68%	2.14	N/App	N/App	27.70	0.00	67.98	2.81	0.71	2.76
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	2.90	0.002	75.68%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
20		<b>MTNL</b>	26.95	16.83	81.10	70.72	80.55	34.16	0.0004	51.63%	0.16	77.37	79.31	22.23	67.70	80.69	17.82	18.83	17.18
21	<b>NE-I</b>	<b>BSNL</b>	12.70	6.77	59.19	58.36	58.92	42.00	NA	49.45%	0.10	87.41	84.51	51.65	NA	NA	9.48	4.00	4.72
22	<b>NE-II</b>	<b>BSNL</b>	15.88	7.20	77.83	80.53	77.81	24.33	NA	34.01%	0.08	79.22	67.20	60.98	NA	NA	7.15	7.38	1.54
23	<b>Orissa</b>	<b>BSNL</b>	3.85	7.51	93.19	93.70	92.90	10.00	NA	53.73%	0.14	99.29	95.82	67.03	NA	NA	1.21	1.16	1.19
		<b>RELIANCE</b>	100	0.01	100.00	100.00	100.00	2.50	0.002	68.35%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
24	<b>UP-E</b>	<b>BSNL</b>	2.98	7.74	96.00	96.00	97.20	9.00	NA	63.56%	0.02	79.55	91.03	40.34	NA	NA	1.00	1.10	1.10
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	1.20	0.002	64.24%	0.08	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
25	<b>UP-W</b>	<b>BSNL</b>	22.65	7.65	96.06	98.71	95.49	5.00	NA	68.34%	0.05	87.39	88.42	42.81	NA	NA	1.28	1.98	1.58
		<b>RELIANCE</b>	100	0.00	100.00	100.00	100.00	5.10	0.002	69.22%	0.09	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00
26	<b>Uttaranchal</b>	<b>BSNL</b>	28.14	8.92	93.97	91.87	80.78	6.00	NA	63.56%	0.02	79.55	91.03	40.34	NA	NA	1.01	0.97	0.94
27	<b>West Bengal</b>	<b>BSNL</b>	6.56	7.78	87.75	84.47	82.74	20.67	NA	69.80%	0.05	87.90	90.52	42.97	NA	NA	1.81	1.42	1.89
		<b>RELIANCE</b>	100	0.01	100.00	100.00	100.00	0.80	0.002	68.33%	0.08	N/App	N/App	100.00	100.00	100.00	0.00	0.00	0.00

Operator not meeting the prescribed benchmark

NA Not available

N/App = Not applicable

## Quality of Service Performance for Mobile (GSM) Services

Details QoS Parameters for Mobile (GSM) Services as reported by CMSPs for the quarter ending 30th Sept, 2004											
Sr. No.	Operators with Circles	Fault Incidence & Repair			Network Performance				Billing Complaints		
		(i)	(ii)	(iii)	(i)	(ii)	(iii)	(iv)	(i)	(ii)	(iii)
		No. of faults (per 100 subscribers)	Faults cleared within 24 hrs	Accumulated down time of community isolation	Call Success Rate (within licensees own network)	Service Access Delay	Call Drop Rate	% of connection with good voice quality	Complaints per 100 bills issued	% of complaints resolved within 4 weeks	Period of all refunds/ payment due to customers from the date of resolution of complaints as in (ii) above
		Benchmarks									
		<1%	100%	<24 hrs	>99%	9 to 20 sec	<3%	>95%	<.1%	100%	<4 weeks
<b>(i)</b>	<b>'A' Circle</b>										
1	BPL, MH	1.42%	94.00%	24.16 hrs	99.35%	5.00	1.30%	99.22%	0.100%	100.00%	30 days
2	IDEA Cellular, MH	0.01%	100.00%	183.19 hrs	96.69%	13.47	1.07%	98.39%	0.020%	100.00%	30 days
3	Tata, MH	1.08%	95.00%	2.28 hrs	97.00%	17.00	0.55%	97.55%	1.220%	100.00%	30 days
4	BSNL, MH	1.17%	91.00%	85 hrs	80.05%	2.28	1.10%	92.00%	1.770%	99.00%	30 days
5	Bharti Cellular, MH & Goa	0.39%	100.00%	25.37 hrs	88.96%	9.13	1.32%	93.20%	0.300%	100.00%	30 days
6	Fascel - Hutch GJ	0.05%	100.00%	47.24 hrs	99.99%	9.73	1.18%	98.01%	0.040%	100.00%	30 days
7	Tata, GJ	2.64%	100.00%	4.42 hrs	99.65%	1.12	0.64%	97.62%	0.070%	100.00%	30 days
8	IDEA Cellular, GJ	0.01%	100.00%	1.43 hrs Own n/w 3.25 hrs other n/w	99.10%	14.75	1.22%	98.16%	0.064%	100.00%	30 days



9	BSNL, GJ	1.50%	96.20%	NIL	99.37%	2.14	1.11%	NA	0.150%	100.00%	30 days
10	Bharti Cellular, GJ	0.09%	100.00%	7.82 hrs	99.52%	15.74	1.10%	98.02%	0.050%	100.00%	15 days
11	Tata, AP	1.64%	73.00%	5.81 hrs	98.00%	5.42	0.71%	100.00%	0.170%	92.00%	NA
12	IDEA Cellular, AP	0.10%	100.00%	3.51 hrs due to ICL 19.33 hrs due to L/L	99.97%	9.61	0.55%	98.62%	0.100%	100.00%	2 days
13	Bharti Mobile, AP	0.02%	100.00%	22.58 hrs Own n/w 107.7 hrs L/L	98.02%	15.15	1.30%	99.05%	0.073%	100.00%	30 days
14	BSNL, AP	0.06%	97.33%	0 hrs	98.00%	6.00	1.81%	99.00%	0.020%	97.00%	NA
15	Hutchison Essar, AP	1.00%	98.32%	24 hrs	91.23%	5.00	1.31%	98.00%	1.040%	99.63%	30 days
16	Bharti Mobile, KTK	0.13%	100.00%	3.73 hrs	99.04%	7.00	1.74%	95.59%	0.003%	100.00%	30 days
17	Spice Comm., KTK	0.12%	100.00%	2 hrs	99.78%	9.00	1.38%	99.18%	0.020%	100.00%	1 day
18	BSNL, KTK	0.50%	100.00%	10.77 hrs	88.93%	9.09	1.30%	95.00%	3.950%	100.00%	1 day
19	Hutchison Essar, KTK	0.50%	100.00%	14.55 hrs	99.90%	13.80	1.19%	99.03%	0.037%	100.00%	30 days
20	Tata, KTK	0.10%	95.00%	9.04 hrs	98.00%	15.00	1.35%	96.00%	0.490%	97.00%	30 days
21	Tata, TN	0.03%	96.00%	19.55 hrs	98.52%	1.28	0.93%	93.40%	0.010%	100.00%	30 days
22	BPL Cellular, TN	0.37%	100.00%	118 hrs	99.20%	11.75	1.33%	99.85%	0.400%	100.00%	30 days
23	Aircel, TN	0.00%	100.00%	19.59 hrs	99.03%	11.07	1.71%	95.70%	0.090%	100.00%	25 days
24	BSNL, TN	1.20%	99.07%	NIL	93.03%	9.38	1.09%	96.40%	0.150%	100.00%	15 days
25	Bharti Cellular, TN	0.05%	98.30%	19 hrs	98.09%	11.15	0.98%	98.36%	0.090%	100.00%	30 days
	<b>B' Circle</b>										
26	IDEA-Escotel Mobile, KR	0.27%	100.00%	8.36 hrs	99.84%	13.67	1.97%	94.24%	0.080%	100.00%	30 days
27	BPL Cellular, KR	0.00%	100.00%	10.21 hrs	99.37%	12.79	1.15%	100.00%	0.002%	100.00%	30 days
28	BSNL, KR	1.70%	97.20%	127 hrs	88.50%	15.60	1.80%	88.00%	1.100%	84.00%	30 days
29	Bharti Cellular, KR	0.05%	98.90%	21 hrs	99.05%	21.43	1.67%	98.46%	0.080%	100.00%	30 days
30	Spice Comm., PB	0.35%	100.00%	5.5 hrs	99.05%	6.00	1.23%	99.10%	0.010%	100.00%	30 days

		0.03%		1.67 hrs Other/Media 4.33 hrs Own/Outage	99.50%	11.00		99.80%	0.075%		100.00%	1 days
31	Bharti Mobile, PB		100.00%				1.14%				100.00%	
32	BSNL, PB	0.01%	98.80%	33.5 hrs	98.00%	3.70	0.00%	91.40%	6.300%	100.00%	100.00%	30 days
33	IDEA-Escotel Mobile, HR	0.20%	100.00%	1.20 hrs	99.72%	15.30	0.94%	99.22%	0.080%	100.00%	100.00%	35 days
34	Hutch-Aircel Digilink, HR	1.00%	100.00%	NIL	99.98%	10.00	1.63%	98.84%	0.090%	100.00%	100.00%	3 days
35	BSNL, HR	0.50%	100.00%	20 hrs	92.99%	5.13	3.43%	96.82%	0.100%	100.00%	100.00%	30 days
		0.09%	100.00%	1.08 hrs Other/Media 3.33 hrs Own/Outage	99.60%	12.00	1.30%	99.70%	0.057%	100.00%	100.00%	1 day
36	Bharti Cellular, HR											
37	IDEA-Escotel Mobile, UP(W)	0.07%	100.00%	6.58 hrs	99.57%	11.57	1.33%	95.37%	0.490%	100.00%	100.00%	30 days
38	BSNL,UP(W)	1.00%	85.90%	NA	100.00%	17.10	2.90%	97.30%	0.090%	100.00%	100.00%	NA
39	Bharti Cellular UP (E)	0.18%	100.00%	0 hrs	98.00%	13.00	3.00%	93.00%	0.200%	NA	NA	30 days
40	Bharti Cellular, UP(W)	0.32%	100.00%	10.39 hrs	99.12%	3.80	2.18%	96.37%	0.064%	100.00%	100.00%	30 days
41	Hutch-Aircel Digilink, UP(E)	1.00%	100.00%	NIL	99.70%	10.00	1.70%	96.00%	0.014%	100.00%	100.00%	21 days
42	BSNL, UP(E)	1.10%	99.11%	3 hrs	94.00%	4.00	2.86%	94.00%	0.090%	100.00%	100.00%	NA
43	Hutch-Aircel Digilink, RJ	0.73%	100.00%	NIL	99.98%	10.00	1.21%	95.62%	0.090%	100.00%	100.00%	3 days
44	Bharti - Hexacom, RJ	0.89%	100.00%	19 hrs	100.00%	11.00	1.78%	99.10%	0.990%	100.00%	100.00%	1 day
45	BSNL, RJ	1.37%	83.88%	52.28 hrs	98.80%	5.67	1.62%	92.55%	0.950%	92.23%	92.23%	30 days
46	Hutch - PB	1.00%	100.00%	NIL	99.02%	10.00	1.37%	97.22%	NA	NA	NA	NA
47	IDEA Cellular, MP	0.28%	100.00%	7.3 hrs	99.15%	12.45	0.90%	99.32%	0.320%	100.00%	100.00%	30 weeks
48	Reliance, MP	0.01%	100.00%	27.10 hrs	100.00%	8.65	2.68%	93.38%	0.040%	100.00%	100.00%	1 day
49	BSNL, MP	1.48%	94.15%	NIL	94.35%	2.67	1.37%	99.00%	0.045%	100.00%	100.00%	30 days
50	Bharti Cellular, MP & Chhatt.	0.00%	100.00%	12.65 hrs	99.50%	10.00	0.83%	98.50%	0.090%	100.00%	100.00%	NA
51	Reliance, WB	0.02%	100.00%	14.28 hrs	99.00%	9.32	2.71%	99.23%	NIL	NA	NA	NA
52	BSNL, WB	0.60%	100.00%	NIL	98.50%	5.75	2.88%	98.64%	0.000%	100.00%	100.00%	NIL

	C' Circle											
				1.67 hrs Other/Media 4.16 hrs Own/Outage								
53	Bharti Telenet, HP	0.06%	100.00%		99.14%	13.00	1.21%	99.80%	0.061%	100.00%	1 day	
54	Reliance, HP	0.23%	100.00%	11.33 hrs	100.00%	7.47	1.96%	99.49%	0.000%	100.00%	10 days	
55	BSNL, HP	1.30%	76.68%	20 hrs	80.42%	5.54	3.69%	90.00%	0.120%	100.00%	NIL	
56	Reliance, BR & Jharkhand	0.55%	100.00%	20.04 hrs	99.00%	8.52	2.01%	96.61%	0.000%	100.00%	7 days	
57	BSNL, NE- I & II	1.70%	99.60%	12 hrs	99.30%	15.00	2.50%	96.00%	0.000%	100.00%	21 days	
58	BSNL, BR	0.01%	95.00%	9 hrs	98.10%	7.42	4.40%	90.00%	0.160%	99.84%	18 days	
59	Reliance, ORISA	0.07%	100.00%	13.15 hrs	99.44%	7.92	2.25%	97.89%	0.000%	100.00%	NA	
60	BSNL, OR	0.23%	81.94%	82 hrs	91.96%	7.00	2.60%	93.00%	0.580%	100.00%	NIL	
61	Reliance, AS	0.04%	100.00%	NIL	99.00%	9.84	1.17%	94.92%	0.120%	100.00%	NA	
62	BSNL J&K	1.90%	99.30%	23.4 hrs	99.00%	12.00	2.00%	97.00%	0.100%	100.00%	21 days	
63	Reliance, NE	NIL	NIL	NIL	99.00%	9.70	1.38%	98.71%	0.002%	100.00%	NIL	
64	BSNL, Assam	2.00%	91.00%	NA	96.00%	13.00	3.70%	96.00%	0.200%	100.00%	30 days	
	<b>METRO</b>											
65	Bharti Cellular, Delhi	0.43%	100.00%	NIL	99.34%	16.30	1.91%	96.41%	0.061%	100.00%	30 days	
66	Hutchison Essar, Delhi	1.00%	100.00%	NIL	99.98%	10.00	1.29%	96.40%	0.001%	100.00%	3 days	
67	MTNL, Delhi	0.65%	100.00%	0 hrs	98.45%	13.00	1.55%	95.01%	0.089%	100.00%	30 days	
68	IDEA Cellular, Delhi	0.37%	100.00%	NIL	99.98%	7.00	0.48%	97.13%	0.120%	100.00%	45 days	
69	Tata, Delhi	0.06%	82.00%	2.40 hrs	98.09%	1.10	0.52%	NA	0.630%	99.00%	9 days	
70	BPL Mobile, Mumbai	0.30%	100.00%	6.40 hrs	99.40%	11.04	1.83%	98.76%	0.100%	100.00%	40 days	
71	Hutchison Max, Mumbai	0.43%	100.00%	NIL	99.14%	10.00	1.67%	97.80%	0.008%	100.00%	3 days	
72	MTNL, Mumbai	0.01%	100.00%	0 hrs	99.20%	12.00	2.15%	97.00%	0.080%	100.00%	30 days	
73	Bharti Cellular, Mumbai	0.40%	99.00%	0 hrs	99.00%	9.00	1.48%	97.00%	0.080%	100.00%	7 days	
74	Tata, Mumbai	0.87%	98.13%	1.55 hrs	98.13%	28.30	0.46%	96.74%	2.450%	92.00%	30 days	
75	Aircel Cellular Ltd, Chennai	0.25%	100.00%	21 hrs	100.00%	15.50	1.04%	95.20%	0.25%	100.00%	30 days	

76	Bharti Mbinet, Chennai	0.09%	98.70%	0 hrs	99.53%	12.60	0.89%	96.35%	0.090%	100.00%	30 days
77	Hutchison Essar, Chennai	0.09%	100.00%	NIL	99.50%	13.02	0.75%	98.50%	0.370%	100.00%	30 days
78	Tata, Chennai	0.07%	70.00%	2.38 hrs	98.14%	1.32	1.04%	98.21%	0.250%	100.00%	30 days
79	Bharti Mobinet, Kolkata	0.01%	100.00%	0 hrs	99.05%	15.80	1.41%	97.77%	0.530%	100.00%	NA
80	Hutchison, Kolkata	0.06%	100.00%	NIL	99.67%	17.00	1.09%	95.80%	0.110%	100.00%	35 days
81	BSNL, Kolkata	2.60%	77.79%	NA	96.73%	7.00	2.10%	96.43%	2.400%	100.00%	30 days
82	BSNL, Chennai	0.76%	100.00%	Nil	98.44%	12.21	1.60%	100.00%	0.110%	100.00%	Immediate

NA = Not Available,

Operator not meeting the benchmark

## Annex 5.3

### Quality of Service Performance for ISPs

S. No.	Name of the Service Provider	Service Activation time	Time to Access	Access Portability in 1 <sup>st</sup> attempt (in %)	Access Portability in 2 <sup>nd</sup> attempt (in %)	Access Portability in 3 <sup>rd</sup> attempt (in %)	ISP Node unavailability	Grade of Service (QoS)	Mean time to Restore of faults resulting as per subscriber complaints	
	<b>TRAI Benchmarks</b>	<b>6 hrs</b>	<b>30 sec</b>	<b>80</b>	<b>90</b>	<b>99</b>	<b>30 min</b>	<b>1 : 100</b>	<b>3 days</b>	
1	Bharat Sanchar Nigam Ltd.	0-2 hrs	15-30 sec	92	98	100	Nil	1:100	0-4 hrs	
2	VSNL	2-4 hrs	30 sec	80	90	99	Nil	Not provided by BSO	10-15 min	
3	MTNL	Delhi	Instant Online	30 sec	99.67	99.99	Nil	-	0.01	5 min
		Mumbai	Immediate	26 sec	100	-	-	-	1 in 200	15 min
4	Sify Ltd.	3 min	30 sec	90	95	99	20 min	0.005	4 hrs	
5	Data Infosys	3-5 min	25-30 sec	90	95	99	30 min	1:100	15 min	
6	Tata Internet Services Ltd.	<5 min	30 sec	90	95	99	0.01%	100 users for 1 PSTN port	40 min	
7	Bharti Infotel Ltd. (Bharti Broadband Network Ltd.(Bharti BT))	5 min	30-35 sec	98.3	99	100	15 min	1:100	2 hrs	
8	HCL Infinet Ltd.	3 min	30 sec	99	99.2	99.5	18 min	1:200	16-18 hrs	
9	Shyam Internet Services Pvt. Ltd.	30 min	30 sec	98	99	100	30 min	1%	2 hrs	
10	BG Broadband India Pvt. Ltd.	2 min	20 sec	95	97	99	Nil	Not provided by BSO	24-48 hrs	
11	Icenet.net Limited	2 hrs	20 sec	85	95	100	Never	1:100	-	
12	Sab Infotech	<6 hrs	<30 sec	90	95	100	<30 min	0 in 100	>1 hr	
13	Hathway Cable & Datacom Pvt. Ltd.*	-	-	-	-	-	-	-	-	
14	Tata Teleservices (Maharashtra) Ltd. (Hughes Telecom)	0 sec	25 sec	98.1	100	N.A.	Nil	1:1000	1 hr	
15	Data Access Pvt. Ltd.	Immediate (Online)	30 sec	98	99	99.5	Nil	No blocked calls	2-3 hrs	
16	Trak Online Net India Pvt. Ltd.	5 ½ hrs	<b>31 sec</b>	83	97	100	Nil	<b>0.03</b>	1-2 hr	
17	WWW Communications Ltd.	4-5 min	20-35 sec	85	96	99	55 min	Not provided as per the format	10-15 min	
18	Asianet Satellite Communications Ltd.	Immediate	10 sec	98	99	100	<1 Hour	1/500	3.18 hrs	
19	Broadband Pacenet (I) Pvt. Ltd.	-	-	-	-	-	-	-	3 hrs	
20	HFCL Infotel Ltd.	1.5 min	30 sec	98.20	99.20	100	Nil	0.85 in 100	8.80 min	

\* are not providing Internet Access on Dial Up. Internet Access on Mobile is provided via WAP Setup but they have been included in Top 20 on the basis of Total Number of Subscribers.

Note: The parameters, which are below the benchmarks, are indicated in the bold. Information regarding QoS of ISP has been received from all top 20 ISPs. It is observed that most of the ISPs are able to meet the benchmarks, barring one or two cases.