

**Information note to the Press**  
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**Telecom Regulatory Authority of India**

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**TRAI Releases Report of the independent agencies engaged for the Objective Assessment of Quality of Service and Customer Satisfaction Survey of Telecom Services in Chennai service area**

New Delhi, 16<sup>th</sup> December, 2008 - TRAI engaged [M/s. IMRB International](#) as independent agency for (1) conducting an objective assessment of the Quality of Service provided by basic and cellular mobile telephone service providers and broadband service providers and (2) subjective customer satisfaction surveys for assessing the customers' perception of the service and to assess the implementation and effectiveness of Telecom Consumers Protection and Redressal of Grievances Regulations, 2007.

**2. Methodology**

2.1 The audit and objective assessment of QoS has been done with the following aspects in view: –

- The scope of the audit and assessment work included a three stage verification process. The first stage consisted of auditing the records of the service providers and verifying the Performance Monitoring Report (PMR) data submitted to TRAI. The second stage involved three days live measurement of all the network parameters and determination of Busy hour. The third stage consisted of collection and verification of one month Quality of Service performance data.
- audit of telephone exchanges for basic service, Mobile Switching Centers (MSCs), network operating centre/point of presence for broadband service spread in the service area on sample basis;
- assessing the network conditions of each cellular mobile service provider through drive tests;
- inter-operator call assessment of cellular mobile operator through inter-network test calls;
- assessing the effectiveness of the customer care help lines of each operator through test calls;

2.2 The subjective assessment of customer perception of service and assessment of implementation and effectiveness of Telecom Consumers Protection and Redressal of Grievances Regulations, 2007 was made through a survey using questionnaire approved by the Authority. The sample size of customers for survey was determined for confidence level of 95% and with a confidence interval of 3% for metro for each of the service provider. All the

subscribers in the sample selected in the rural areas were interviewed personally and in the urban areas 75 % were interviewed personally and 25 % interviewed telephonically.

### **Findings of the independent agency on Quality of Service**

#### **3 Cellular Mobile Telephone Service:**

3.1 In Chennai service area the audit of quality of service data of service providers, namely, Bharti Airtel, BSNL, Vodafone, Tata Teleservices, Aircel, and Reliance Communications was conducted.

3.2 Objective Assessment/Audit of Quality of Service performance: For almost all network parameters, all the service providers meet the TRAI specified benchmark. The Time Consistent Busy Hour (TCBH) reported by all the service providers matched the network busy hour calculated by IMRB auditors. Service Provider's performance in respect of cellular mobile telephone service based on one month data is given in Annex-`1A'. The areas of concern i.e. parameters, for which benchmark is not met by the service providers, are identified based on analysis of one month QoS performance data and live measurement.

3.3 **Drive Test:** The drive tests were conducted to verify parameters like Call Drop Rate, Call Set-up Success Rate, Blocked Call Rate and Percentage of Connections with Good Voice Quality. The areas of concern (i.e. parameters) are identified as below:

- Blocked Call Rate
- Call Set-up Success Rate
- Call Drop Rate
- Connections with good voice quality

3.4 **Customer perception of service:** Service Providers' performance in respect to the level of customer perception of service against the specified benchmark is given in Annex-`1B'.

3.5 **Percentage of Customer Satisfied:** The gradation on "Satisfaction" score scale i.e. scores of "Very Satisfied" to "Satisfied" is given in Table-1 below. The survey results reveal that there is a need to improve the satisfaction level of subscribers with respect to the Help services, billing performance and supplementary services across the service providers.

**Table-1 (Cellular Mobile Telephone Service – Chennai Service Area)**

S. No.	%Customer Satisfied	Bharti Airtel	Vodafone	BSNL	RCOM	AIRCEL	TATA
1	% satisfied with the provision of service	99%	94%	96%	96%	97%	97%
2 a	% satisfied with the billing performance (Postpaid customers)	97%	86%	90%	86%	97%	91%
2 b	% satisfied with the billing performance (Prepaid customers)	99%	97%	95%	97%	98%	99%
3	% satisfied with help services	93%	76%	72%	85%	91%	75%
4	% satisfied with network performance, reliability and availability	98%	92%	82%	96%	95%	91%
5	% satisfied with maintainability	97%	91%	82%	95%	92%	90%
6	Overall customer satisfaction	99%	93%	88%	96%	97%	91%
7	Customer satisfaction with offered supplementary services % satisfied	93%	84%	85%	78%	95%	88%

#### 4. Basic Service (wire line)

**4.1 Objective Assessment / Audit of QoS performance:** Basic (Wire line) services audit for Chennai circle broadly indicates that most of the service providers are not meeting the benchmarks for some of the Parameters. Service Provider's performance in respect of basic service (wire line) based on one month data is given in Annex-`2A'. The areas of concern i.e. parameters, for which benchmarks is not met by the service providers, are identified based on analysis of one month QoS performance data and live measurement as below:

- Fault repaired by next working day,
- Mean time to repair (MTTR)
- Billing complaints per 100 bills issued

**4.2 Customer perception of service:** Service Providers' performance in respect to the level of customer perception of service against the specified benchmark is given in Annex-`2B'.

**4.3 Percentage of Customer Satisfied:** The gradation on "Satisfaction" score scale i.e. scores of "Very Satisfied" to "Satisfied" is given in Table-2 below. The survey results reveal that there is a need to improve the satisfaction level of subscribers with respect to the maintainability, help services and billing performance (Pre-Paid).

**Table-2 {Basic Service (Wireline) – Chennai Service Area}**

S. N.	Customer Perception of Services	Bharti	BSNL	R.Com	TATA
1	%age subscribers satisfied with the provision of service	97%	99%	96%	98%
2	%age subscribers satisfied with the billing performance (Post paid customers)	98%	98%	95%	99%
	%age subscribers satisfied with the billing performance (Pre paid customers)	88%	51%	90%	81%

3	%age subscribers satisfied with help services	95%	92%	84%	91%
4	%age subscribers satisfied with network performance, reliability and availability	98%	97%	93%	96%
5	%age subscribers satisfied with maintainability	94%	86%	81%	82%
6	Overall customer satisfaction	96%	95%	93%	98%
7	%age subscribers satisfied with offered supplementary services	92%	98%	73%	90%

## 5. Broadband Service

**5.1 Objective Assessment/Audit of QOS performance:** The audit for Broadband Service Providers was conducted at their respective network operating centre/point of presence (POPs) in the Chennai circle. Service Provider's performance based on one month data is given in Annex -`3A'. The area of concern (i.e. parameters), for which benchmark is not met by the service providers are identified based on analysis of one month QoS performance data and live measurements as below:

- Fault repaired by next working day.
- Billing complaints per 100 bills issued and time taken for refund of deposits.
- Bandwidth utilized on upstream links.
- Data download speed of >80%.

**5.2 Customer perception of service::** Service Providers' performance in respect to the level of customer perception of service against the specified benchmark is given in Annex-`3B'.

**5.3 Percentage of Customer Satisfied:** The gradation on "Satisfaction" score scale i.e. scores of "Very Satisfied" to "Satisfied" is given in Table-3 below The survey results reveal that Help Services, Maintainability, Network performance are areas where all service providers have scored relatively lower score as compared to other parameters.

**Table-3 (Broadband Service– Chennai Service Area)**

S. N.	Customer Perception of Services	Airtel	BSNL	Rel Com	VSNL	Sify	Hathway
1	% satisfied with the provision of service	87%	84%	87%	94%	87%	92%
2a	% satisfied with the billing performance (Prepaid customers)	96%	96%	93%	96%	92%	95%
2b	% satisfied with the billing performance (Postpaid customers)	96%	96%	99%	96%	92%	98%
3	% satisfied with help services	83%	77%	79%	74%	69%	68%
4	% satisfied with network performance, reliability and availability	87%	87%	89%	84%	78%	79%
5	% satisfied with maintainability	68%	76%	80%	73%	56%	71%
6	% satisfied Overall customer satisfaction	92%	90%	91%	86%	76%	86%
7	% satisfied with customer satisfaction with offered supplementary services such as allocation of static / fixed IP addresses, email ids etc.	79%	95%	78%	100%	75%	88%

**6. Telecom Consumers Protection and Redressal of Grievances score:**

The Authority noted with concern that the awareness of subscribers of all the service providers regarding the three stage grievance redressal mechanism is still very low. The summary of survey results for assessment of implementation and effectiveness of Telecom Consumer Protection and Redressal of Grievances Regulations in respect of Cellular Mobile Service, Basic (Wire line) Service and Broadband Service is given in Annex-'1C', Annex '2C' and Annex "3C' respectively.

***7. The detailed Report on Quality of Service – Audit/Objective Assessment and Customer Satisfaction Survey, including grievance redressal mechanism, conducted during the period February, 2008 to May, 2008 is placed at TRAI Website ([www.trai.gov.in](http://www.trai.gov.in)).***

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**Authorized to issue: Advisor (QOS)**

## Annex-`1A'

### Objective Assessment of Quality of Service - Service Provider's Performance in respect of Cellular Mobile Telephone Service– Chennai Service Area

S.N	QOS Parameter	Bench mark	Bharti	BSNL	Vodafone	Tata Teleservice	Aircel	R.Com
1	Accumulated down time of community isolation	<24 Hrs	0.00	0.00	0.00	0.98	0.00	0.00
2	Call Setup Success Rate	>95%	98.44%	98.12%	98.43%	99.92%	95.25%	99.15%
3	Service Access Delay	<20 Sec	12.13	7.64	8.68	12.84	10.85	1.37
4	SDCCH / Paging Channel congestion	<1%	0.24%	0.21%	0.22%	0.00%	0.09%	1.63%
5	TCH Congestion	<2%	0.17%	1.54%	0.47%	0.01%	1.48%	0.43%
6	Call Drop Rate	<3%	0.13%	0.94%	0.82%	0.35%	0.50%	0.53%
7	% of connections with good voice quality	> 95%	84%	95%	97%	99%	90%	99%
8	POI Congestion	>0.5%	0%	0%	0%	0%	0%	0%
9(a)	% Call answered electronically within 20 seconds within 40 seconds	80% 95%	99% 99%	99% 100%	100% 100%	100% 100%	100% 100%	90% 99%
9(b)	% Call answered by the operator within 60 seconds within 90 seconds	80% 95%	98% 98%	91% 99%	93% 95%	77% 81%	100% 100%	71% 77%
10	Complaints per 100 bills issued	<0.1%	0.00%	0.22%	0.11%	0.04%	0.09%	0.09%
11	% of Billing complaints resolved within 4 weeks	100%	100%	100%	100%	100%	100%	100%
12	Period of refunds from the date of resolution of complaints	<4 weeks	100%	100%	100%	100%	100%	100%

**Annex-`1B`**  
**Customers Perception of Service for Cellular Mobile Telephone Service through Survey– Chennai Service Area**

S. No.	Customer Perception of Services	Bench mark	Bharti	Vodafone	BSNL	RCOM	AIRCEL	TATA
1	% satisfied with the provision of service	>95%	81%	80%	78%	77%	81%	76%
2 a	% satisfied with the billing performance (Postpaid customers)	>90%	81%	70%	72%	65%	84%	71%
2 b	% satisfied with the billing performance (Prepaid customers)	>90%	80%	81%	78%	82%	81%	82%
3	% satisfied with help services	>90%	80%	67%	62%	66%	79%	63%
4	% satisfied with network performance, reliability and availability	>95%	80%	77%	70%	77%	80%	72%
5	% satisfied with maintainability	>95%	81%	77%	69%	77%	81%	73%
6	Overall customer satisfaction	>95%	81%	79%	73%	78%	81%	70%
7	Customer satisfaction with offered supplementary services % satisfied	>95%	74%	68%	66%	62%	76%	65%

**Annex-`1C`**  
**Assessment of implementation and effectiveness of Telecom Consumer Protection and Redressal of Grievances Regulations in respect of Cellular Mobile Telephone Service through Survey– Chennai Service Area**

S.N.	Sub Parameter	Bharti	Vodafone	BSNL	R Com	Aircel	TATA
1	Awareness of three stage grievance redressal mechanism	37%	33%	20%	31%	36%	44%
2	For pre-paid customers, awareness about item-wise call charge details on request	56%	52%	50%	69%	57%	54%
3	If aware (for pre-paid customers), ever denied of item wise usage charge details for pre-paid connection	1%	2%	6%	1%	3%	1%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	69%	72%	58%	58%	73%	68%
5	Awareness of Call center for redressing grievances	58%	49%	49%	51%	54%	57%
6	Percentage of consumers made any complaints to the toll free number within last 6 months	8%	8%	7%	5%	8%	12%
7	Call center informing about the action taken on complaints	40%	33%	40%	45%	35%	66%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	55%	34%	29%	34%	51%	16%
9	percentage satisfied with complaint resolution by call centre	75%	58%	52%	57%	77%	57%
10	Awareness of Nodal officer for redressing grievances	6%	7%	10%	24%	7%	7%
11	Awareness of contact details of Nodal officer	11%	9%	5%	9%	11%	4%

## Annex-`2A'

### Objective Assessment of Quality of Service - Service Provider's Performance in respect of Basic Service (Wire line) – Chennai Service Area

S.no	Parameters	B'mark	Bharti	BSNL*	RCOM	TATA teleservices*
1	Provision of telephone after registration of demand					
1.1	Connections provided within 7 days	100%	99%	77%	100%	100%
2	Fault incidence (Number of faults/100 subscribers/month)	<3	2	4.14	<3	<3
3	Fault repair					
3.1	Faults repaired within 24 hours	>90%	94%	77%	92%	100%
3.2	Fault repaired in three working days	100%	100%	95%	100%	100%
4	Mean time to repair faults (MTTR) In hours	< 8 hrs	11	18	4.19	4.9
5	Call Completion Rate (CCR)	>55%	67%	84%	DNA	88%
6	Metering and billing credibility					
6.1	Billing complaints per 100 bills issued	<0.1%	0.25%	0.16%	0.02%	0.00%
6.2	%age of billing complaints resolved within 4 weeks	100%	100%	99%	100%	NA
7	Customer care/helpline promptness					
7.1	<u>Shift requests attended</u>					
	Shift requests attended within 3 days	95%	73%	42%	96%	100%
7.2	<u>Closure request attended</u>					
	Closure within 24 hours	95%	55%	76%	100%	100%
7.3	<u>Supplementary (additional) service requests attended</u>					
	Additional facility provided within 24 hours	95%	99%	82%	100%	100%
8	Response time to customer					
8.1	% age call answered through IVR in 20 seconds	80%		DNA	100%	100%
	% age call answered through IVR in 40 seconds	95%		DNA	100%	100%
8.2	% age calls answered by operator in 60 seconds	80%	94%	DNA	95%	77%
	% age calls answered by operator in 90 seconds	95%	97%	DNA	98%	81%
9	Time taken for refund of deposits after closure					
9.1	%age cases where refund received within 60 days	100%	91%	11%	NA	NA

{\*Note: For BSNL data pertains to the sample 5% of exchanges audited during the period of February to May 2008, whereas for rest of the operators figures pertain to all the exchanges present in the circle, TATA teleservices has limited presence and offers Basic (Wire line) services primarily to corporate clients in Chennai circle}

\*\* Methodology not in line with QoS ◆ Figure provided on all India basis ◆ not meeting the Benchmark DNA:- Detail not available NA:- Not applicable

**Annex-`2B`  
Customers Perception of Service for Basic Service (Wire line)  
through Survey– Chennai Service Area**

S. N.	Customer Perception of Services	Benchmark	Bharti	BSNL	R.Com	TATA
1	%age subscribers satisfied with the provision of service	>95%	79%	84%	73%	83%
2	%age subscribers satisfied with the billing performance (Post paid customers)	>90%	79%	83%	73%	76%
	%age subscribers satisfied with the billing performance (Pre paid customers)		70%	45%	72%	67%
3	%age subscribers satisfied with help services	>90%	70%	78%	64%	72%
4	%age subscribers satisfied with network performance, reliability and availability	>95%	79%	84%	74%	77%
5	%age subscribers satisfied with maintainability	>95%	73%	73%	64%	70%
6	Overall customer satisfaction	>95%	78%	79%	73%	78%
7	%age subscribers satisfied with offered supplementary services	>95%	79%	88%	59%	79%

**Annex-`2C`  
Assessment of implementation and effectiveness of Telecom Consumer  
Protection and Redressal of Grievances Regulations in respect Basic  
Service (Wire line) through Survey– Chennai Service Area**

S.N.	Sub Parameter	Bharti	BSNL	R Com	TATA
1	Awareness of three stage grievance redressal mechanism	33%	30%	35%	34%
2	For pre-paid customers, awareness about item-wise call charge details on request	33%	24%	53%	43%
3	If aware (for pre-paid customers), ever denied of item-wise usage charge details for pre-paid connection	15%	0%	5%	5%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	83%	86%	82%	89%
5	Awareness of Call center for redressing grievances	38%	38%	38%	43%
6	Percentage of consumers making any complaints to the toll free number within last 6 months	12%	5%	18%	4%
7	Call center informing about the action taken on complaints	92%	46%	82%	73%
8	Resolution of billing complaint by customer care within 4 weeks of lodging complaint	7%	11%	7%	5%
9	Level of satisfaction with the complain resolution by call center	52%	57%	47%	48%
10	Awareness of Nodal officer for redressing grievances	4%	5%	5%	3%
11	Awareness of contact details of Nodal officer	5%	9%	7%	5%

## Annex-`3A`

### Objective Assessment of Quality of Service - Service Provider's Performance in respect of Broadband Service– Chennai Service Area

S.no	Parameters	B'mark	Bharti	BSNL	Sify	Hathaway	VSNL	RCOM
1	<b>Service provisioning</b>							
1.1	Total connections registered during the period		7525	14282	272	1485	1861	413
1.2	Percentage connections provided within 15 days	100%	99%	100%	100%	93%	100%**	85%**
2	<b>Fault repair / Restoration time</b>							
2.1	Total number of faults registered		8080	15506	685	6449	19942	1188
2.2	Percentage faults repaired by next working days	> 90%	93%	91%	81%	83%	76%**	94%
2.3	Percentage faults repaired within three working days	99%	96%	100%	100%	95%	92%**	99%
3	<b>Billing performance</b>							
3.1	Total number of bills generated		584541	151426	Prepaid*	2069	21201	2019
3.2	Billing complaints per 100 bills issued	<2%	0.25%	0.02%	Prepaid*	3.43%	0.55%	0.10%
3.3	%age of billing complaints resolved within 4 weeks	100%	100%	100%	Prepaid*	100%	100%	100%
3.4	Time taken for refund of deposits after closure	100%	100%	100%	100%	82%	100%	100%
4	<b>Customer care/helpline assessment</b>							
4.2	Percentage calls answered within 60 seconds by the operator	> 60%	45%	98%	100%	80 - 90%	93%	94%
4.3	Percentage calls answered within 90 seconds by the operator	>80%	56.4%	100%	100%	100%	98%	96%
5	<b>Bandwidth utilization/Throughput time</b>							
5.1	Total number of intra network links/links tested (From POP to ISP Node)	<80% on every link	406	21	400	3	4	4
5.2	Total number if intra network links crossing 90%		0	0	5	3	0	0
	<b>Upstream Bandwidth</b>							
5.3	Total number of upstream links (From ISP Gateway Node to IGSP/NIXI Node for international connectivity)		1	36 + 1 (NIXI)	28	6	35	7
5.4	Total number of upstream links > 90%		0	1	0	1	0	0
5.5	Percentage bandwidth utilised on upstream links	<80%	81%	59%	64%	92%	74%	40%
6	Broadband download speed	>80%	Complied	Complied	Complied	Complied	Complied	Complied
7	<b>Service availability/uptime</b>	>98%	100.00%	100.00%	100.00%	98.92%	98.48%	99.24%**
8	<b>Packet loss</b>	<1%	0%	0%	0%	0%	0%	< 1%**
9	<b>Network Latency</b>							
9.1	POP/ISP Node to NIXI (In msec)	<120	<50	<120	<45	<120	<90	<30
9.2	ISP node to NAP port (In msec)	<350	<230	<350	<300	<350	<200	<290

DNA:- Detail not available NA:- Not applicable

**Annex-`3B`**  
**Customers Perception of Service for Broadband Service through Survey–**  
**Chennai Service Area**

S. N.	Customer Perception of Services	Benchmark	Airtel	BSNL	Rel Com	VSNL	Sify	Hathway
1	% satisfied with the provision of service	>90%	63%	62%	62%	65%	62%	66%
2a	% satisfied with the billing performance (Prepaid customers)	>90%	68%	68%	66%	65%	64%	66%
2b	% satisfied with the billing performance (Postpaid customers)	>90%	66%	66%	65%	66%	64%	65%
3	% satisfied with help services	>90%	61%	58%	60%	57%	58%	54%
4	% satisfied with network performance, reliability and availability	>85%	63%	63%	63%	61%	59%	59%
5	% satisfied with maintainability	>85%	56%	60%	61%	59%	52%	58%
6	% satisfied Overall customer satisfaction	>85%	66%	65%	63%	62%	59%	62%
7	% satisfied with customer satisfaction with offered supplementary services such as allocation of static / fixed IP addresses, email ids etc.	>85%	59%	65%	60%	70%	58%	64%

**Annex-`3C`**

**Assessment of implementation and effectiveness of Telecom Consumer Protection and Redressal of Grievances Regulations in respect Broadband Service through Survey– Chennai Service Area**

S.N.	Sub Parameter	Bharti	BSNL	RCOM	VSNL	Sify	Hathway
1	Awareness of three stage grievance redressal mechanism	16%	20%	25%	28%	30%	24%
2	Provision of Manual of Practice containing terms and conditions of service, grievance redressal mechanism etc	52%	33%	29%	57%	11%	31%
3	For pre-paid customers, awareness about item-wise call charge details on request	38%	38%	19%	26%	46%	18%
4	If aware (for pre-paid customers), ever denied of item-wise usage charge details for pre-paid connection	2%	1%	1%	0%	3%	0%
5	Awareness of Call center for redressing grievances	67%	58%	53%	83%	99%	65%
6	Percentage of consumers made any complaints to the toll free number within last 6 months	21%	25%	30%	46%	49%	36%
7	Call center informing about the action taken on complaints	91%	88%	91%	87%	85%	75%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	8%	12%	14%	10%	2%	17%
9	Percentage satisfied with the complaint resolution by call center	61%	56%	61%	53%	52%	57%
10	Awareness of Nodal officer for redressing grievances	2%	3%	1%	4%	1%	2%
11	Awareness of appellate Authority for redressing grievances	3%	3%	2%	3%	1%	0%