

Information note to the Press
(Press Release No. 101/2008/QoS)
Telecom Regulatory Authority of India

For Immediate release

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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 Mumbai service area

New Delhi, 18th December, 2008 - TRAI engaged M/s. TCIL as independent agency for conducting an objective assessment of the Quality of Service provided by basic and cellular mobile telephone service providers and broadband service providers and M/s Market Pulse for conducting 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 by M/s TCIL 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 Service Area 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 Mumbai service area the audit of quality of service data of service providers, namely, Bharti-Airtel, BPL, MTNL, Vodafone, Reliance Communications and TTML was conducted.

3.2 Objective Assessment/Audit of Quality of Service performance: For most of the network parameters, all the service providers meet the TRAI specified benchmark. The Time Consistent Busy Hour (TCBH) reported by all the service providers except RCOM, matched the network busy hour calculated by M/s TCIL 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 customers 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 (Post-paid), Network Performance, Reliability and Availability and Maintainability across the service providers.

Table-1 (Cellular Mobile Telephone Service – Mumbai Service Area)

Service Providers	% Satisfied with Provision of Service	% Satisfied with Billing Performance		% Satisfied with Help Services	% Satisfied with Network Performance, Reliability and Availability	% Satisfied with Maintainability	% Supplementary Services	% Satisfied with Overall Satisfaction
		Postpaid	Prepaid					
Airtel	90%	86%	94%	77%	86%	85%	96%	87%
MTNL	89%	92%	97%	70%	83%	84%	98%	80%
Reliance	95%	79%	93%	75%	92%	93%	98%	89%
TTML	96%	93%	96%	83%	93%	93%	96%	92%
Vodafone	97%	91%	95%	82%	88%	88%	95%	87%
BPL	97%	93%	96%	83%	87%	86%	94%	88%

4. Basic Service (wire line)

4.1 **Objective Assessment / Audit of QoS performance:** Basic (Wire line) services audit for Mumbai circle broadly indicates that Tata Teleservices meets all the benchmarks and other 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 benchmark is not met by the service providers, are identified based on analysis of one month QoS performance data and live measurement as below:

- Billing complaints per 100 bills issued,
- Response time to customers for assistance by Operator,

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 customers 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 and Help Services.

Table-2 {Basic Service (Wire line) – Mumbai Service Area}

Service Providers	% Satisfied with Provision of Service	% Satisfied with Billing Performance		% Satisfied with Help Services	% Satisfied with Network Performance, Reliability and Availability	% Satisfied with Maintainability	% satisfied Supplementary Services	% Satisfied with Overall Satisfaction
		Postpaid	Prepaid					
Airtel	91%	92%	100%	88%	95%	89%	98%	95%
MTNL	96%	94%	98%	77%	93%	79%	93%	91%
Reliance	95%	88%	95%	72%	93%	80%	96%	90%
TTML	94%	94%	97%	84%	94%	78%	99%	91%

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 Mumbai circle. Service Provider's performance based on one month data is given in Annex -'3A'. 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 measurements as below:

- Service Provisioning/Activation Time
- Fault repaired by next working day
- Response time to the customers for assistance by the operator,
- Upstream links for International Connectivity

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 customers 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, Network performance, reliability and availability and Maintainability, are areas where all service providers have scored relatively lower score as compared to other parameters.

Table-3 (Broadband Service – Mumbai Service Area)

Service Providers	% Satisfied with Provision of Service	% Satisfied with Billing Performance		% Satisfied with Help Services	% Satisfied with Network Performance, Reliability and Availability	% Satisfied with Maintainability	% Supplementar y Services	% Satisfied with Overall Satisfaction
		Postpaid	Prepaid					
Airtel	93%	95%	98%	83%	89%	96%	97%	93%
Hathway	95%	93%	94%	74%	77%	82%	83%	83%
MTNL	84%	93%	98%	68%	86%	90%	96%	84%
Reliance	95%	89%	91%	71%	82%	90%	98%	81%
Sify	89%	97%	90%	64%	75%	85%	95%	84%
Tata Comm	95%	98%	95%	77%	82%	89%	97%	84%
You	92%	88%	94%	75%	79%	85%	94%	83%

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 January, 2008 to May, 2008 is placed at TRAI Website (www.trai.gov.in).

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Annex-1A'

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

S.N	QOS Parameter	Bench mark	Bharti	BPL	MTNL	Vodafone	MTNL (CDMA)	Reliance	Tata-Tele
1	Accumulated downtime of community isolation	<24 Hrs	0	0	0	0	7	0	0
2	Call Setup Success Rate	>95%	93.92%	99.49%	87.14%	100%	94.9%	100%	99.5%
3	Service Access Delay	<20 Sec	15	10.84	11	6	4.6	4.75	9
4	SDCCH / Paging Channel congestion	<1%	0.2%	0.47%	0.45%	0.62%	0.7%	0	0
5	TCH Congestion	<2%	0.76%	0.55%	1.65%	0.49%	0.13%	0	0.5%
6	Call Drop Rate	<3%	1.15%	1.21%	0.84%	1.48%	1%	0.82%	2.21%
6(a)	%age of cells exceeding more than 3 % TCH drop		6.3%	2.25%	1.25%	1.72%	0%	1.9%	0
7	% of connections with good voice quality	> 95%	97.6%	96.57%	96.39%	96.95%	82.5%	NR	96.22%
8	POI Congestion	>0.5%	5.8%	0	0	0.12%	0.32%	0	0
9(a)	% Call answered electronically within 20 seconds within 40 seconds	80% 95%	100% 100%	85.87% NA	86% 98%	99.16% 99.25%	NR NR	99.49% 99.49%	100% 100%
9(b)	% Call answered by the operator within 60 seconds within 90 seconds	80% 95%	89% 97%	99.83% 99.96%	88% 96%	91.56% 93.86%	NR NR	73.96% 81.23%	100% 100%
10	Complaints per 100 bills issued	<0.1%	0.04%	0.05%	0.039%	1.36%	0.12%	0.09%	0.07%
11	% of Billing complaints resolved within 4 weeks	100%	100%	100%	100%	99.9%	100%	100%	100%
12	Period of refunds from the date of resolution of complaints	<4 weeks	<2 weeks	<4 weeks	< 4 weeks	4 weeks	<4 weeks	<4 weeks	NR

NR : Data not reported.

Not Meeting the benchmark

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

Service Providers	% Satisfied with Provision of Service	% Satisfied with Billing Performance		% Satisfied with Help Services	% Satisfied with Network Performance, Reliability and Availability	% Satisfied with Maintainability	% Supplementary Services	% Satisfied with Overall Satisfaction
		Postpaid	Prepaid					
Benchmarks	>95%	>90%	>90%	>90%	>95%	>95%	>95%	>95%
Airtel	67%	63%	67%	60%	60%	62%	69%	64%
MTNL	68%	66%	74%	58%	59%	64%	71%	63%
Reliance	69%	61%	67%	61%	64%	67%	70%	66%
TTML	76%	73%	71%	64%	67%	69%	77%	68%
Vodafone	72%	70%	68%	67%	63%	66%	75%	66%
BPL	74%	72%	68%	68%	62%	65%	71%	66%

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 – Mumbai Service Area**

S. No	Sub Parameter	Airtel	MTNL	Reliance	TTML	Vodafone	BPL
1	% of customers aware about the three stage grievances redressal mechanism	1.4 %	1.9 %	3.2 %	4.9 %	6.1 %	3.1 %
2	% of customers aware about Call Centre	83.9 %	90.4 %	84.2 %	85.9 %	83.3 %	85.5 %
3	% of customers who have complained in last 6 months to the toll free call centre/customer care/ Helpline telephone number	12.1 %	5.9 %	13.2 %	4.1 %	8.8 %	5.0 %
4	% of customers claimed to have been informed about the action taken on their complaint by call centre	32.8 %	30.2 %	29.1 %	26.1 %	53.2 %	37.0 %
5	% of customers whose billing complaint were resolved satisfactorily by call centre/ customer care within four weeks after they lodged their complaint	18.3 %	9.5 %	25.7 %	6.5 %	14.7 %	13.0 %
6	% of customers satisfied with the system of resolving of their complaints by call centre/ customer care/ helpline	53.4 %	55.6 %	47.3 %	43.5 %	70.6 %	48.1 %
7	% of customers aware about the nodal officer	1.6%	2.0%	3.5 %	4.9 %	6.4%	3.2 %
8	% of customers aware about the Appellate Authority	1.5 %	2.1 %	3.4 %	5.0 %	6.3 %	3.2 %
9	% of prepaid customers aware that they can get item-wise usage charge details, on request	15.9 %	12.1 %	8.8 %	7.2 %	11.5 %	8.9 %
10	% of customers who got Manual of Practice containing the terms and conditions of service, grievance redressal mechanism etc. while taking the connection	50.5 %	34.7 %	24.7 %	56.8 %	30.5 %	22.6 %

Annex-`2A`

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

S.no	Parameters	B'mark	Bharti	Reliance	Tata Tele.	MTNL
1	Provision of telephone after registration of demand					
1.1	Connections provided within 7 days	100%	94.80%	100%	100%	96.23%
2	Fault incidence (Number of faults/100 subscribers/month)	<3	1.60%	0.44%	1.69%	6.92%
3	Fault repair					
3.1	Faults repaired within 24 hours	>90%	96.30%	96.45%	97.85%	89.89%
3.2	Fault repaired in three working days	100%	100%	100%	100%	95.93%
4	Mean time to repair faults (MTTR) In hours	< 8 hrs	7.6 hrs	6.17 hrs	4.72 hrs	12.87 hrs
5	Call Completion Rate (CCR)	>55%	63.92%	76.45%(ASR)	56.50%	56.68%
6	Metering and billing credibility					
6.1	Billing complaints per 100 bills issued	<0.1%	0.30%	0.05%	0.098%	0.05%
7	Customer care/helpline promptness					
7.1	<u>Shift requests attended</u>					
	Shift requests attended within 3 days	95%	95.83%	100%	100%	87.22%
7.2	<u>Closure request attended</u>					
	Closure within 24 hours	95%	100%	99.38%	100%	97.29%
7.3	<u>Supplementary (additional) service requests attended</u>					
	Additional facility provided within 24 hours	95%	98.86%	95.84%	100%	97.07%
8	Response time to customer					
8.1	% age call answered through IVR in 20 seconds	80%	100%	95%	100%	100%
	% age call answered through IVR in 40 seconds	95%	100%	100%	100%	100%
8.2	% age calls answered by operator in 60 seconds	80%	90.45%	93%	94%	94.94%
	% age calls answered by operator in 90 seconds	95%	94.15%	97%	96%	94.94%
9	Time taken for refund of deposits after closure					
9.1	%age cases where refund received within 60 days	100%	NR	NR	NR	NR

NR : Data not reported.

Not Meeting the benchmark

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

Service Providers	% Satisfied with Provision of Service	% Satisfied with Billing Performance		% Satisfied with Help Services	% Satisfied with Network Performance, Reliability and Availability	% Satisfied with Maintainability	% Supplementary Services	% Satisfied with Overall Satisfaction
		Postpaid	Prepaid					
Benchmarks	>95%	>90%	>90%	>90%	>95%	>95%	>95%	>95%
Airtel	68%	70%	75%	66%	72%	68%	73%	72%
MTNL	68%	68%	68%	63%	70%	62%	71%	67%
Reliance	69%	64%	68%	58%	69%	60%	68%	66%
TTML	69%	68%	69%	65%	70%	60%	71%	65%

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

S. No	Sub Parameter	Airtel	MTNL	Reliance	TTML
1	% of customers aware about the three stage grievances redressal mechanism	7.1%	28.2%	10.4%	16.2%
2	% of customers aware about Call Centre	97.1%	84.9%	90.3%	80.9%
3	% of customers who have complained in last 6 months to the toll free call centre/customer care/ Helpline telephone number	27.3%	9.2%	9.0%	5.6%
4	% of customers claimed to have been informed about the action taken on their complaint by call centre	52.5%	38.8%	46.6%	49.2%
5	% of customers whose billing complaint were resolved satisfactorily call centre/customer care within four weeks after they lodged their complaint	48.9%	44.4%	37.2%	45.2%
6	% of customers satisfied with the system of resolving of their complaints by call centre/ customer care/ helpline	74.7%	60.2%	64.8%	67.7%
7	% of customers aware about the nodal officer	4.9 %	2.9 %	1.5%	1.2%
8	% of customers aware about the Appellate Authority	4.1%	1.0%	0.6 %	0.3%
9	% of prepaid customers aware that they can get item-wise usage charge details, on request	0.0%	2.3%	7.3%	6.9%
10	% of customers who got Manual of Practice containing the terms and conditions of service, grievance redressal mechanism etc. while taking the connection	37.1%	41.2%	57.6%	54.3%

Annex-`3A`

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

S.no	Parameters	B'mark	Hatha way	RCOM	Sify	You Telecom	MTNL	Tata Tele	Bharti	VSNL
1	Service Provisioning and activation time provided within 15 days	100%	98.50 %	100%	100%	99.90%	78.60%	100%	97.71%	100%
2 a)	Percentage faults repaired by next working days	> 90%	84.74 %	97%	86.60%	98.70%	74%	94%	93.90%	88%
2 b)	Percentage faults repaired within three working days	99%	91.96 %	100%	100%	99.71%	85%	100%	99.32%	96%
3 a)	Billing complaints per 100 bills issued	<2%	1.90%	0.21%	NA	0.25%	0.04%	0.19%	0.14%	2.85%
3 b)	%age of billing complaints resolved within 4 weeks	100%	100%	100%	NA	100%	100%	100%	100%	100%
3 c)	Time taken for refund of deposits after closure	100%	100%	100%	NA	100%	100%	100%	100%	100%
4	Customer care/helpline assessment									
4.1	Percentage calls answered within 60 seconds by the Operator	> 60%	60-80%	80.84%	93%	96%	35.74%	98.38%	88.71%	94.47%
4.2	Percentage calls answered within 90 seconds by the operator	>80%	80.90 %	85.99%	98%	98%	75.26%	98.38%	92.24%	98.17%
5	Bandwidth utilization/Throughput time									
5.1	POP to ISP Gateway Node(intra network) links	<80% on every link	<9%	45%	51.33%	73.80%	<80%	78%	76%	<80%
	<i>Upstream Bandwidth</i>									
5.2	ISP Gateway Node to IGSP/NIXI Node for international connectivity	<80%	<80%	73%	54.19%	79.31%	86.30%	89%	Its under BTSOL	<80%
6	Broadband connection speed (download)	>80%	89%	>90%	93.90%	85%	80.50%	96%	94.50%	85%
	Service availability/uptime	>98%	99%	99.95%	100%	98%	99.24%	99.99%	99.87%	98%
	Packet loss	<1%	<1%	<1%	<1%	0.60%	<1%	0.40%	0%	0%
	Network Latency									
9.1	POP/ISP Node to NIXI (In msec)	<120ms	8ms	4ms	DNP	10ms	7ms	23ms	25ms	80ms
	ISP node to NAP port (In msec)	<350ms	250ms	145ms	DNP	240ms	280ms	254ms	260ms	180ms
	Users reference point at ISP Gateway node to International nearest NAP abroad (Satelite)	<800ms	NA	NA	NA	NA	NA	NA	NA	NA

DNP : Data Not Provided

NA : Not Applicable

Not Meeting the benchmark

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

Service Providers	% Satisfied with Provision of Service	% Satisfied with Billing Performance		% Satisfied with Help Services	% Satisfied with Network Performance, Reliability and Availability	% Satisfied with Maintainability	% Supplementary Services	% Satisfied with Overall Satisfaction
		Postpaid	Prepaid					
Benchmarks	>90%	>90%	>90%	>90%	>85%	>85%	>85%	>85%
Airtel	71%	72%	72%	64%	70%	69%	68%	72%
Hathway	69%	69%	69%	59%	61%	62%	62%	63%
MTNL	64%	68%	72%	57%	65%	64%	66%	65%
Reliance	70%	65%	65%	57%	62%	63%	68%	62%
Sify	65%	68%	66%	55%	60%	63%	66%	65%
Tata Comm	71%	72%	71%	63%	65%	67%	68%	66%
You Telecom	73%	73%	73%	61%	65%	63%	68%	66%

**Annex-`3C`
Assessment of implementation and effectiveness of Telecom Consumer
Protection and Redressal of Grievances Regulations in respect Broadband
Service through Survey – Mumbai Service Area**

S. No	Sub Parameter	Airtel	Hathway	MTNL	Reliance	Sify	Tata	You Tele
1	% of customers aware about the three stage grievances redressal mechanism	14.0 %	11.6 %	10.2 %	41.0 %	8.5 %	10.5 %	9.7 %
2	% of customers aware about Call Centre	97.6 %	96.7 %	91.3 %	95.1 %	94.6 %	96.8 %	96.2 %
3	% of customers who have complained in last 6 months to the toll free call centre/customer care/ Helpline telephone number	28.7 %	26.6 %	28.4 %	21.9 %	21.5 %	20.1 %	48.8 %
4	% of customers claimed to have been informed about the action taken on their complaint by call centre	60.5 %	31.9 %	41.5 %	39.3 %	30.4 %	48.1 %	42.4 %
5	% of customers whose billing complaint were resolved satisfactorily by call centre/ customer care within four weeks after they lodged their complaint	15.0 %	4.2 %	8.6 %	5.0 %	6.9 %	7.0 %	11.7 %
6	% of customers satisfied with the system of resolving of their complaints by call centre/ customer care/ helpline	78.0 %	52.8 %	52.6 %	49.0 %	57.5 %	57.9 %	62.4 %
7	% of customers aware about the nodal officer	3.1 %	3.1 %	4.7 %	2.8%	3.1 %	6.1 %	5.8 %
8	% of customers aware about the Appellate Authority	1.6 %	1.8 %	3.2 %	1.5%	1.3 %	2.4 %	2.7 %
9	% of prepaid customers aware that they can get item-wise usage charge details, on request	38.3 %	30.3 %	24.4 %	4.1 %	22.0 %	24.9 %	37.0 %
10	% of customers who got Manual of Practice containing the terms and conditions of service, grievance redressal mechanism etc. while taking the connection	50.0 %	29.4 %	100.0%	20.7 %	36.6 %	36.8 %	46.5 %