

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 Kolkata service area

New Delhi, 19th December, 2008 - TRAI engaged [M/s. IMRB International](#) as independent agencies 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; I

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 report on Quality of Service

3 Cellular Mobile Telephone Service:

3.1 In Kolkata service area the audit of quality of service data of service providers, namely, Bharti Airtel, BSNL, Vodafone, TataTeleservices, RTL & 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 concerns (i.e. parameters) are identified as below:

- Connection with good voice quality,
- Call setup success rate,
- call drop rate

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 and supplementary services across the service providers.

Table-1 (Cellular Mobile Telephone Service - Kolkata service area)

S. No.	%Customer Satisfied	Airtel	Vodafone	BSNL	RCOM	TATA	RTL
1	% satisfied with the provision of service	94%	97%	88%	92%	96%	94%
2 a	% satisfied with the billing performance (Postpaid customers)	82%	86%	67%	70%	72%	84%
2 b	% satisfied with the billing performance (Prepaid customers)	91%	87%	86%	84%	88%	87%
3	% satisfied with help services	74%	76%	58%	52%	70%	65%
4	% satisfied with network performance, reliability and availability	93%	94%	78%	89%	88%	79%
5	% satisfied with maintainability	93%	93%	76%	87%	85%	79%
6	Overall customer satisfaction	91%	91%	75%	83%	86%	75%
7	Customer satisfaction with offered supplementary services % satisfied	86%	83%	76%	85%	89%	81%

4. Basic Service (wire line)

4.1 Objective Assessment/Audit of QOS performance: Basic (Wire line) services audit for Kolkata 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 incidences (No. of faults/100 subscribers/month),
- Fault repaired within 24 hours
- Mean Time to repair (MTTR)
- Billing complaints/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 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 help services, Billing performance and maintainability.

Table-2 {Basic Service (Wire line) - Kolkata service area }

S. N.	Customer Perception of Services	Bharti Airtel	BSNL	RCom	Tata
1	%age subscribers satisfied with the provision of service	94%	83%	87%	90%
	%age subscribers satisfied with the billing performance (Post paid customers)	91%	85%	80%	83%
	%age subscribers satisfied with the billing performance (Pre paid customers)	89%	86%	83%	84%
3	%age subscribers satisfied with help services	67%	72%	63%	80%
4	%age subscribers satisfied with network performance, reliability and availability	92%	88%	92%	88%
5	%age subscribers satisfied with maintainability	62%	72%	65%	69%
6	Overall customer satisfaction	87%	87%	86%	85%
7	%age subscribers satisfied with offered supplementary services	95%	76%	91%	89%

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 Kolkata 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 is identified based on analysis of one month QoS performance data and live measurement as below:

- Percentage connections provided within 15 days,
- Fault repaired by next working day,
- Time taken for refund of deposit after closure,

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 and Maintainability are areas where service providers have scored relatively lower score as compared to other parameters.

Table-3 (Broadband Service- Kolkata service area)

S. N.	Customer Perception of Services	Bharti Airtel	BSNL	RCom	VSNL	Sify
1	% satisfied with the provision of service	98%	80%	97%	90%	98%
2a	% satisfied with the billing performance (Prepaid customers)	59%	68%	66%	64%	65%
2b	% satisfied with the billing performance (Postpaid customers)	95%	88%	90%	93%	98%
3	% satisfied with help services	89%	60%	72%	75%	73%
4	% satisfied with network performance, reliability and availability	91%	79%	84%	85%	82%
5	% satisfied with maintainability	92%	78%	85%	79%	85%
6	% satisfied Overall customer satisfaction	93%	80%	82%	81%	82%
7	% satisfied with customer satisfaction with offered supplementary services such as allocation of static / fixed IP addresses, email ids etc.	3%	10%	2%	8%	1%

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- Kolkata service area

S.N	QOS Parameter	Bench mark	Bharti	BSNL	Vodafone	Tata Teleservice	RTL	R.Com
1	Accumulated downtime of community isolation	<24 Hrs	0.00	0.00	0.00	0.00	0.00	0.00
2	Call Setup Success Rate	>95%	99.99%	98.12%	99.99%	98.43%	99.85%	98.91%
3	Service Access Delay	<20 Sec	7.00	11.60	9.00	5.13	9.05	0.50
4	SDCCH / Paging Channel congestion	<1%	0.52%	0.39%	0.39%	0.00%	0.05%	0.00%
5	TCH Congestion	<2%	0.26%	0.81%	0.81%	2.00%	0.09%	0.00%
6	Call Drop Rate	<3%	1.13%	0.94%	0.87%	0.86%	1.15%	0.68%
7	% of connections with good voice quality	> 95%	96.69%	98.76%	96.76%	97.46%	97.94%	96.12%
8	POI Congestion	<0.5%	0%	0%	0%	0%	0%	0.1%
9(a)	% Call answered electronically within 20 seconds	80%	100.00%	91.00%	100.00%	100.00%	100.00%	100.00%
	within 40 seconds	95%	100.00%	96.00%	100.00%	100.00%	100.00%	100.00%
9(b)	% Call answered by the operator within 60 seconds	80%	93.00%	83.00%	95.00%	89.00%	87.00%	98.00%
	within 90 seconds	95%	94.00%	95.00%	97.00%	96.00%	Not measured	99.00%
10	Complaints per 100 bills issued	<0.1%	0.00%	0.00%	0.04%	0.01%	RTL has no postpaid subscribers	0.09%
11	% of Billing complaints resolved within 4 weeks	100%	100%	100%	99%	100%		100%
12	Period of refunds from the date of resolution of complaints	100%	100%	100%	99%	100%		100%

*Details pertaining to these are obtained through operator assisted drive tests. Results of the drive tests are explained in greater detail in critical findings

All the service providers complied with the TRAI benchmark on an average basis. However, details of the areas where service coverage has been found to be inadequate have been explained in critical findings for drive tests

**Annex-`1B`
Customers Perception of Service for Cellular Mobile Telephone Service
through Survey- Kolkata service area**

S. No.	Customer Perception of Services	Benchmark	Airtel	Vodafone	BSNL	RCOM	TATA	RTL
1	% satisfied with the provision of service	>95%	70%	72%	65%	69%	70%	67%
2 a	% satisfied with the billing performance (Postpaid customers)	>90%	62%	64%	55%	58%	56%	NA*
2 b	% satisfied with the billing performance (Prepaid customers)	>90%	65%	63%	62%	61%	64%	62%
3	% satisfied with help services	>90%	58%	59%	51%	49%	56%	54%
4	% satisfied with network performance, reliability and availability	>95%	67%	68%	60%	65%	64%	60%
5	% satisfied with maintainability	>95%	67%	67%	59%	64%	63%	59%
6	Overall customer satisfaction	>95%	66%	66%	59%	62%	63%	58%
7	Customer satisfaction with offered supplementary services % satisfied	>95%	62%	62%	55%	61%	64%	59%

**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- Kolkata service area**

S.N.	Sub Parameter	Airtel	Vodafone	BSNL	RCOM	TATA	RTL
1	Awareness of three stage grievance redressal mechanism	8%	8%	9%	8%	8%	8%
2	For pre-paid customers, awareness about item-wise call charge details on request	22%	27%	22%	20%	23%	11%
3	If aware (for pre-paid customers), ever denied of item wise usage charge details for pre-paid connection	4%	4%	4%	8%	5%	3%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	12%	14%	11%	11%	18%	24%
5	Awareness of Call center for redressing grievances	40%	38%	36%	35%	36%	27%
6	Percentage of consumers made any complaints to the toll free number within last 6 months	8%	8%	7%	7%	8%	15%
7	Call center informing about the action taken on complaints	46%	54%	39%	43%	63%	73%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	9%	9%	7%	4%	3%	2%
9	percentage satisfied with complaint resolution by call center	49%	53%	40%	47%	54%	47%
10	Awareness of Nodal officer for redressing grievances	2%	3%	3%	1%	3%	5%
11	Awareness of contact details of Nodal officer	2%	1%	2%	1%	1%	1%

Annex-`2A`
Objective Assessment of Quality of Service - Service Provider's
Performance in respect of Basic Service (Wire line)
Kolkata service area

S.no	Parameters	B'mark	Bharti	BSNL*	RCOM	TATA teleservices*
1	Provision of telephone after registration of demand					
1.1	Connections completed within 7 days	100%	87%	43%	79%	All connections provided in technically non feasible areas
2	Fault incidences (No. of faults/100 customers/month)	< 3	5	10	1.33	6
3	Fault Repair					
3.1	Faults repaired within 24 hours	>90%	59%	60%	97%	100%
3.2	Faults repaired within three working days	100%	83%	87%	98%	100%
4	Mean time to Repair (MTTR)	<8 hours	9.45	32	5	1.2
5	Call Completion Rate (CCR)	>55%	58%	71%	DNA	69%
6	Metering and billing credibility					
6.1	Billing complaints per 100 bills issued	<0.1%	1.41%	0.01%	0.09%	0.43%
6.2	%age of billing complaints resolved within 4 weeks	100%	100%	100%	100%	100%
7	Customer care/helpline promptness					
7.1	Shift requests attended					
	Shift requests attended within 3 days	95%	100%	59%	96%	NA
7.2	Closure request attended					
	Closure within 24 hours	95%	100%	64%	100%	NA
7.3	Supplementary (additional) service requests attended					
	Additional facility provided within 24 hours	95%	100%	97%	100%	23%
8	Response time to customer for assistance					
8.1	% age call answered through IVR in 20 seconds	80%	DNA	Call centre data not available at the exchanges	100%	DNA
	% age call answered through IVR in 40 seconds	100%	DNA		100%	DNA
8.2	% age calls answered by operator in 60 seconds	80%	97%		95%	97%
	% age calls answered by operator in 90 seconds	95%	99%		98%	97%
9	Time taken for refund of deposits after closure					
7.1	%age cases where refund received within 60 days	100%	100%	71%	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 (Wireline) services only to corporate

** Methodology not in line with QoS ■ Figures provided on All India basis ■ Not meeting the benchmark **B'mark** = TRAI Benchmark, **DNA** = Details not available, **NA**: Not Applicable

**Annex-`2B`
Customers Perception of Service for Basic Service (Wire line)
through Survey- Kolkata service area**

S.N.	Circle - Kolkata	Benchmark	Airtel	BSNL	RCOM	TATA
1	% satisfied with the provision of service	>95%	68%	65%	66%	68%
2a	% satisfied with the billing performance (Postpaid customers)	>90%	64%	62%	60%	64%
2b	% satisfied with the billing performance (Prepaid customers)	>90%	66%	87%	64%	63%
3	% satisfied with help services	>90%	56%	57%	54%	60%
4	% satisfied with network performance, reliability and availability	>95%	66%	64%	66%	64%
5	% satisfied with maintainability	>95%	54%	56%	55%	56%
6	% satisfied Overall customer satisfaction	>95%	64%	63%	63%	62%
7	Customer satisfaction with offered supplementary services % satisfied	>95%	70%	63%	64%	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- Kolkata service area**

S. N.	Sub-parameter	Airtel	BSNL	RCOM	TATA
1	Awareness of three stage grievance mechanism	6%	8%	7%	5%
2	For pre-paid customers, awareness about item-wise call charge details on request	17%	24%	18%	11%
3	If aware (for pre-paid customers), ever denied of item wise usage charge details for pre-paid connection	3%	0%	1%	10%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	13%	2%	12%	9%
5	Awareness of Call center for redressing grievances	38%	31%	36%	33%
6	Penetration of consumers made any complaints to the toll free number within last 6 months	6%	16%	5%	9%
7	Call center informing about the action taken on complaints	56%	59%	63%	56%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	7%	11%	7%	5%
9	% subscribers satisfied with the complain resolution by call center	52%	57%	47%	48%
10	Awareness of Nodal officer for redressing grievances	2%	7%	3%	5%
11	Awareness of Appellate authority for redressing grievances	1%	4%	1%	2%

Annex-`3A`

Objective Assessment of Quality of Service - Service Provider's Performance in respect of Broadband Service- Kolkata service area

S. No.	Parameters	B'mark	Bharti	BSNL	Sify	VSNL	RCOM
1	Service provisioning uptime						
1.1	Total number of connections registered during the period		658	12140	307	564	1092
1.2	Percentage connections provided within 15 days	100%	90%	96%	100%	100%**	64%**
2	Fault repair restoration time						
2.1	Total number of faults registered during the period		1631	18408	521	8306	19
2.2	Percentage faults repaired by next working days	> 90%	97%	67%	90%	88%**	100%
2.3	Percentage faults repaired within three working days	99%	99%	84%	100%	97%**	100%
3	Billing performance						
3.1	Total bills generated		18331	104483	Prepaid*	5799	3486
3.2	Billing complaints per 100 bills issued	<2%	1.41%	0.33%		0.88%	0.11%
3.3	%age of billing complaints resolved within 4 weeks	100%	100%	98%		100%	100%
3.4	Time taken for refund of deposits after closure	100%	100%	19%	100%	100%	100%
4	Customer care/helpline assessment						
4.1	Percentage calls answered within 60 seconds	> 60%	85%	87%	100%	93%	94%
4.2	Percentage calls answered within 90 seconds	>80%	91%	100%	100%	98%	96%
5	Bandwidth utilisation/Throughput						
	<i>Intra network links (POP to ISP Node)</i>						
5.1	Total number of intra network links	< 80% for all the links	80	BRAS-23,T1-24,T2-610, DSLAM-5456	400	4 (POP's in Kolkata)	2
5.2	Total number if intra network links crossing 90%		0	Chennai BRAS > 90%	5	0	0
	<i>Upstream Bandwidth (ISP Node to IGSP/NAP/NIXI)</i>						
5.3	Total number of upstream links		4	97	28	35	NA*
5.4	<i>Number of upstream links having >90% bandwidth utilisation</i>		0	1	0	0	NA*
5.5	Percentage bandwidth utilized on upstream links	<80%	67%	75%	64%	74%	NA*
6	Broadband download speed	>80%	Complied	Complied	Complied	Complied	Complied
7	Service availability/uptime	>98%	99.99%	99.91%	100.00%	97.97%	99.41%
8	Packet loss	<1%	<1%	<1%	<1%	<1%	<1%**
9	Network Latency						
9.1	POP/ISP Node to NIXI (In msec)	<120	<80	<120	<45	<90	<30
9.2	ISP node to NAP port (In msec)	<350	<120	<350	<300	<200	<290

(*Note: -For Sify all the connections provided to retail broadband customers are prepaid, hence the service provider claims that there are no billing related complaints. Also, for Reliance there is no international gateway located in Kolkata, hence all the parameters related to the same show NA i.e. Not Applicable)

** Methodology not in line with QoS

■ Figures provided on All India basis

■ Not meeting the benchmark

B'mark = TRAI Benchmark, DNA = Details not available, NA: Not Applicable

**Annex-`3B`
Customers Perception of Service for Broadband Service through Survey-
Kolkata service area**

S. N.	Customer Perception of Services	Benchmark	Airtel	BSNL	RCOM	VSNL	Sify
1	% satisfied with the provision of service	>90%	67%	60%	67%	65%	66%
2a	% satisfied with the billing performance (Prepaid customers)	>90%	59%	68%	66%	64%	65%
2b	% satisfied with the billing performance (Postpaid customers)	>90%	65%	62%	63%	65%	66%
3	% satisfied with help services	>90%	63%	52%	57%	58%	58%
4	% satisfied with network performance, reliability and availability	>85%	64%	60%	61%	62%	61%
5	% satisfied with maintainability	>85%	65%	59%	62%	59%	62%
6	% satisfied Overall customer satisfaction	>85%	65%	60%	60%	61%	60%
7	% satisfied with customer satisfaction with offered supplementary services such as allocation of static / fixed IP addresses, email ids etc.	>85%	65%	60%	68%	62%	67%

**Annex-`3C`
Assessment of implementation and effectiveness of Telecom Consumer
Protection and Redressal of Grievances Regulations in respect Broadband
Service through Survey- Kolkata service area**

S.N.	Sub Parameter	Airtel	BSNL	RCOM	VSNL	Sify
1	Awareness of three stage grievance redressal mechanism	5%	17%	4%	9%	4%
2	Provision of Manual of Practice containing terms and conditions of service, grievance redressal mechanism etc	31%	23%	9%	22%	8%
3	For pre-paid customers, awareness about item-wise call charge details on request	4%	7%	2%	12%	14%
4	If aware (for pre-paid customers), ever denied of item-wise usage charge details for pre-paid connection	0%	0%	0%	0%	0%
5	Awareness of Call center for redressing grievances	19%	45%	18%	38%	8%
6	Percentage of consumers made any complaints to the toll free number within last 6 months	27%	23%	31%	35%	18%
7	Call center informing about the action taken on complaints	94%	62%	89%	81%	80%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	1%	9%	2%	7%	1%
9	Percentage satisfied with the complaint resolution by call center	62%	49%	55%	53%	56%
10	Awareness of Nodal officer for redressing grievances	2%	5%	1%	2%	3%
11	Awareness of appellate authority for redressing grievances	1%	2%	1%	2%	1%