

**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 U.P.(East) service area.**

New Delhi, 26<sup>th</sup> December, 2008 - TRAI engaged [M/s. IMRB International](#) 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 Voluntary Organization in interest of Consumer Education \(VOICE\)](#) for conducting the 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 4% for category B Circles for each of the

service provider. The entire samples selected in the rural areas were interviewed personally and in urban areas 75% were interviewed personally and 25% were interviewed telephonically.

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

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

3.1 In U.P.(East) service area the audit of quality of service data of service providers, namely, Bharti Airtel, Vodafone, Idea, BSNL, Tata Teleservices and Reliance Communications was conducted.

3.2 Objective Assessment/Audit of Quality of Service performance: Most of the service providers are meeting most of the benchmarks. The Time Consistent Busy Hour (TCBH) reported by all the service providers, except RCom, 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, Connections with Good Voice Quality .Call Set-up Success Rate, Call Drop Rate and Hand off Success rate. The areas of concern (i.e. parameters) are identified as below:

- Connection with Good voice quality
- Call Set-up 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, and supplementary services across the service providers.

**Table-1 (Cellular Mobile Telephone Service)-U.P. (East) service area**

S. No.	%Customer Satisfied	Bharti Airtel	Vodaf one	IDEA	BSNL	RCOM	TATA
1	% satisfied with the provision of service	99.9%	97.4%	100.0%	98.9%	100.0%	99.1%
2 a	% satisfied with the billing performance (Postpaid customers)	80.0%	95.2%	97.6%	96.5%	97.2%	90.5%
2 b	% satisfied with the billing performance (Prepaid customers)	99.1%	86.1%	97.1%	90.1%	93.0%	96.5%
3	% satisfied with help services	89.5%	84.5%	95.1%	81.3%	86.5%	93.5%

4	% satisfied with network performance, reliability and availability	99.2%	96.8%	98.6%	95.7%	98.3%	98.5%
5	% satisfied with maintainability	99.8%	98.0%	98.2%	97.3%	97.6%	98.6%
6	Overall customer satisfaction	99.7%	99.3%	99.2%	99.0%	98.3%	99.5%
7	Customer satisfaction with offered supplementary services % satisfied	92.5%	94.7%	93.9%	89.8%	91.4%	90.1%

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

**4.1 Objective Assessment/Audit of QOS performance:** Basic (Wire line) services audit for U.P. (East) 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 concerns 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 within 24 hours and mean time to repair (MTTR)
- Response time to customers for assistance.

**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, help services and billing performance.

**Table-2 {Basic Service (Wire line)} -U.P. (East) service area**

S. N.	Customer Perception of Services	Bharti	BSNL
1	%age subscribers satisfied with the provision of service	95.5%	97.8%
2	%age subscribers satisfied with the billing performance (Post paid customers)	87.9%	89.6%
	%age subscribers satisfied with the billing performance (Pre paid customers)	87.8%	85.9%
3	%age subscribers satisfied with help services	89.3%	99.6%
4	%age subscribers satisfied with network performance, reliability and availability	96.7%	98.9%
5	%age subscribers satisfied with maintainability	87.9%	89.3%
6	Overall customer satisfaction	90.5%	99.3%
7	%age subscribers satisfied with offered supplementary services	68.1%	95.2%

## 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 U.P. (East) 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:

- Fault repaired within 24 hours.
- Service Provisioning ( Percentage connection provided within 15 days)
- Response time to customers for assistance

**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 there is a need to improve the satisfaction level of subscribers with respect to the maintainability, help services and billing performance.

**Table-3 (Broadband Service) -U.P. (East) service area**

S. N.	Customer Perception of Services	Airtel	BSNL	Rel Com
1	% satisfied with the provision of service	85.9%	95.2%	100.0%
2a	% satisfied with the billing performance (Prepaid customers)	90.0%	73.7%	78.6%
2b	% satisfied with the billing performance (Postpaid customers)	94.0%	98.2%	97.5%
3	% satisfied with help services	87.7%	91.9%	83.2%
4	% satisfied with network performance, reliability and availability	85.9%	88.4%	79.5%
5	% satisfied with maintainability	94.1%	95.7%	88.2%
6	% satisfied Overall customer satisfaction	98.3%	98.8%	90.0%
7	% satisfied with customer satisfaction with offered supplementary services such as allocation of static / fixed IP addresses, email ids etc.	95.5%	74.5%	83.1%

## 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 May, 2008 to August, 2008 is placed at TRAI Website ([www.traigov.in](http://www.traigov.in)).**

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## Annex-`1A`

### Objective Assessment of Quality of Service - Service Provider's Performance in respect of Cellular Mobile Telephone Service-U.P. (East) service area

S.N	QOS Parameter	Bench mark	Bharti Airtel	BSNL	Vodafone	TATA	RCOM	IDEA
1	Accumulated downtime of community isolation	<24 Hrs	10.16	2.15	0.00	0.00	0.93	18.62
2	Call Setup Success Rate	>95%	95.84%	96.88%	96.17%	98.33%	98.47%	99.06%
3	Service Access Delay	<20 Sec	14.19	10.85	6.33	5.11	4.00	20.50
4	SDCCH / Paging Channel congestion	<1%	0.93%	0.66%	0.70%	0.00%	0.00%	0.17%
5	TCH Congestion	<2%	1.96%	1.50%	1.87%	0.00%	0.53%	0.94%
6	Call Drop Rate	<3%	1.54%	1.64%	2.24%	0.97%	0.97%	1.41%
	<i>Service Coverage</i>							
	<i>In door</i>	>-75dbm						
	<i>In vehicle</i>	>-85dbm	Complied	Complied	Complied	Complied	Complied	Complied
	<i>Out door - in city</i>	>-95dbm						
7	% of connections with good voice quality	> 95%	100.00%	93.03%	91.33%	99.18%	99.91%	96.45%
8	POI Congestion	>0.5%	Complied	Complied	Complied	Complied	Complied	Complied
9(a)	% Call answered electronically within 20 seconds within 40 seconds	80%	80.00%	81.00%	100.00%	100.00%	97.90%	96.00%
		95%	95.00%	94.00%	100.00%	100.00%	97.90%	Operator does not measure the same
9(b)	% Call answered by the operator within 60 seconds within 90 seconds	80%	79.91%	84.00%	96.81%	95.90%	91.57%	95.00%
		95%	82.05%	96.00%	99.11%	96.64%	94.73%	Operator does not measure the same
10	Complaints per 100 bills issued	<0.1%	0.08%	0.10%	0.00%	0.07%	0.10%	0.01%
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%	99%	100%	NA	100%	100%

**Annex-`1B`  
Customers Perception of Service for Cellular Mobile Telephone Service  
through Survey-U.P. (East) service area**

S. No.	Customer Perception of Services	Bench mark	Bharti	Vodaf one	IDEA	BSNL	RCOM	TATA
1	% satisfied with the provision of service	>95%	72.3%	70.7%	73.5%	70.9%	75.3%	74.0%
2 a	% satisfied with the billing performance (Postpaid customers)	>90%	68.3%	76.7%	82.5%	72.5%	74.0%	68.5%
2 b	% satisfied with the billing performance (Prepaid customers)	>90%	71.1%	66.6%	69.8%	68.1%	70.5%	69.8%
3	% satisfied with help services	>90%	74.3%	64.7%	74.4%	64.7%	68.9%	69.0%
4	% satisfied with network performance, reliability and availability	>95%	79.0%	74.0%	80.0%	75.3%	80.1%	79.8%
5	% satisfied with maintainability	>95%	77.2%	73.8%	77.8%	74.8%	78.6%	76.1%
6	Overall customer satisfaction	>95%	72.5%	71.4%	71.9%	71.6%	74.6%	73.3%
7	Customer satisfaction with offered supplementary services % satisfied	>95%	66.7%	67.8%	67.3%	66.9%	66.4%	65.2%

**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-U.P. (East) service area**

S.N.	Sub Parameter	Bharti	Vodafone	Idea Cellular	BSNL	Rel Comm	Tata Teleservices
1	Awareness of three stage grievance redressal mechanism	8.2%	21.5%	17.3%	8.0%	18.0%	21.2%
2	For pre-paid customers, awareness about item-wise call charge details on request	30.3%	42.3%	10.9%	24.6%	17.8%	21.3%
3	If aware (for pre-paid customers), ever denied of item wise usage charge details for pre-paid connection	6.2%	21.1%	4.7%	47.2%	55.2%	21.7%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	27.9%	40.4%	38.1%	46.8%	33.7%	46.1%
5	Awareness of Call center for redressing grievances	96.8%	91.2%	95.5%	93.8%	93.7%	90.5%
6	Percentage of consumers made any complaints to the toll free number within last 6 months	1.7%	9.0%	5.0%	7.7%	6.0%	3.2%
7	Call center informing about the action taken on complaints	30.0%	33.3%	43.30%	58.7%	72.2%	10.5%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	100.0%	77.6%	66.7%	97.7%	100.0%	54.5%
9	percentage satisfied with complaint resolution by call center	90.0%	100.0%	93.3%	95.7%	100.0%	89.5%
10	Awareness of Nodal officer for redressing grievances	0.0%	0.3%	0.2%	0.0%	0.2%	1.0%
11	Awareness of contact details of Nodal officer	0.0%	0.2%	0.0%	0.0%	0.7%	0.2%

## Annex-`2A`

### Objective Assessment of Quality of Service - Service Provider's Performance in respect of Basic Service (Wire line) U.P. (East) service area

S.no	Parameters	B'mark	Bharti	BSNL*	RCOM
1	Provision of telephone after registration of demand				
1.1	Connections completed within 7 days	100%	100%	92%	100%
2	Fault incidence/clearance statistics				
3	Fault incidences(No. of faults/100 subscribers/month)	<3	6.9	10.75	9.05
3.1	Faults repaired within 24 hours	>90%	98%	54%	100%
3.2	Faults repaired within three working days	100%	98%	93%	100%
4	Mean time to Repair (MTTR)	<8 hours	6.70	34	<5
5	Call Completion Rate (CCR)	>55%	97%	36%	DNA
6	Metering and billing credibility				
6.1	Billing complaints per 100 bills issued	<0.1%	0.05%	0.10%	0.03%
6.2	%age of billing complaints resolved within 4 weeks	100%	100%	89%	100%
7	Customer care/helpline promptness				
7.1	<u>Shift requests attended</u>				
	Shift requests attended within 3 days	95%	88%	51%	NA
7.2	<u>Closure request attended</u>				
	Closure within 24 hours	95%	93%	50%	100%
7.3	<u>Supplementary (additional) service requests attended</u>				
	Additional facility provided within 24 hours	95%	99%	96%	100%
8	Response time to customer for assistance				
8.1	% age call answered through IVR in 20 seconds	80%	Not measured by the operator	Details not available at the exchanges	100%
	% age call answered through IVR in 40 seconds	100%			100%
8.2	% age calls answered by operator in 60 seconds	80%	87%		99%
	% age calls answered by operator in 90 seconds	95%	93%		100%
9	Time taken for refund of deposits after closure				
9.1	%age cases where refund received within 60 days	100%	DNA	97%	100%

{\*Note: For BSNL data pertains to the sample 5% of exchanges audited during the period of April to July 2008, whereas for rest of the operators figures pertain to all the exchanges present in the circle}

\*\* Methodology not in line with QoS ■ Figures provided on All Inc ■ 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 U.P. (East) service area**

S. N.	Customer Perception of Services	Benchmark	Bharti	BSNL
1	%age subscribers satisfied with the provision of service	>95%	67.7%	68.3%
2	%age subscribers satisfied with the billing performance (Post paid customers)	>90%	63.9%	64.8%
	%age subscribers satisfied with the billing performance (Pre paid customers)		86.5%	81.2%
3	%age subscribers satisfied with help services	>90%	63.8%	69.0%
4	%age subscribers satisfied with network performance, reliability and availability	>95%	71.1%	70.9%
5	%age subscribers satisfied with maintainability	>95%	64.6%	63.9%
6	Overall customer satisfaction	>95%	65.2%	69.3%
7	%age subscribers satisfied with offered supplementary services	>95%	56.5%	65.7%

**Annex-`2C`  
Assessment of implementation and effectiveness of Telecom Consumer  
Protection and Redressal of Grievances Regulations in respect Basic  
Service (Wire line) through Survey U.P. (East) service area**

S.N.	Sub Parameter	Bharti	BSNL
1	Awareness of three stage grievance redressal mechanism	29.5%	43.0%
2	For pre-paid customers, awareness about item-wise call charge details on request	55.4%	56.4%
3	If aware (for pre-paid customers), ever denied of item-wise usage charge details for pre-paid connection	23.0%	19.2%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	71.3%	67.8%
5	Awareness of Call center for redressing grievances	100.0%	100.0%
6	Percentage of consumers making any complaints to the toll free number within last 6 months	64.1%	70.5%
7	Call center informing about the action taken on complaints	85.6%	94.8%
8	Resolution of billing complaint by customer care within 4 weeks of lodging complaint	81.2%	65.7%
9	Level of satisfaction with the complain resolution by call center	95.7%	95.3%
10	Awareness of Nodal officer for redressing grievances	0.3%	0.8%
11	Awareness of contact details of Nodal officer	1.2%	1.2%

## Annex-`3A`

### Objective Assessment of Quality of Service - Service Provider's Performance in respect of Broadband Service U.P. (East) service area

S.No	Parameters	B'mark	Bharti	BSNL	Sify*	H'way	VSNL	RCOM
1	<b>Service provisioning uptime</b>							
1.1	Total connections registered		1280	3015	112	180	477	233
1.2	Percentage connections provided within 15 days	100%	100%	70%	100%	100%	99%**	79%**
2	<b>Fault repair restoration time</b>							
2.1	Total number of faults registered/calls made		1176	2506	126	367	10992	983
2.2	Percentage faults repaired by next working days	> 90%	99%	78%	90%	93%	80%**	100%
2.3	Percentage faults repaired within three working days	99%	100%	94%	100%	99%	93%**	100%
3	<b>Billing performance</b>							
3.1	Total bills generated		17609	26859	Prepaid	135	6013	2413
3.2	Billing complaints per 100 bills issued	<2%	0.03%	0.23%		1.48%	1.18%	0.12%
3.3	%age of billing complaints resolved within 4 weeks	100%	100%	75%		100%	100%	100%
3.4	Time taken for refund of deposits after closure	100%	DNA	100%	No cases		100%	100%
4	<b>Customer care/helpline assessment</b>							
4.1	Percentage calls answered within 60 seconds	> 60%	56%	99%	100%	84%	78%	84%
4.2	Percentage calls answered within 90 seconds	>80%	66%	100%	100%	DNA	85%	90%
5	<b>Bandwidth utilisation/Throughput</b>							
5.1	Total number of intra network links tested		49	BRAS-23,T1-24,T2-610, DSLAM-5456	400	9 (4 in Kanpur and 5 in Noida)	16	5 (Links physically located in Delhi NCR)
5.2	Total number if intra network links crossing 90%		0	Uplink Traffic in Chennai BRAS is > 90%	4	0	1	0
	<b>Upstream Bandwidth (ISP Node to NIXI/NAP/IGSP)</b>							
5.3	Total number of upstream links		2 (Present in Delhi)	97	28	3	28	1 (Delhi to NIXI)
5.4	Number of links > 90%		0	1	0	0	0	0
5.5	Percentage bandwidth utilised on upstream links	<80%	20%	75%	74%	69%	64%	22%
6	<b>Broadband download speed</b>	>80%						
7	<b>Service availability/uptime</b>	>98%	99.99%	100.00%	100.00%	99.80%	98.35%	100.00%
8	<b>Packet loss</b>	<1%	<1%	<1%	<1%	<1%	<1%	DNA**
9	<b>Network Latency</b>							
9.1	POP/ISP Node to NIXI to IGSP	<120msec	< 60	<120	<45 ms	<30	<80	<40
9.2	ISP node to NAP port	<350msec	< 120	Complied	<250 ms	<100	<180	<250

**Annex-`3B`  
Customers Perception of Service for Broadband Service through Survey  
U.P. (East) service area**

S. N.	Customer Perception of Services	Benchmark	Airtel	BSNL	Rel Com
1	% satisfied with the provision of service	>90%	63.9%	69.8%	71.7%
2a	% satisfied with the billing performance (Prepaid customers)	>90%	64.4%	61.4%	59.5%
2b	% satisfied with the billing performance (Postpaid customers)	>90%	66.5%	70.9%	69.3%
3	% satisfied with help services	>90%	64.0%	66.6%	61.9%
4	% satisfied with network performance, reliability and availability	>85%	61.1%	62.2%	59.2%
5	% satisfied with maintainability	>85%	68.6%	68.4%	73.7%
6	% satisfied Overall customer satisfaction	>85%	66.2%	66.7%	63.8%
7	% satisfied with customer satisfaction with offered supplementary services such as allocation of static / fixed IP addresses, email ids etc.	>85%	67.7%	58.5%	61.5%

**Annex-`3C`  
Assessment of implementation and effectiveness of Telecom Consumer  
Protection and Redressal of Grievances Regulations in respect Broadband  
Service through Survey U.P. (East) service area**

S.N.	Sub Parameter	Bharti	Rel Comm	BSNL
1	Awareness of three stage grievance mechanism	8.3%	8.9%	5.4%
2	For pre-paid customers awareness about item-wise usage charge details on request	76.7%	71.4%	42.1%
3	If aware (for pre-paid customers) ever denied of item wise usage charge details for pre paid connection	0.0%	0.0%	0.0%
4	For new customers provisioning of "Manual of practice while taking the new connection	7.3%	10.3%	23.7%
5	Awareness of call center for redressing grievances	99.3%	100.0%	100.0%
6	Penetration of consumers made any complaint to the toll free number within last six months	27.5%	44.4%	31.7%
7	Call center informing about the action taken on complaint	43.2%	19.2%	33.3%
8	Resolution of complaint by customer care with in 4 weeks of lodging complaint	22.4%	44.0%	41.0%
9	Percentage satisfied with complaint resolution by call center	66.7%	86.0%	68.3%
10	Awareness of nodal officer for redressing grievances	16.3%	3.3%	1.0%
11	Awareness of appellate authority for redressing grievances	4.8%	3.8%	2.2%