



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 Karnataka service area the audit of quality of service data of service providers, namely, Bharti Airtel, BSNL, Vodafone, Tata Teleservices, Reliance Communications and Spice was conducted.

3.2 Objective Assessment/Audit of Quality of Service performance: For some of the network parameters, the service providers do not 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 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, network performance reliability and availability, maintainability and Supplementary Services across the service providers.

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

S. N.	Customer Perception of Services	Bharti Airtel	Vodafone	BSNL	Rel Comm	TATA	Spice
1	%age subscribers satisfied with the provision of service	98%	98%	99%	96%	96%	98%
2a	%age subscribers satisfied with the billing performance (postpaid)	94%	89%	97%	90%	98%	96%
2b	%age subscribers satisfied with the billing performance (prepaid)	98%	98%	98%	97%	97%	97%
3	%age subscribers satisfied with help services	90%	85%	86%	87%	83%	83%

4	%age subscribers satisfied with network performance, reliability and availability	93%	90%	92%	92%	94%	93%
5	%age subscribers satisfied with maintainability	93%	87%	90%	91%	90%	80%
6	Overall customer satisfaction	94%	91%	84%	82%	95%	88%
7	%age subscribers satisfied with offered supplementary services	88%	89%	89%	92%	94%	86%

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

**4.1 Objective Assessment/Audit of QoS performance:** Basic (Wire line) services audit for Karnataka circle broadly indicates that except M/s. TATA Teleservices all 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 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 fault per 100 customers per month).
- Fault repaired by next working day.
- Mean time to repair (MTTR).

**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 help services and maintainability.

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

S.N.	Circle - Karnataka	Bharti Airtel	BSNL	Rel Com	TATA
1	% satisfied with the provision of service	97%	99%	98%	97%
2a	% satisfied with the billing performance (Postpaid customers)	96%	96%	96%	93%
2b	% satisfied with the billing performance (Prepaid customers)	97%	97%	97%	97%
3	% satisfied with help services	89%	87%	90%	87%
4	% satisfied with network performance, reliability and availability	94%	96%	93%	95%
5	% satisfied with maintainability	74%	84%	81%	77%
6	% satisfied Overall customer satisfaction	96%	96%	96%	96%
7	Customer satisfaction with offered supplementary services % satisfied	94%	85%	89%	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 Karnataka 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:

- Connections provided within 15 days.
- Fault repaired by next working day.

**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 reliability and availability and supplementary services are the areas where service providers have scored relatively lower score as compared to other parameters.

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

S. N.	Customer Perception of Services	Bharti Airtel	BSNL	Rel Com	VSNL	Sify	You Telecom	Hathway
1	% subscribers satisfied with the provision of service	98%	98%	93%	94%	97%	99%	87%
2a	% subscribers satisfied with the billing performance (Prepaid customers)	98%	97%	99%	92%	92%	93%	92%
2b	% subscribers satisfied with the Billing performance (Postpaid customers)	97%	98%	87%	91%	97%	95%	92%
3	% subscribers satisfied with help services	96%	87%	75%	72%	75%	84%	77%
4	% subscribers satisfied with network performance, reliability and availability	97%	96%	87%	87%	89%	92%	90%
5	% subscribers satisfied with maintainability	91%	90%	76%	68%	78%	85%	84%
6	Overall level of customer satisfaction	97%	94%	82%	86%	85%	91%	90%
7	% subscribers satisfied with offered supplementary services	94%	78%	88%	87%	81%	93%	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 April, 2008 to August, 2008 is placed at TRAI Website ([www.trai.gov.in](http://www.trai.gov.in)).***

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**Annex-1A**  
**Service Provider's Performance in respect of Cellular Mobile Telephone Service**  
**(Karnataka Service Area)**

Parameters	Benchmark	Bharti Airtel	BSNL	Vodafone	TATA Teleservices	RCOM	Spice
Accumulated downtime for community isolation	< 24 hrs.	13.70	9.18	0	0	0.90	18.15
Call Set Up Success Rate (CSSR)	> 95%	92.36%	95.52%	87.27%	98.88%	99.30%	98.26%
Service Access Delay*	9 to 20 seconds (< = 15 seconds for 100 calls)	4.15	11.20	2.86	9.05	4.10	11.50
<b>Blocked Call Rate</b>							
<i>SDCCH /Paging Channel Congestion</i>	<1%	0.98%	0.82%	0.89%	0.00%	0.00%	0.30%
<i>TCH Congestion</i>	< 2%	1.98%	1.90%	2.46%	0.04%	0.48%	1.60%
Call drop rate	< 3%	1.84%	0.72%	2.12%	0.35%	0.70%	1.18%
Percentage connections with good voice quality*	> 95%	96.22%	91.30%	91.56%	99.15%	98.59%	89.69%
<b>Service coverage*</b>							
<i>In door</i>	>-75dbm	Complied	Complied	Complied	Complied	Complied	Complied
<i>In vehicle</i>	>-85dbm						
<i>Out door - in city</i>	>-95dbm						
POI congestion	< 0.5%	0.00%	0.01%	0.00%	0.63%	0.00%	0.08%
<b>Calls answered electronically</b>							
Percentage calls answered within 20 seconds	80%	100%	100%	100.00%	100%	97.90%	100%
Percentage calls answered within 40 seconds	95%	100%	100%	100.00%	100%	97.90%	100%
<b>Calls Answered by the operator</b>							
Percentage calls answered within 60 seconds	80%	84.11%	94.80%	79.21%	95.28%	90.29%	83.70%
Percentage calls answered within 90 seconds	95%	96.89%	96.89%	91.26%	96.65%	93.03%	96.36%
<b>Billing Complaints</b>							
Billing complaints per 100 bills issued	<0.1%	0.00%	0.45%	0.03%	0.04%	0.08%	0.01%
Percentage billing complaints resolved within 4 weeks	100%	NA	100%	100%	100%	100%	100%
Period of refunds/payments due to customers from the date of resolution of complaints	<4 weeks	NA	No Refunds due	74%	100%	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

\*\* 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-`1B`  
Customers Perception of Service for Cellular Mobile Telephone Service  
through Survey- Karnataka Service Area**

S. N.	Customer Perception of Services	Benchmark	Bharti Airtel	Vodafone	BSNL	Rel Comm	TATA	Spice
1	%age subscribers satisfied with the provision of service	>95%	83%	83%	79%	79%	78%	78%
2a	%age subscribers satisfied with the billing performance (postpaid)	>90%	75%	71%	74%	72%	71%	72%
2b	%age subscribers satisfied with the billing performance (prepaid)	>90%	79%	80%	78%	76%	78%	78%
3	%age subscribers satisfied with help services	>90%	71%	69%	69%	69%	71%	66%
4	%age subscribers satisfied with network performance, reliability and availability	>95%	78%	75%	75%	74%	73%	69%
5	%age subscribers satisfied with maintainability	>95%	77%	73%	73%	73%	72%	67%
6	Overall customer satisfaction	>95%	73%	70%	71%	70%	69%	67%
7	%age subscribers satisfied with offered supplementary services	>95%	68%	70%	72%	70%	69%	67%

**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- Karnataka Service Area**

S.N.	Sub Parameter	Bharti Airtel	Vodafone	BSNL	Rel Comm	TATA	Spice
1	Awareness of three stage grievance mechanism	58%	62%	58%	62%	53%	63%
2	For pre-paid customers, awareness about item-wise call charge details on request	31%	35%	37%	35%	37%	35%
3	If aware (for pre-paid customers), ever denied of item wise usage charge details for pre-paid connection	18%	17%	15%	15%	16%	21%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	43%	48%	49%	41%	53%	48%
5	Awareness of Call center for redressing grievances	55%	59%	58%	56%	43%	62%
6	Penetration of consumers made any complaints to the toll free number within last 6 months	9%	11%	8%	9%	12%	14%
7	Call center informing about the action taken on complaints	85%	89%	87%	84%	89%	89%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	21%	25%	36%	21%	47%	22%
9	percentage satisfied with complaint resolution by call centre	66%	64%	64%	61%	64%	60%
10	Awareness of Nodal officer for redressing grievances	9%	7%	5%	7%	9%	10%
11	Awareness of Appellate authority for redressing grievances	2%	1%	1%	3%	4%	1%

**Annex-`2A`**  
**Objective assessment of quality of Service-Service Provider's Performance in respect of Basic Service (Wire line) – Karnataka Service Area**

S.no	Parameters	B'mark	Bharti Airtel	BSNL*	RCOM	TATA teleservices*
1	<b>Provision of telephone after registration of demand</b>					
1.1	Connections completed within 7 days	100%	97%	90%	99%	100%
2	<b>Fault incidence/clearance statistics</b>					
3	Fault incidences(No. of faults/100 subscribers/month)	<3	5.5	8	1	1
3.1	Faults repaired within 24 hours	>90%	97%	66%	99%	95%
3.2	Faults repaired within three working days	100%	99%	78%	100%	100%
4	Mean time to Repair (MTTR)	<8 hours	5.40	10	<5	5.10
5	Call Completion Rate (CCR)	>55%	58%	64%	DNA	85%
6	<b>Metering and billing credibility</b>					
6.1	Billing complaints per 100 bills issued	<0.1%	0.04%	0.00%	0.00%	0.02%
6.2	%age of billing complaints resolved within 4 weeks	100%	100%	100%	100%	100%
7	<b>Customer care/helpline promptness</b>					
7.1	<u>Shift requests attended</u>					
	Shift requests attended within 3 days	95%	94%	74%	100%	100%
7.2	<u>Closure request attended</u>					
	Closure within 24 hours	95%	100%	94%	98%	100%
7.3	<u>Supplementary (additional) service requests attended</u>					
	Additional facility provided within 24 hours	95%	99%	70%	100%	99%
8	<b>Response time to customer for assistance</b>					
8.1	% age call answered through IVR in 20 seconds	80%	DNA	100%	100%	100%
	% age call answered through IVR in 40 seconds	95%	DNA	100%	100%	100%
8.2	% age calls answered by operator in 60 seconds	80%	94%	99.8%	99%	95%
	% age calls answered by operator in 90 seconds	95%	97%	99.9%	100%	97%
9	<b>Time taken for refund of deposits after closure</b>					
9.1	%age cases where refund received within 60 days	100%	96%	99%	100%	NA

(\*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 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– Karnataka Service Area**

S.N.	Circle - Karnataka	Benchmark	Bharti Airtel	BSNL	Rel Com	TATA
1	% satisfied with the provision of service	>95%	84%	87%	83%	85%
2a	% satisfied with the billing performance (Postpaid customers)	>90%	76%	77%	77%	75%
2b	% satisfied with the billing performance (Prepaid customers)	>90%	71%	72%	71%	71%
3	% satisfied with help services	>90%	69%	67%	69%	66%
4	% satisfied with network performance, reliability and availability	>95%	75%	77%	73%	74%
5	% satisfied with maintainability	>95%	59%	65%	62%	62%
6	% satisfied Overall customer satisfaction	>95%	73%	76%	72%	72%
7	Customer satisfaction with offered supplementary services % satisfied	>95%	72%	73%	67%	67%

**Annex-`2C`**

**Assessment of implementation and effectiveness of Telecom Consumer Protection and Redressal of Grievances Regulations in respect Basic Service (Wire line) through survey– Karnataka Service Area**

S. N.	Sub-parameter	Bharti Airtel	BSNL	Rel Com	TATA
1	Awareness of three stage grievance mechanism	63%	52%	52%	54%
2	For pre-paid customers, awareness about item-wise call charge details on request	26%	15%	40%	32%
3	If aware (for pre-paid customers), ever denied of item wise usage charge details for pre-paid connection	10%	29%	13%	15%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	27%	10%	26%	22%
5	Awareness of Call center for redressing grievances	66%	49%	44%	52%
6	Penetration of consumers made any complaints to the toll free number within last 6 months	7%	5%	5%	6%
7	Call center informing about the action taken on complaints	86%	70%	79%	84%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	48%	46%	35%	42%
9	% subscribers satisfied with the complain resolution by call center	56%	55%	60%	61%
10	Awareness of Nodal officer for redressing grievances	7%	8%	7%	6%
11	Awareness of Appellate authority for redressing grievances	4%	3%	5%	3%



