

TRAI Audit Wireless Report for Karnataka Circle

QE- JAN-MAR 2017

Audit Done by: Regional Office, Bangalore (TRAI)

Submitted to: TRAI HQ, New Delhi

Executive Summary-2G

The objective assessment of Quality of Service (QoS) carried out by Regional Office, Bangalore gives an insight into the overall performance of various operators in the Karnataka circle, with a parameter wise performance evaluation as compared to Benchmark.

1.1 PMR DATA – 3 MONTHS- CONSOLIDATED FOR 2G

Name of Service Provider	Network Availability		Connection Establishment (Accessibility)			Connection Maintenance (Retainability)		
	BTSs accumulated downtime (not available for service)	Worst affected BTSs due to downtime	CSSR	SDCCH/Paging channel congestion	TCH congestion	Call drop rate	% of Worst affected cells having more than 3% TCH	%age calls with good voice quality
Benchmark	≤ 2%	≤ 2%	≥ 95%	≤ 1%	≤ 2%	≤ 2%	≤ 3%	≥ 95%
Aircel	0.12%	0.16%	99.29%	0.05%	0.18%	0.81%	2.64%	97.45%
Airtel	0.08%	0.03%	98.88%	0.31%	0.28%	0.62%	1.32%	98.28%
BSNL	1.10%	1.82%	98.63%	0.21%	0.74%	1.20%	1.80%	99.82%
Idea	0.08%	0.17%	99.32%	0.35%	0.22%	0.27%	1.67%	97.03%
MTS	0.12%	0.00%	99.56%	NA	0.01%	0.57%	2.84%	99.90%
Reliance GSM	0.18%	1.00%	98.98%	0.03%	0.12%	0.00%	0.25%	98.90%
TATA CDMA	0.07%	0.17%	98.83%	NA	0.06%	0.56%	1.47%	99.16%
TATA GSM	0.06%	0.02%	98.68%	0.14%	0.13%	0.63%	2.07%	98.31%
Vodafone	0.16%	0.60%	99.80%	0.19%	0.19%	0.85%	2.70%	97.83%

NA: SDCCH/ Paging channel congestion not applicable for CDMA operators.

Following are the parameter wise observations for wireless operators for Karnataka circle:

BTs Accumulated Downtime: All meet the benchmark. Minimum BTS Accumulated downtime is recorded for TATA GSM at 0.06%.

Worst Affected BTs Due to Downtime: All meet the benchmark. Minimum worst affected BTs due to downtime is recorded for TATA GSM at 0.02%.

Call Set-up Success Rate (CSSR): All operators meet the benchmark for CSSR. The maximum CSSR is observed for MTS with 99.56%.

SDCCH/ Paging Chl. Congestion: All operators meet the benchmark on SDCCH / Paging Channel Congestion. RCOM GSM recorded the best SDCCH / Paging Channel Congestion at 0.03 %.

TCH Congestion: All operators meet the benchmark on TCH congestion. MTS CDMA performed the best at 0.01 %..

Call Drop Rate: All operators meet the benchmark. Minimum call drop rate is recorded by RCOM GSM at 0.00%.

Worst Affected Cells Having More than 3% TCH Drop: All operators meet the benchmark. Best performance is recorded for RCOM GSM at 0.25%.

Voice Quality: All operators meet the benchmark. Best performance is recorded by MTS at 99.90%.

1.2 PMR DATA – 3 MONTHS- CONSOLIDATED FOR 3G

Name of Service Provider	Network Availability		Connection Establishment (Accessibility)			Connection Maintenance (Retainability)		
	Node B's downtime (not available for service)	Worst affected Node B's due to downtime	CSSR	RRC congestion	Circuit Switched RAB Congestion	Call drop rate	% of Worst affected cells having more than 3% Circuit switched voice drop rate	%Circuit Switch Voice Quality
Benchmark	≤ 2%	≤ 2%	≥ 95%	≤ 1%	≤ 2%	≤ 2%	≤ 3%	≥ 95%
Aircel 3G	0.41%	0.56%	98.97%	0.30%	0.14%	0.31%	3.62%	97.89%
Airtel 3G	0.19%	0.06%	99.58%	0.00%	0.01%	0.34%	1.41%	99.70%
BSNL 3G	0.85%	1.53%	99.08%	0.70%	1.35%	1.36%	1.45%	99.82%
TATA 3G	0.06%	0.01%	99.38%	0.10%	0.02%	0.10%	0.94%	99.11%
Vodafone 3G	0.18%	0.87%	99.88%	0.02%	0.01%	0.31%	0.62%	98.76%

Node B's downtime: All operators meet the benchmark. Minimum Node B's downtime is recorded for Tata at 0.06%.

Worst affected Node B's due to downtime: All operators meet the benchmark. Minimum worst affected Node B's due to downtime is recorded for TATA at 0.01%.

Call Set-up Success Rate (CSSR): All operators meet the benchmark. The maximum CSSR is observed for Airtel with 99.58%.

RRC Congestion: All operators meet the benchmark. Minimum RRC congestion is recorded for Airtel at 0.00%.

Circuit Switched RAB Congestion: All operators meet the benchmark. Minimum Circuit Switched RAB congestion is recorded for Vodafone & Airtel at 0.01%.

Call Drop Rate: All operators meet the benchmark. Minimum call drop rate is recorded for Tata at 0.10%.

Worst affected cells having more than 3% Circuit switched voice drop rate: All operators except Aircel(at 3.62 %) meet the benchmark. Best performance is recorded for Vodafone at 0.62%.

Circuit Switch Voice Quality: All operators meet the benchmark. Best performance is recorded for BSNL at 99.82%.

1.3 COMPLAINT RESOLUTION AND CALL CENTRE ACCESSIBILITY AS PER PMR AND LIVE CALLING DATA - CONSOLIDATED

Name of Service Provider	Meetering and billing		Response time to customers for Assistance		Service Requests
	Percentage complaints resolved within 4 weeks	% of complaints resolved within 6 weeks	Accessibility of Call Centre/Customer Care	% of calls getting connected and answered by operators (Voice to Voice)	Complaints/re requests attended to satisfaction
Benchmark	≥ 98%	100.00%	≥ 95%	≥ 95%	
Aircel	100.00%	100.00%	91.05%	97.21%	60.00%
Airtel	100.00%	100.00%	100.00%	91.95%	67.50%
BSNL	100.00%	100.00%	99.99%	96.52%	59.09%
Idea	100.00%	100.00%	99.89%	99.02%	80.00%
MTS	100.00%	100.00%	96.82%	96.17%	46.81%
Reliance Jio	NA	NA	89.25%	89.29%	NA
Reliance GSM	100.00%	100.00%	99.39%	96.64%	20.00%
TATA CDMA	NA	NA	NA	NA	NA
TATA GSM	100.00%	100.00%	100.00%	98.17%	50.00%
Vodafone	100.00%	100.00%	100.00%	88.06%	90.00%

NA: Not applicable

Resolution of billing complaints: As per PMR, all operators meet the benchmark of resolving 100% complaints within 4 & 6 weeks.

Accessibility of Call Centre/Customer Care-IVR: For the IVR aspect, all operators except Aircel at 91.05 % and Reliance Jio at 89.25 % meet the Benchmark. Airtel, Tata GSM & Vodafone performed best at 100%.

Customer Care / Helpline Assessment (voice to voice): All operators except Vodafone at 88.06 % meet the benchmark. Idea performed best at 99.02 %.

Live calling results for Accessibility of Level 1 Services

Level 1 Number	Type of Service	Aircel	Airtel	BSNL	Idea	MTS	Reliance	TATA CDMA	TATA GSM	Vodafone	RJIO
100	Police	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
101	Fire	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
102	Ambulance	Y	Y	Y	Y	Y	Y	N	N	Y	Y
104	Health Information Helpline	Y	Y	Y	Y	N	Y	Y	Y	Y	Y
108	Emergency and Disaster Management Helpline	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

138	All India Helpline for Passangers	Y	Y	Y	Y	N	Y	N	N	Y	Y
149	Public Road Transport Utility Service	N	N	Y	N	N	N	N	N	N	N
181	Chief Minister Helpline	N	Y	Y	Y	N	Y	Y	N	N	N
182	Indian Railway Security Helpline	Y	Y	Y	Y	N	Y	N	N	Y	Y
1033	Road Accident Management Service	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
1037	PG Cell DoT as 'Telecom Consumer Grievance Redressal Helpline'	N	N	N	N	N	N	N	N	N	N
1056	Emergency Medical Services	N	N	N	N	N	N	N	N	N	N
106X	State of the Art Hospitals	N	N	N	N	N	N	N	N	N	N
1063	Public Grievance Cell DoT Hq	N	N	N	N	N	N	N	N	N	N
1064	Anti Corruption Helpline	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1070	Relief Commission for Natural Calamities	Y	N	Y	N	T	Y	Y	Y	Y	Y
1071	Air Accident Helpline	Y	N	Y	N	Y	Y	Y	N	Y	Y
1072	Rail Accident Helpline	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
1073	Road Accident Helpline	N	N	Y	B	N	N	N	N	N	N
1077	Control Room for District Collector	Y	Y	Y	Y	Y	Y	N	N	Y	Y
1090	Call Alart (Crime Branch)	Y	N	Y	Y	Y	N	Y	Y	Y	Y
1091	Women Helpline	N	N	Y	N	Y	N	N	Y	Y	Y
1097	National AIDS Helpline to NACO	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
1099	Central Accident and Trauma Services (CATS)	N	N	N	N	N	N	N	N	Y	Y
10580	Educational & Vocational Guidance and Counselling	N	N	N	N	N	N	N	N	N	N
10589	Mother and Child Tracking (MCTH)	N	N	N	N	N	N	N	N	N	N
10740	Central Pollution Control Board	N	N	Y	N	N	N	N	N	N	N
10741	Pollution Control Board	N	N	Y	N	N	N	N	N	N	N
1511	Police Related Service for all Metro Railway Project	N	N	N	N	N	N	N	N	N	N
1512	Prevention of Crime in Railway	N	N	N	Y	Y	Y	Y	Y	N	N
1514	National Career Service	Y	N	Y	Y	Y	N	Y	Y	N	N
15100	Free Legal Service Helpline	Y	N	Y	N	Y	Y	N	Y	N	N
155304	Municipal Corporations	N	N	Y	Y	N	N	N	N	N	N
155214	Labour Helpline	N	N	N	N	N	N	N	N	Y	Y
1903	Sashastra Seema Bal (SSB)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1909	National Do Not Call Registry	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1912	Complaint of Electricity	Y	Y	Y	Y	Y	Y	Y	Y	N	N
1916	Drinking Water Supply	Y	Y	N	N	Y	Y	Y	N	Y	Y
1950	Election Commission of India	Y	Y	Y	Y	Y	Y	Y	Y	N	N

1.4 BILLING AND CUSTOMER CARE - CONSOLIDATED

Name of Service Provider	Metering and billing credibility		Billing Complaints		Percentage of cases where credit/waiver received within one week
	Post-paid customers	Prepaid customers	Percentage complaints resolved within 4 weeks	% of complaints resolved within 6 weeks	
Benchmark	≤ 0.1%	≤ 0.1%	≥ 98%	100.00%	100.00%
Aircel	0.00%	0.18%	100.00%	100.00%	100.00%
Airtel	0.09%	0.09%	100.00%	100.00%	100.00%
BSNL	0.06%	0.01%	100.00%	100.00%	100.00%
Idea	0.09%	0.03%	100.00%	100.00%	100.00%
MTS	0.01%	0.00%	100.00%	100.00%	100.00%
Reliance GSM	0.06%	0.03%	100.00%	100.00%	100.00%
TATA CDMA	0.00%	0.00%	DNS	DNS	100.00%
TATA GSM	0.00%	0.00%	100.00%	100.00%	100.00%
Vodafone	0.07%	0.06%	100.00%	100.00%	100.00%

* Reliance Jio not submitted the data for this parameter. DNS- data not supplied

Metering and Billing Credibility – Post-paid Subscribers: For the billing disputes of Post-paid subscribers, it is observed that Aircel, Tata CDMA & Tata GSM have the best performance with 0.00% billing disputes.

Metering and Billing Credibility – Prepaid Subscribers: For the prepaid customers, all operators meet the benchmark of charging disputes except Aircel at 0.18 %. MTS, TATA CDMA and TATA GSM performed the best with 0.00% disputes.

Resolution of billing complaints- All operators meet the Benchmark of resolution of 98 % billing complaints within 4 weeks and resolving 100% complaints within 6 weeks.

Response Time to customer for assistance - % of cases in which advance waiver is received within one week: All operators meet the Benchmark of providing credit or waiver within one week in case of complaints received.

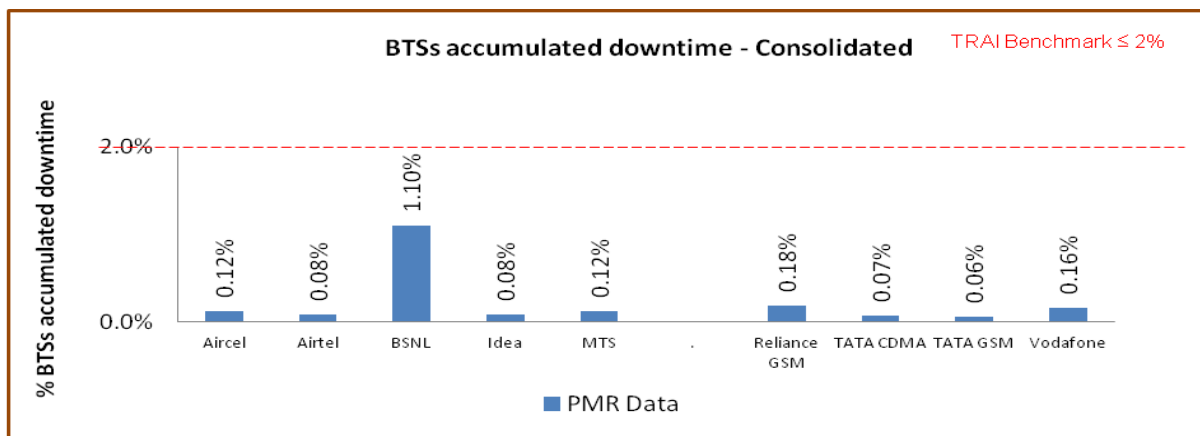
1.5 INTER OPERATOR CALL ASSESSMENT – CONSOLIDATED

Inter operator call Assessment To↓ From→	Aircel	Airtel	BSNL	Idea	MTS	Reliance Jio	Reliance GSM	TATA CDMA	TATA GSM	Vodafone
Aircel	NA	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00%	100.00%	100.00%	90.00%
Airtel	100.00 %	NA	100.00 %	100.00 %	100.00 %	100.00 %	100.00%	100.00%	100.00%	100.00%

BSNL	100.00 %	100.00 %	NA	100.00 %	100.00 %	100.00 %	100.00%	100.00%	100.00%	100.00%
Idea	100.00 %	100.00 %	100.00 %	NA	100.00 %	90.00%	90.00%	100.00%	100.00%	100.00%
MTS	100.00 %	70.00%	100.00 %	100.00 %	NA	80.00%	80.00%	100.00%	100.00%	100.00%
Reliance Jio	90.00%	100.00 %	100.00 %	100.00 %	100.00 %	na	100.00%	100.00%	100.00%	90.00%
Reliance GSM	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	NA	100.00%	100.00%	100.00%
TATA CDMA	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00%	NA	100.00%	100.00%
TATA GSM	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	60.00%	100.00%	100.00%	NA	100.00%
Vodafone	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	90.00%	100.00%	100.00%	100.00%	NA

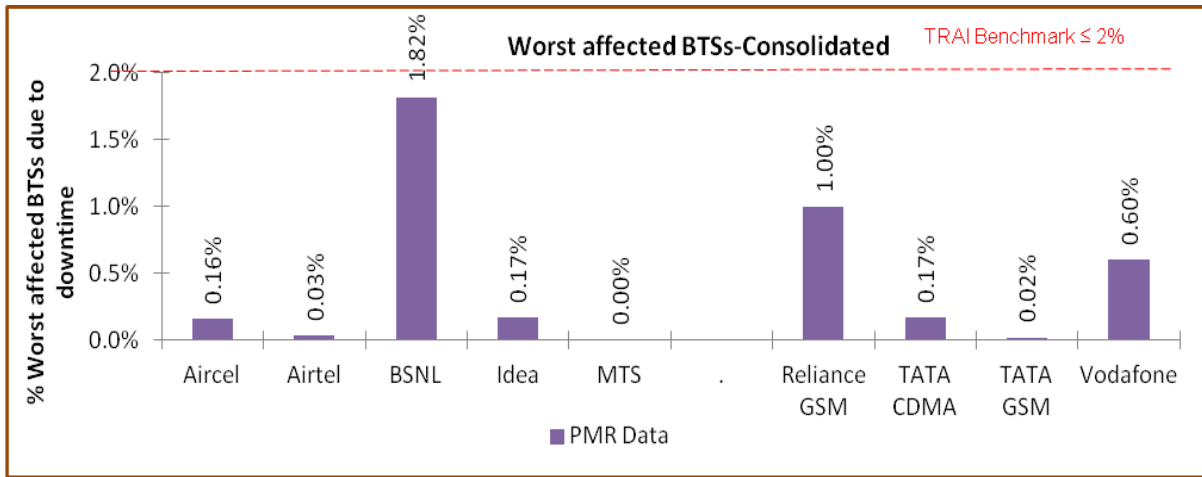
In the inter-operator call assessment, all operators performed satisfactory except few operators whose performance is highlighted in the table.

2 FINDINGS – 2G CONSOLIDATED



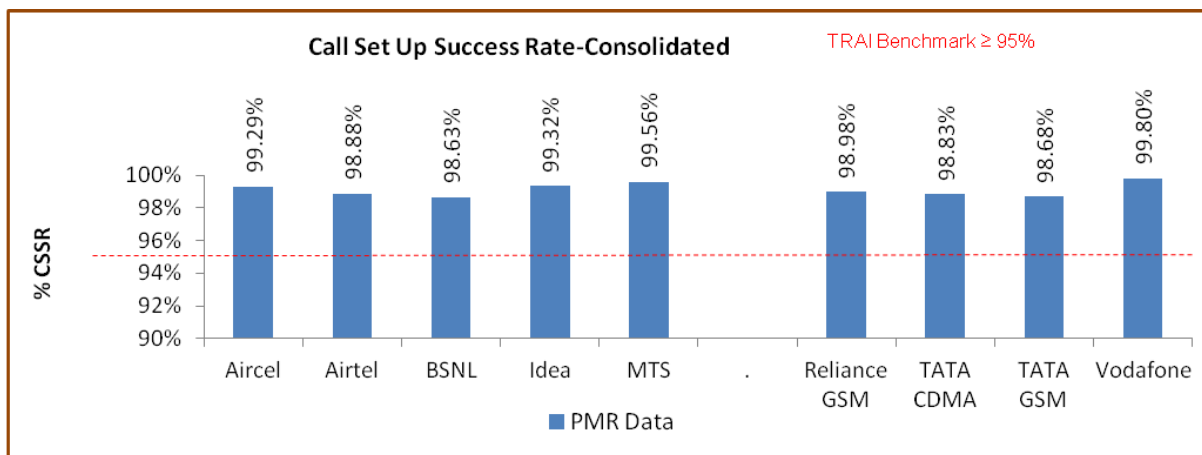
Data Source: Data provided by the operators

All operators meet the benchmark for BTS accumulated downtime as per PMR data.



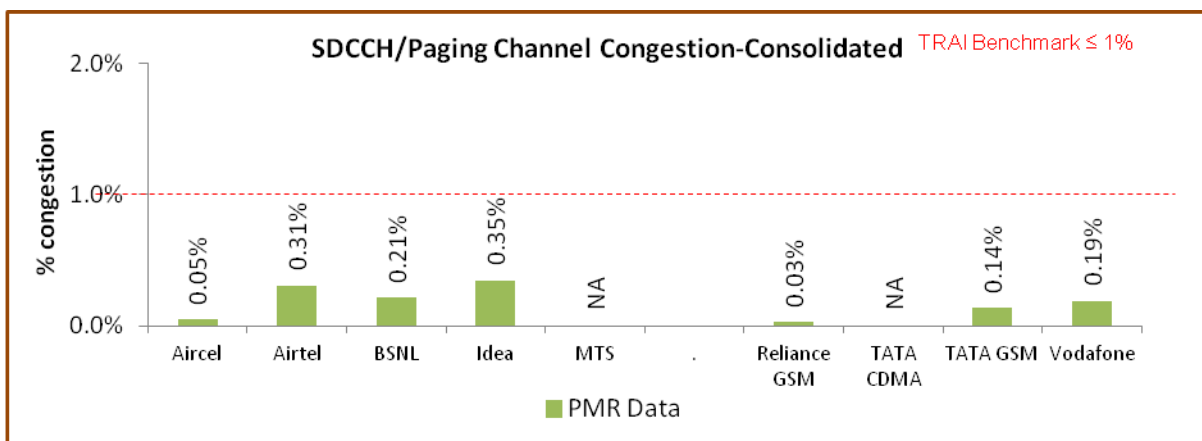
Data Source: Data provided by the operators

All operators meet the benchmark for worst affected BTSs due to downtime as per PMR data.



Data Source: Data provided by the operators

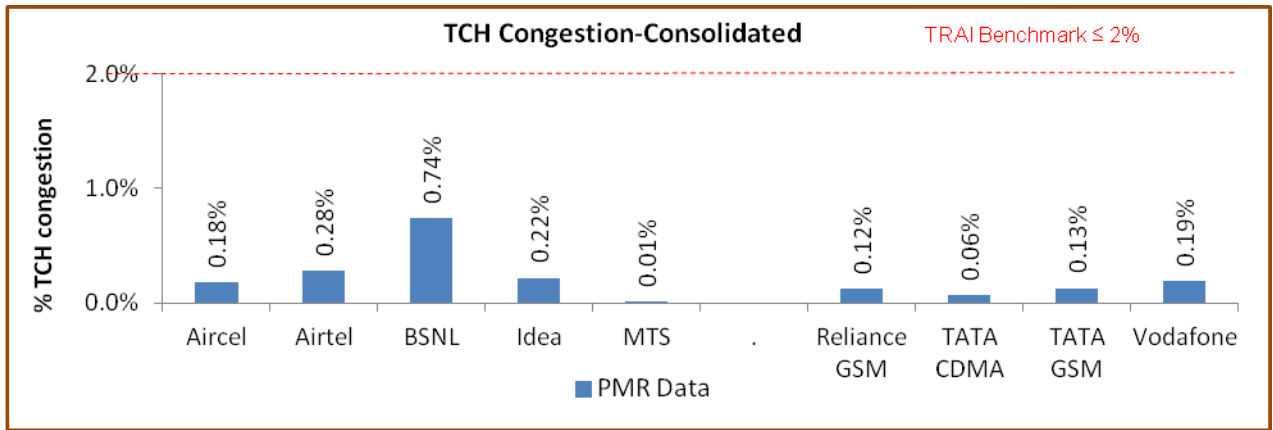
All operators meet the Benchmark as per PMR data



Data Source: Data provided by the operators

All operators meet the benchmark as per PMR Data.

NA: SDCCH/ Paging channel congestion not applicable for CDMA operators.



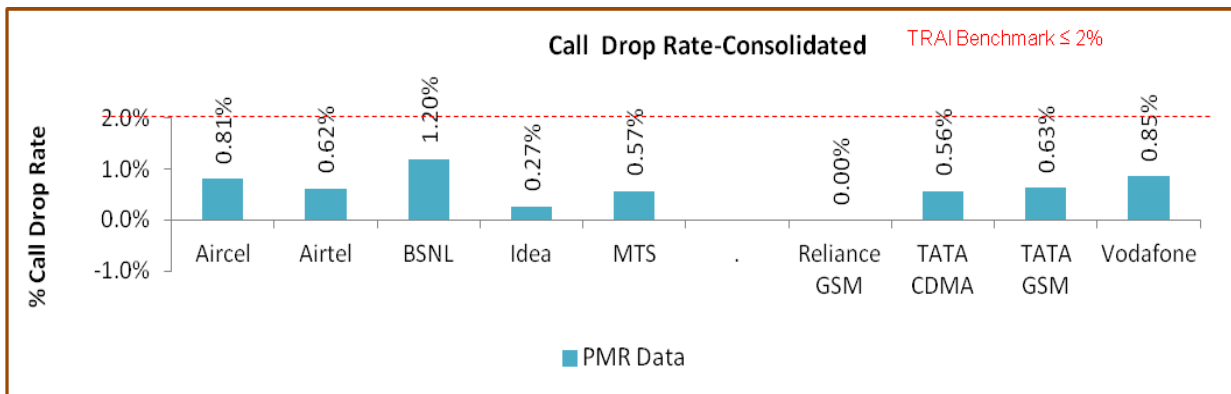
Data Source: Data provided by the operators. All operators meet the benchmark as per PMR report.

POI CONGESTION- CONSOLIDATED

POI congestion	Benchmark	Aircel	Airtel	BSNL	Idea	MTS	Reliance GSM	TATA CDMA	TATA GSM	Vodafone
	≤ 0.5%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

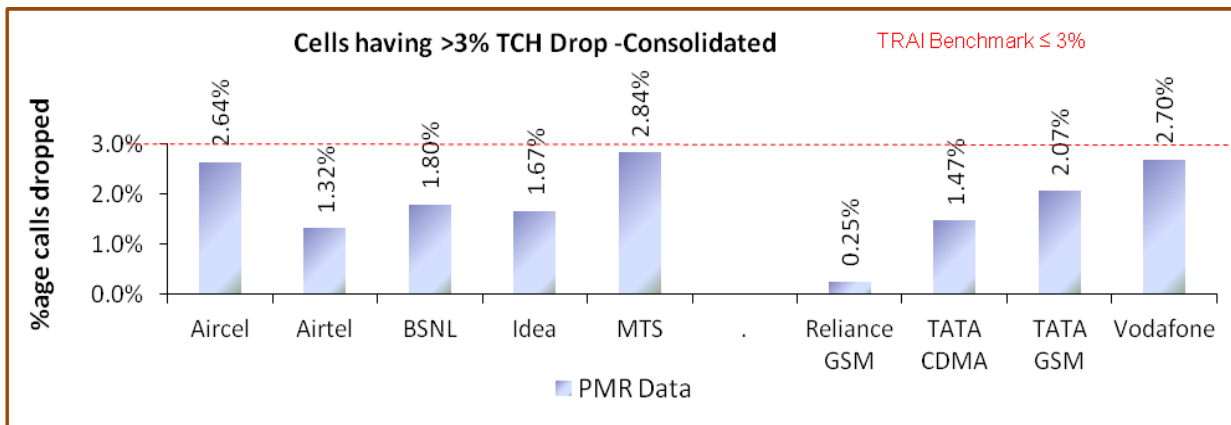
Data Source: Data provided by the operators

All operators meet the benchmark of POI Congestion as per PMR Data.



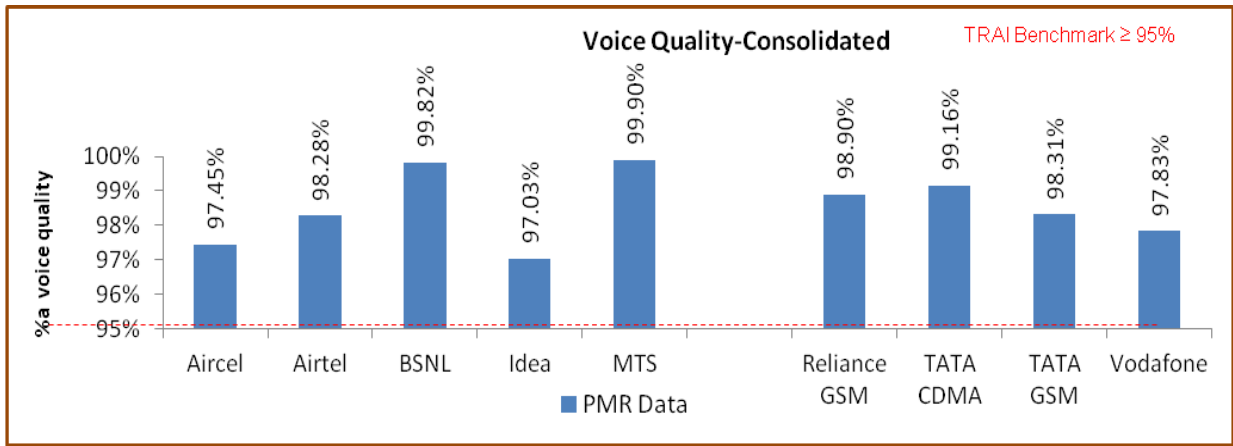
Data Source: Data provided by the operators

All operators meet the benchmark for call drop rate as per PMR data.



Data Source: Data provided by the operators.

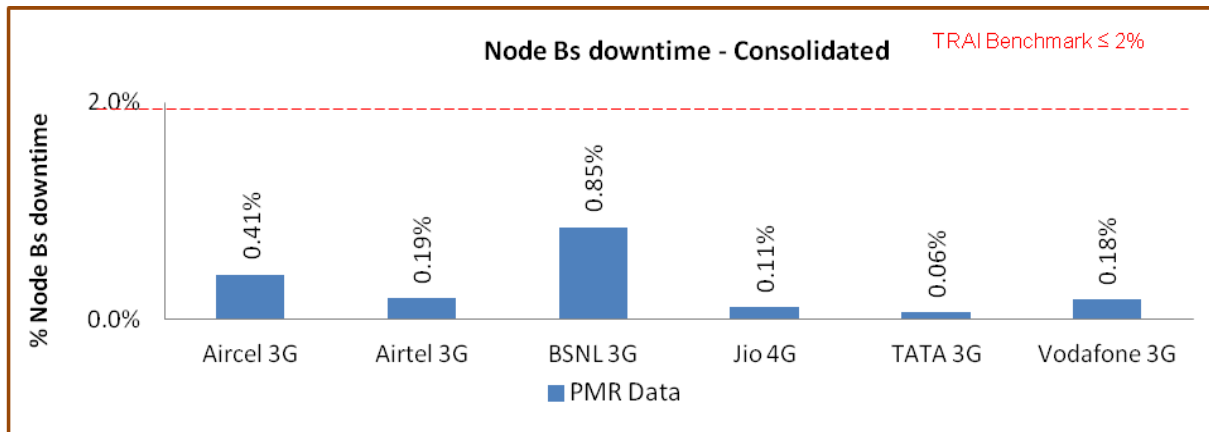
All operators meet the benchmark for cells having >3 % TCH Drop as per PMR data.



Data Source: Data provided by the operators

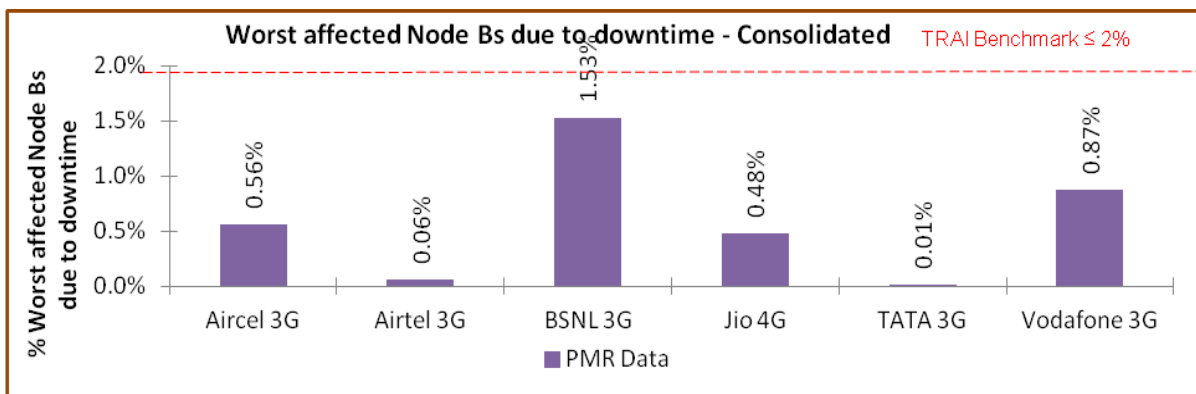
All operators meet the benchmark for Voice quality as per PMR data.

3 FINDINGS- 3G CONSOLIDATED



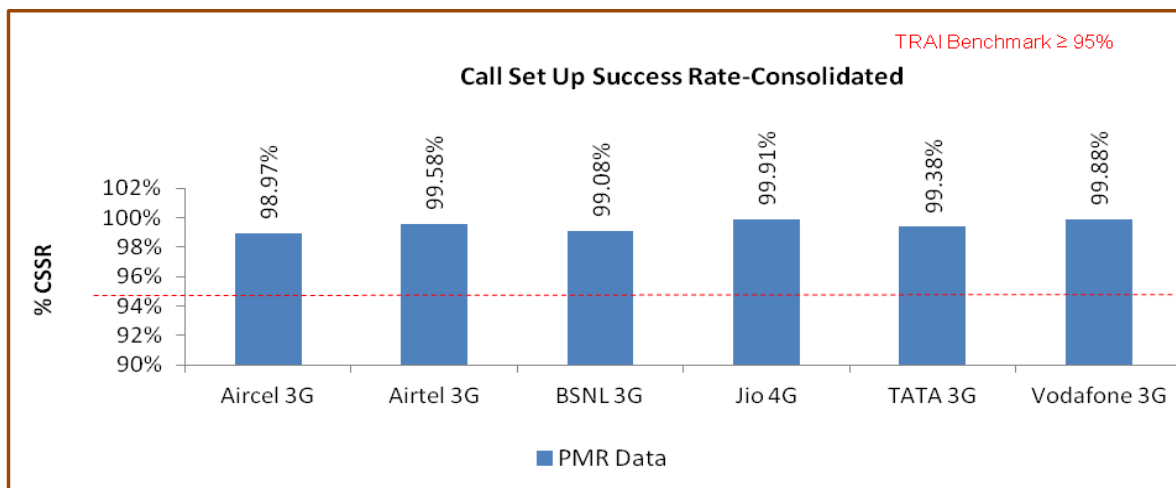
Data Source: Data provided by the operators.

All operators meet the benchmark for Node B's downtime as per PMR data.

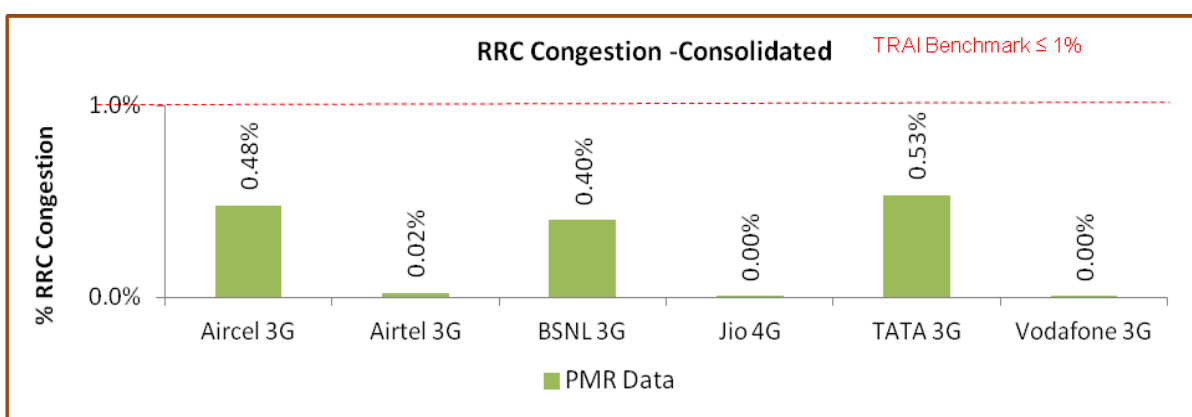


Data Source: Data provided by the operators.

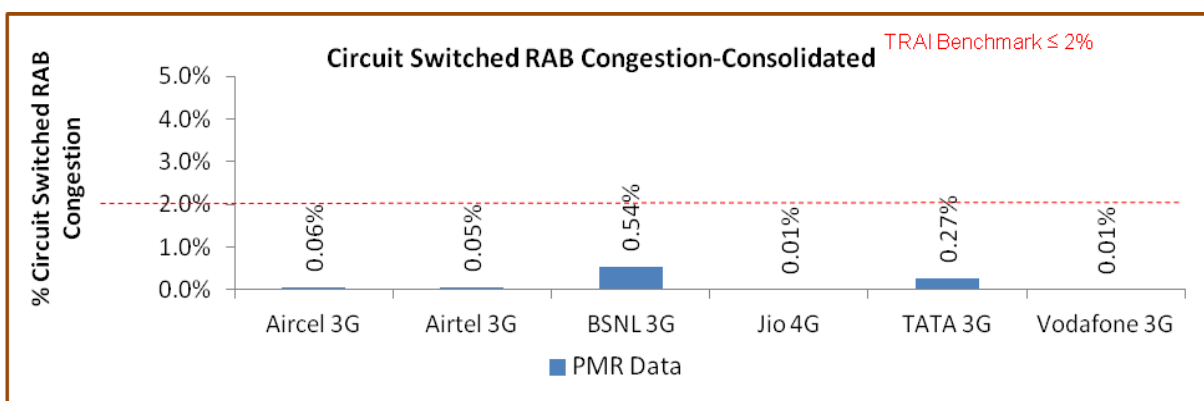
All operators meet the benchmark as per PMR data.



Data Source: Data provided by the operators. All operators meet the Benchmark as per PMR data.



Data Source: Data provided by the operators. All operators meet the benchmark as per PMR data.



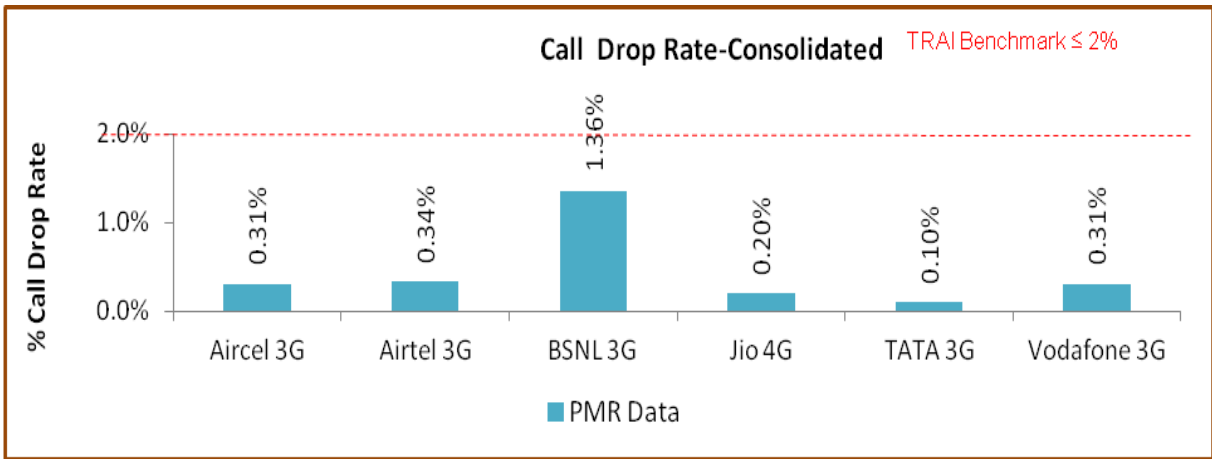
Data Source: Data provided by the operators

All operators meet the benchmark as per PMR data.

POI CONGESTION- CONSOLIDATED

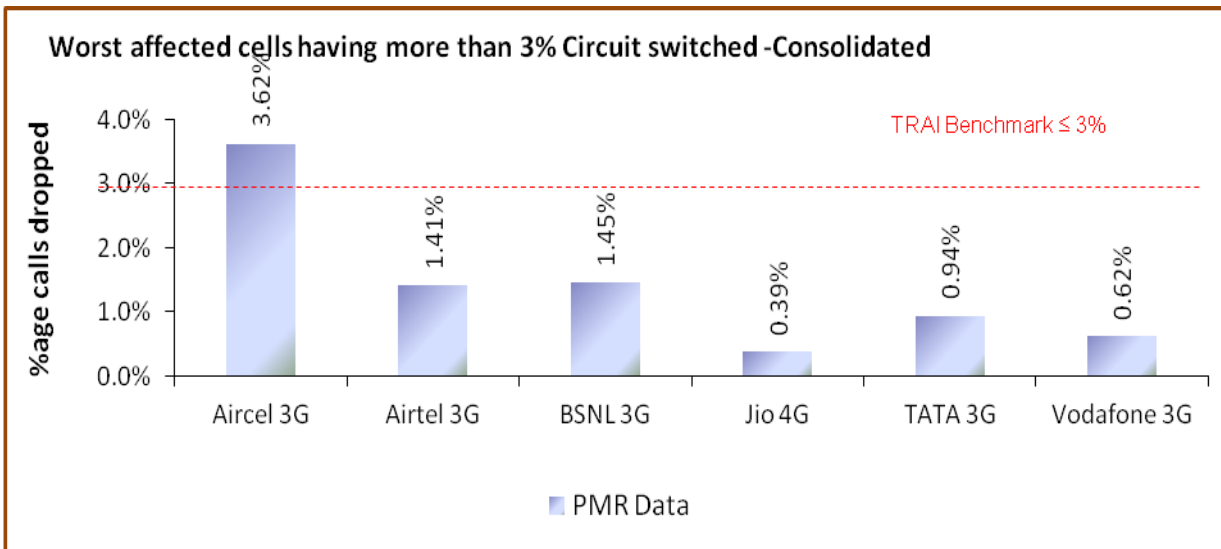
POI congestion	Benchmark	Aircel	Airtel	BSNL	Idea	MTS	Reliance GSM	TATA CDMA	TATA GSM	Vodafone
	\leq 0.5%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

All operators meet the benchmark as per PMR data.



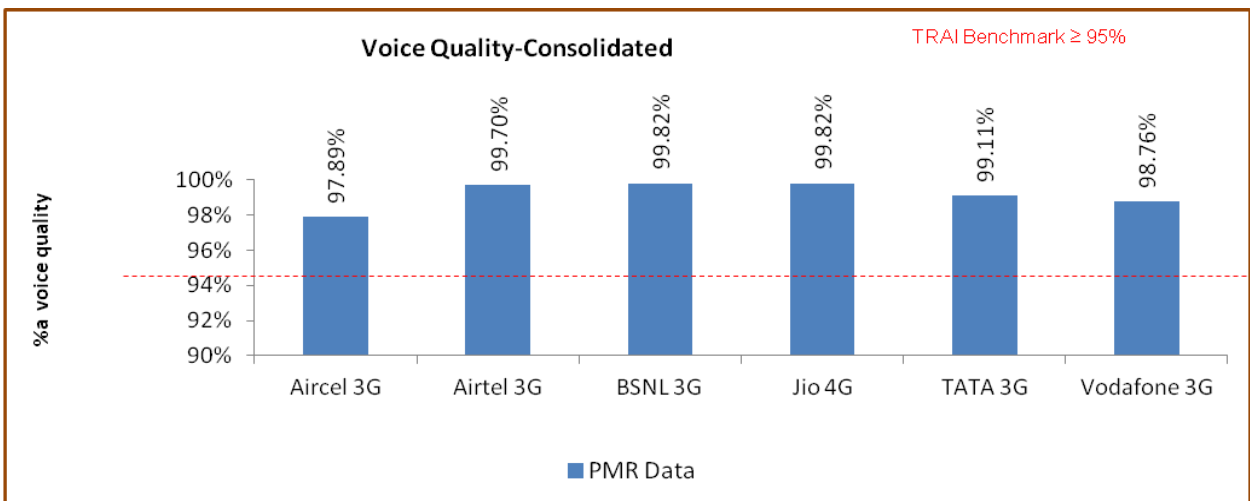
Data Source: Data provided by the operators

All operators meet the benchmark for call drop rate as per PMR data.



Data Source: Data provided by the operators

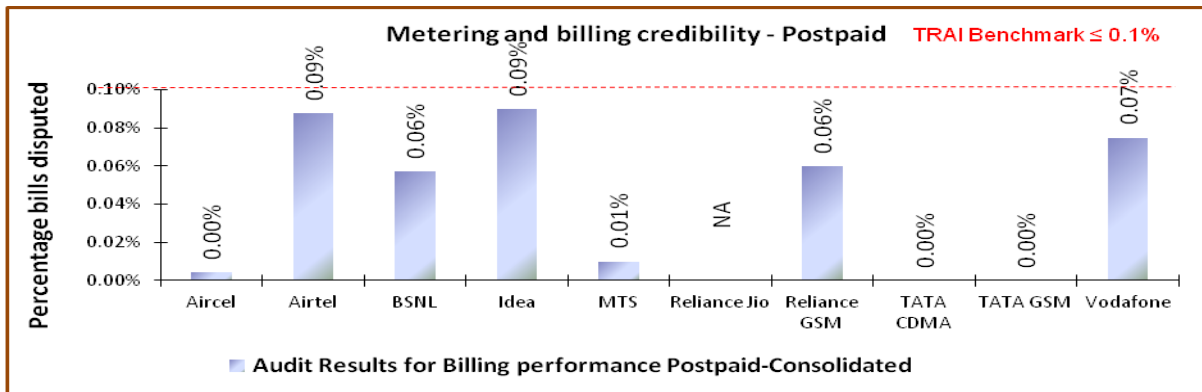
All operators meet the benchmark as per PMR data



Data Source: Data provided by the operators

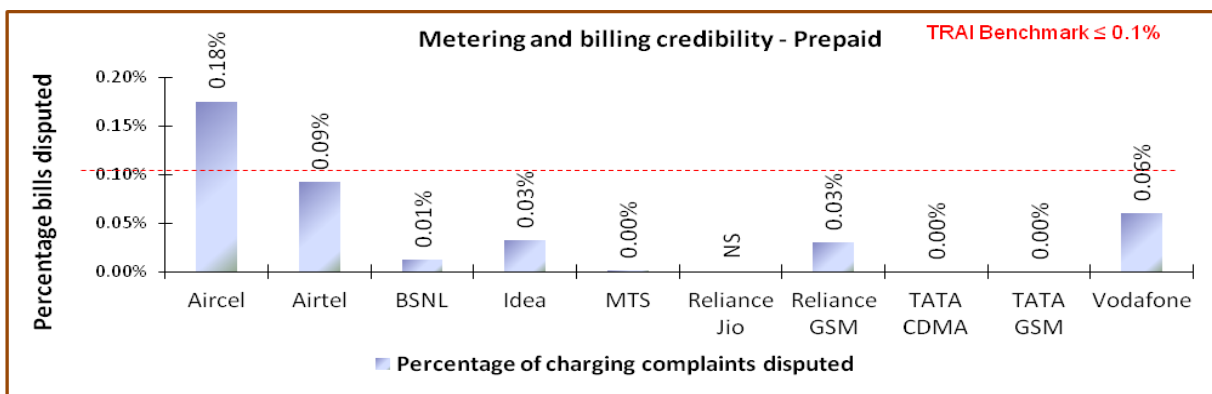
All operators meet the benchmark for circuit switch Voice quality as per PMR data.

4 FINDINGS –MEETERING AND BILLING CREDIBILITY (POSTPAID)



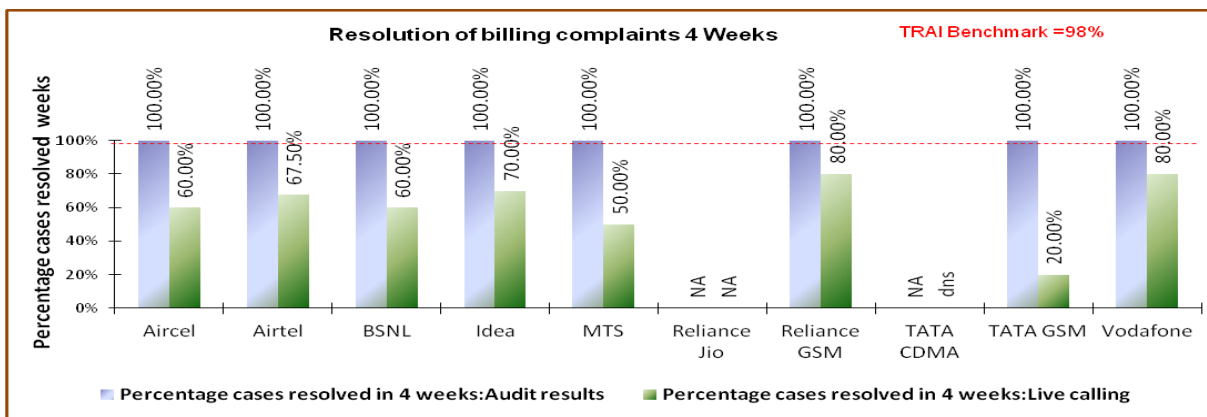
Data Source: Data provided by the operators. All operators meet the benchmark for metering and billing credibility of postpaid subscribers.

4.1 FINDINGS - MEETERING AND BILLING CREDIBILITY (PREPAID)



Data Source: Data provided by the operators. All operators meet the benchmark except Aircel at 0.18% for metering and billing credibility of prepaid subscribers as per PMR data.

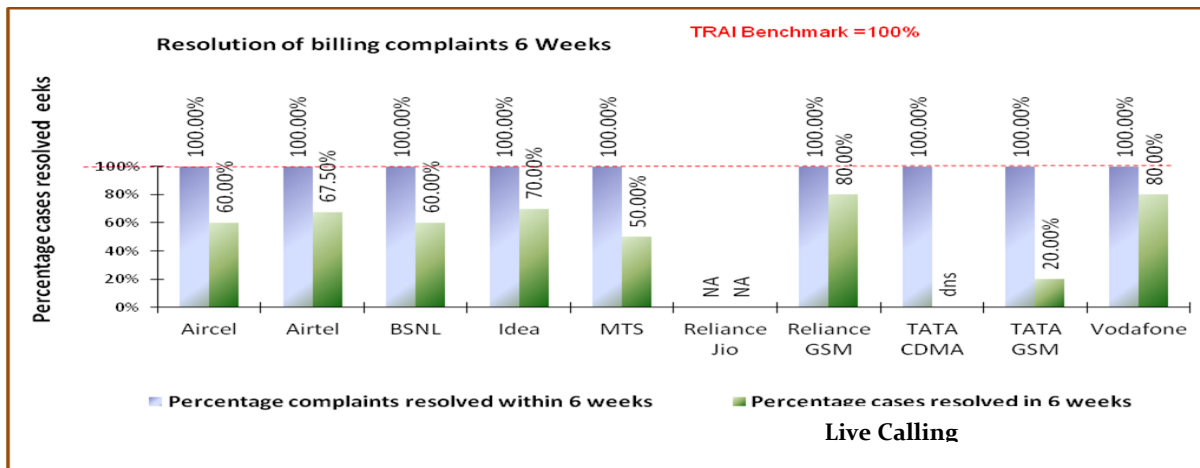
4.2 FINDINGS- RESOLUTION OF COMPLAINTS WITHIN 4 WEEKS



Data Source: Data provided by the operators

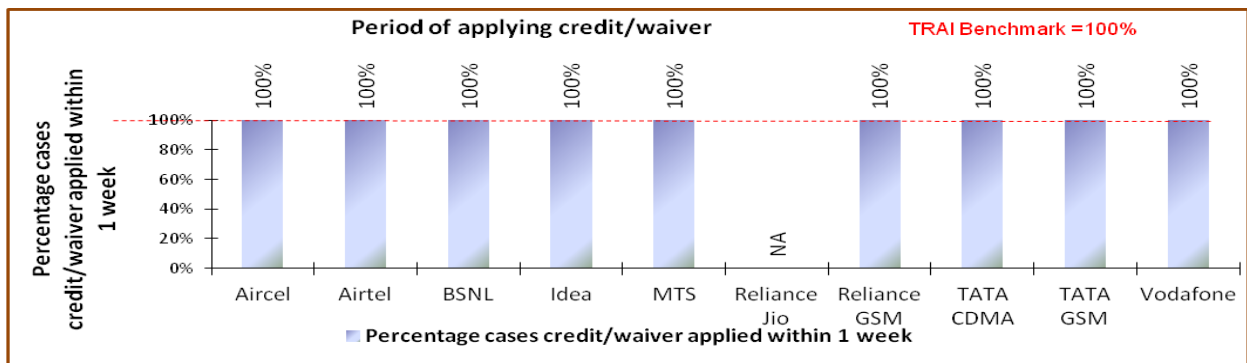
All operators meet the benchmark for resolution of billing complaints within 4 weeks as per PMR data. However, all operators failed to meet the benchmark for resolution of billing complaints within 4 weeks as noticed during the calls made to consumers.

4.3 FINDINGS- RESOLUTION OF COMPLAINTS WITHIN 6 WEEKS



Data Source: Data provided by the operators. All operators meet the benchmark for resolution of billing complaints within 6 weeks as per PMR data. However all failed to meet the benchmark for resolution of billing complaints within 6 weeks as noticed during the calls made to consumers.

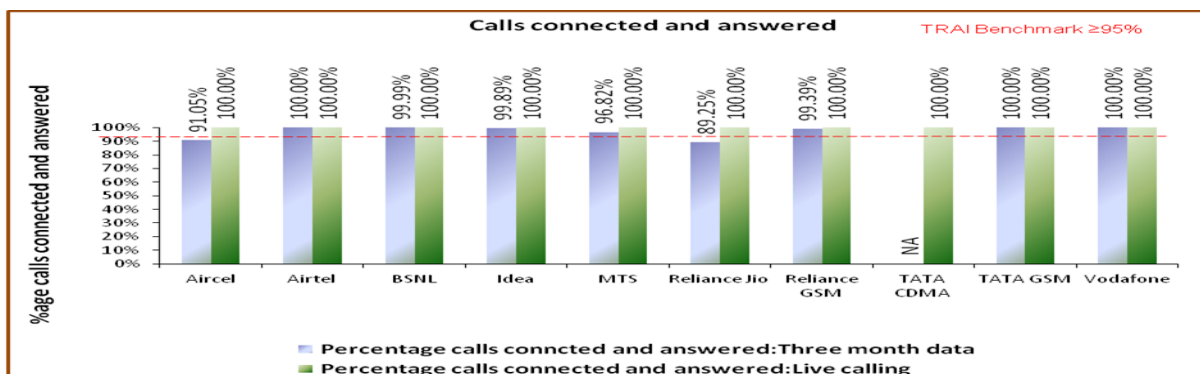
4.4 FINDINGS- PERIOD OF APPLYING CREDIT WAIVER



Data Source: Data provided by the operators. All operators meet the benchmark for this parameter as per PMR data.

5 CALL CENTRE PERFORMANCE-IVR

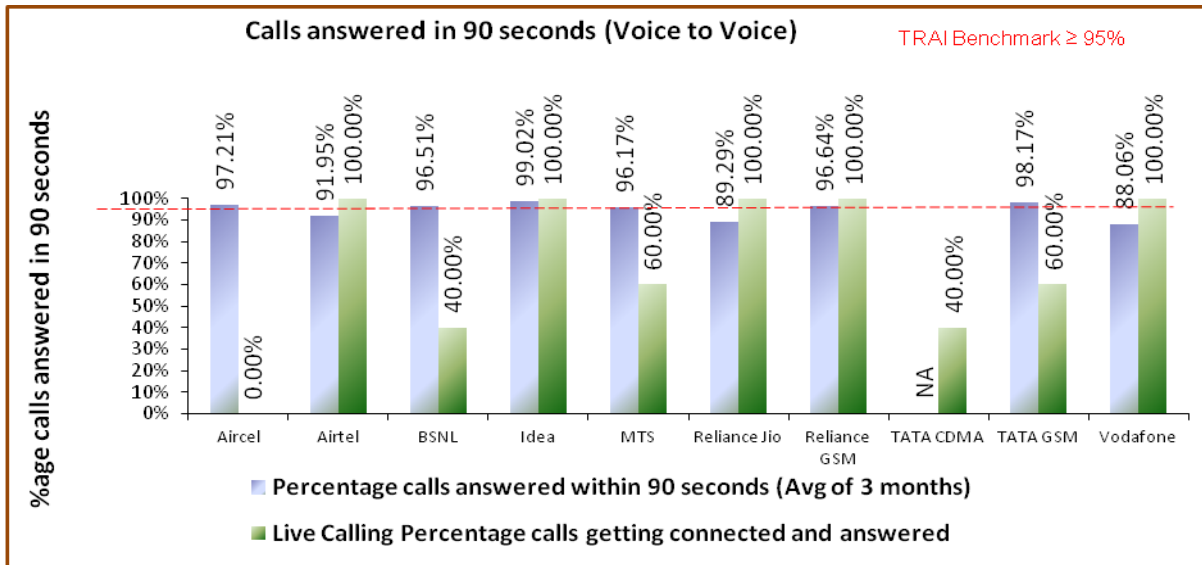
FINDINGS



Data Source: Data provided by the operators. Aircel, Reliance Jio failed to meet the benchmark as per PMR data. However, as per live calling, all operators meet the benchmark.

6 CALL CENTRE PERFORMANCE-VOICE TO VOICE

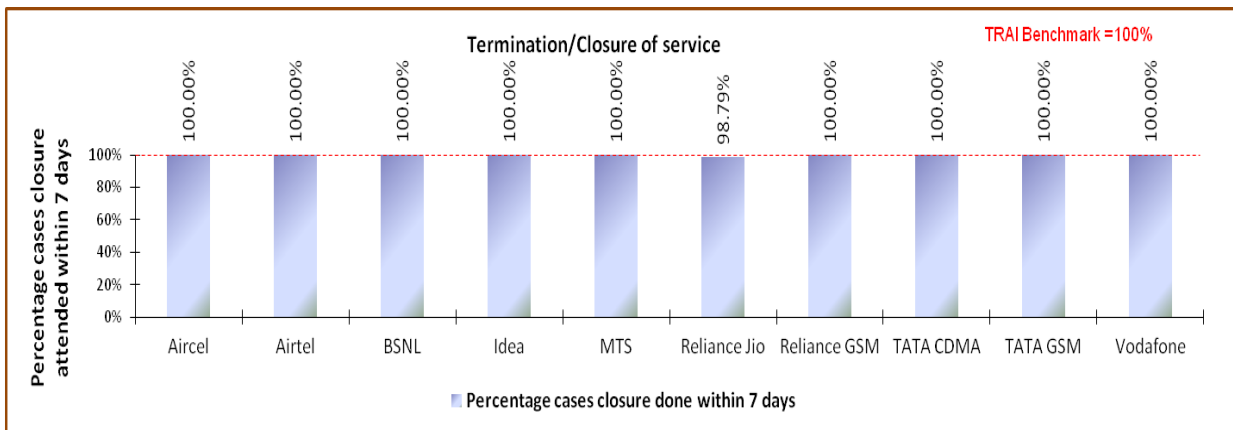
FINDINGS



Data source: data provided by the operators. Airtel, reliance jio and vodafone failed to meet the benchmark as per audit. However, as per live calling, the performance of Aircel, Bsnl, Mts and Tata GSM is inferior to the PMR data.

7 TERMINATION/CLOSURE OF SERVICE

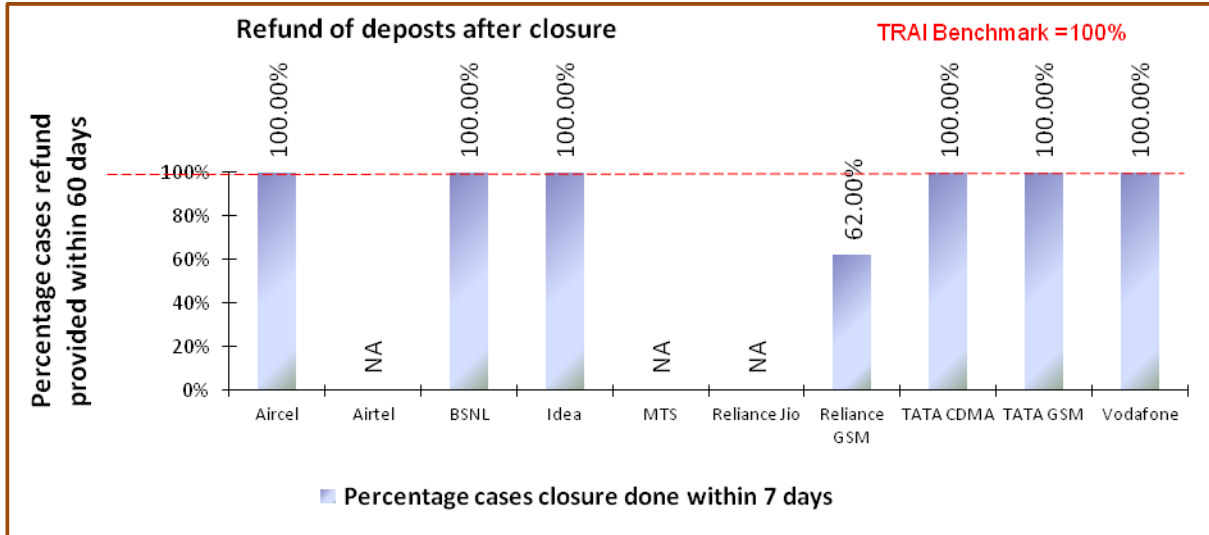
FINDINGS



Data Source: Customer Service Center of the operators. All operators meet the Benchmark for the parameter as per PMR data..

8 REFUND OF DEPOSITS AFTER CLOSURE

FINDINGS



Data Source: Data provided by the operators All operators meet the Benchmark for the parameter as per PMR data.