

CMO's (2G/3G/4G)QoS SURVEY RESULTS - 2015

Overall Results

a. 2G KPIs

Company	Voice KPIs							SMS KPIs	
	Network Downtime (Threshold: < 1%)	Grade of Service (Threshold: ≤ 2%)	Service Accessibility (Threshold: > 97% for 3Years)	Call Connection Time (Threshold: ≤ 6.5 Sec)	Call Completion Ratio (Threshold: > 98%)	End to End Speech Quality (Threshold: MOS > 3)	Inter System Handover of CS Voice (Threshold: ≥ 94% for 3 Year)	Success Rate (Threshold: > 99%)	End to End Delivery Time (Threshold: ≤ 12 Sec)
Mobilink	0.23%	0.77%	99.34%	5.04 Sec	98.95%	3.51	95.63%	100%	9.25 Sec
Ufone	0.87%	1.06%	97.96%	6.16 Sec	98.77%	3.62	100%	100%	5.48 Sec
Telenor	0.45%	0.55%	99.56%	5.24 Sec	98.95%	3.78	87.50%	100%	5 Sec
Warid	0.53%	1.06%	98.72%	6.58 Sec	99.54%	3.61	100%	100%	3.1 Sec
ZonG	0.26%	0.84%	99.28%	5.81 Sec	99.33%	3.50	66.67%	100%	4.28 Sec

b. 3G KPIs

City	User Data Throughput (Threshold: 3G > 256 kbps)		Signal Strength Received Signal Code Power - 3G (Threshold: Minimum -100dBm)
	Data Throughput -HTTP Download (Threshold: 3G ≥ 256 kbps)	Data Throughput -FTP Download (Threshold: 3G ≥ 256 kbps)	
Mobilink	4044.57 kbps	3174.15 kbps	-72.89 dBm
Ufone	1271.33 kbps	1052.35 kbps	-72.81 dBm
Telenor	2226.53 kbps	1000.90 kbps	-74.41 dBm
ZonG	3664.5 kbps	2932.25 kbps	-77.32 dBm

CMO's (2G/3G/4G)QoS SURVEY RESULTS - 2015

c. 4G KPIs

City	User Data Throughput (Threshold: 4G > 2Mbps)		Signal Strength Received Signal Receive Power – 4G (Threshold: Minimum-100dBm)
	Data Throughput -HTTP Download	Data Throughput -FTP Download	
Warid	5.95 Mbps	2.9 Mbps	-80.35 dBm
ZonG	9.4 Mbps	6.1 Mbps	-85.69 dBm

CMO's (2G/3G/4G)QoS SURVEY RESULTS - 2015

City Wise Results - PMCL (Mobilink)

a. 2G KPIs

City	Voice KPIs							SMS KPIs	
	Network Downtime (Threshold: < 1%)	Grade of Service (Threshold: ≤ 2%)	Service Accessibility (Threshold: > 97% for 3Years)	Call Connection Time (Threshold: ≤ 6.5 Sec)	Call Completion Ratio (Threshold: > 98%)	End to End Speech Quality (Threshold: MOS > 3)	Inter System Handover of CS Voice (Threshold: ≥ 94% for 3 Year)	Success Rate (Threshold: > 99%)	End to End Delivery Time (Threshold: ≤ 12 Sec)
Lahore	0.65%	0.99%	99.34%	5.4 Sec	99.01%	3.6	100%	-	-
ISB/RWP	0.01%	0.33%	99.67%	4.84 Sec	98.34%	3.47	-	100%	14.1 Sec
Peshawar	0.03%	1%	99%	4.87 Sec	99.5%	3.46	91.26%	100%	4.39 Sec
Overall	0.23%	0.77%	99.34%	5.04 Sec	98.95%	3.51	95.63%	100%	9.25 Sec

b. 3G KPIs

City	User Data Throughput (Threshold: 3G > 256 kbps)		Signal Strength Received Signal Code Power – 3G (Threshold: Minimum - 100dBm)
	Data Throughput -HTTP Download (Threshold: 3G ≥ 256 kbps)	Data Throughput -FTP Download (Threshold: 3G ≥ 256 kbps)	
Lahore	6100.7 kbps	5197.9 kbps	-72.617 dBm
ISB/RWP	3391.4 kbps	-	-73.4 dBm
Peshawar	2641.6 kbps	1150.4 kbps	-72.66 dBm
Overall	4044.57 kbps	3174.15 kbps	-72.89 dBm

CMO's (2G/3G/4G)QoS SURVEY RESULTS - 2015

City Wise Results - PTML (Ufone)

a. 2G KPIs

City	Voice KPIs							SMS KPIs	
	Network Downtime (Threshold: < 1%)	Grade of Service (Threshold: ≤ 2%)	Service Accessibility (Threshold: > 97% for 3Years)	Call Connection Time (Threshold: ≤ 6.5 Sec)	Call Completion Ratio (Threshold: > 98%)	End to End Speech Quality (Threshold: MOS > 3)	Inter System Handover of CS Voice (Threshold: ≥ 94% for 3 Year)	Success Rate (Threshold: > 99%)	End to End Delivery Time (Threshold: ≤ 12 Sec)
Lahore	2.62%	0.67%	97.38%	5.5 Sec	99.33%	3.8	100%	-	-
ISB/RWP	0%	0%	99.01%	5.9 Sec	99%	3.4	-	100%	5.9 Sec
Peshawar	0%	2.5%	97.5%	7.07 Sec	97.97%	3.66	100%	100%	5.05 Sec
Overall	0.87%	1.06%	97.96%	6.16 Sec	98.77%	3.62	100%	100%	5.48 Sec

3G KPIs

City	User Data Throughput (Threshold: 3G > 256 kbps)		Signal Strength Received Signal Code Power - 3G (Threshold: Minimum -100dBm)
	Data Throughput -HTTP Download (Threshold: 3G ≥ 256 kbps)	Data Throughput -FTP Download (Threshold: 3G ≥ 256 kbps)	
Lahore	1657.5 kbps	1358.7 kbps	-72.697 dBm
ISB/RWP	961 kbps	-	-74.39 dBm
Peshawar	1195.5 kbps	746 kbps	-71.35 dBm
Overall	1271.33 kbps	1052.35 kbps	-72.81 dBm

CMO's (2G/3G/4G)QoS SURVEY RESULTS - 2015

City Wise Results - Telenor Pakistan

a. 2G KPIs

City	Voice KPIs							SMS KPIs	
	Network Downtime (Threshold: < 1%)	Grade of Service (Threshold: ≤ 2%)	Service Accessibility (Threshold: > 97% for 3Years)	Call Connection Time (Threshold: ≤ 6.5 Sec)	Call Completion Ratio (Threshold: > 98%)	End to End Speech Quality (Threshold: MOS > 3)	Inter System Handover of CS Voice (Threshold: ≥ 94% for 3 Year)	Success Rate (Threshold: > 99%)	End to End Delivery Time (Threshold: ≤ 12 Sec)
Lahore	1.31%	1.66%	98.69%	5.3 Sec	98.34%	3.9	100%	100%	5 Sec
ISB/RWP	0%	0%	100%	4.56 Sec	99%	3.79	-	100%	4.15 Sec
Peshawar	0.03%	0%	100%	5.85 Sec	99.5%	3.64	75%	100%	4.58 Sec
Overall	0.45%	0.55%	99.56%	5.24 Sec	98.95%	3.78	87.50%	100%	5 Sec

b. 3G KPIs

City	User Data Throughput (Threshold: 3G > 256 kbps)		Signal Strength Received Signal Code Power - 3G (Threshold: Minimum -100dBm)
	Data Throughput -HTTP Download (Threshold: 3G ≥ 256 kbps)	Data Throughput -FTP Download (Threshold: 3G ≥ 256 kbps)	
Lahore	3127.8 kbps	1758 kbps	-76.532 dBm
ISB/RWP	1842 kbps	-	-73.7 dBm
Peshawar	1709.8 kbps	243.8 kbps	-73.01 dBm
Overall	2226.53 kbps	1000.90 kbps	-74.41 dBm

CMO's (2G/3G/4G)QoS SURVEY RESULTS - 2015

City Wise Results - Warid Telecom

a. 2G KPIs

City	Voice KPIs							SMS KPIs	
	Network Downtime (Threshold: < 1%)	Grade of Service (Threshold: ≤ 2%)	Service Accessibility (Threshold: > 97% for 3Years)	Call Connection Time (Threshold: ≤ 6.5 Sec)	Call Completion Ratio (Threshold: > 98%)	End to End Speech Quality (Threshold: MOS > 3)	Inter System Handover of CS Voice (Threshold: ≥ 94% for 3 Year)	Success Rate (Threshold: > 99%)	End to End Delivery Time (Threshold: ≤ 12 Sec)
Lahore	1.32%	0.67%	98.68%	6.1 Sec	99.33%	3.4	100%	-	-
ISB/RWP	0.08%	1.01%	98.99%	7.02 Sec	99.3%	3.73	100%	100%	3.1 Sec
Peshawar	0.18%	1.5%	98.5%	6.62 Sec	100%	3.69	100%	100%	-
Overall	0.53%	1.06%	98.72%	6.58 Sec	99.54%	3.61	100%	100%	3.1 Sec

b. 4G/LTE KPIs

City	User Data Throughput (Threshold: 4G > 2Mbps)		Signal Strength Received Signal Receive Power – 4G (Threshold: Minimum-100dBm)
	Data Throughput -HTTP Download	Data Throughput -HTTP Download	
Lahore	4.5 Mbps	3.3 Mbps	-83.52 dBm
ISB/RWP	7.5 Mbps	-	-73.4 dBm
Peshawar	5.9 Mbps	2.4 Mbps	-84.14 dBm
Overall	5.95 Mbps	2.9 Mbps	-80.35 dBm

CMO's (2G/3G/4G)QoS SURVEY RESULTS - 2015

City Wise Results - CMPak (ZonG)

a. 2G KPIs

City	Voice KPIs							SMS KPIs	
	Network Downtime (Threshold: < 1%)	Grade of Service (Threshold: ≤ 2%)	Service Accessibility (Threshold: > 97% for 3Years)	Call Connection Time (Threshold: ≤ 6.5 Sec)	Call Completion Ratio (Threshold: > 98%)	End to End Speech Quality (Threshold: MOS > 3)	Inter System Handover of CS Voice (Threshold: ≥ 94% for 3 Year)	Success Rate (Threshold: > 99%)	End to End Delivery Time (Threshold: ≤ 12 Sec)
Lahore	0.66%	1%	99.34%	5.2 Sec	99%	3.7	33.33%		
ISB/RWP	0.1%	0%	100%	6.7 Sec	100%	3.4	-	100%	4.2 Sec
Peshawar	0.01%	1.51%	98.49%	5.54 Sec	98.98%	3.41	100%	100%	4.35 Sec
Overall	0.26%	0.84%	99.28%	5.81 Sec	99.33%	3.50	66.67%	100%	4.28 Sec

b. 3G KPIs

City	User Data Throughput (Threshold: 3G > 256 kbps)		Signal Strength Received Signal Code Power - 3G (Threshold: Minimum -100dBm)
	Data Throughput -HTTP Download (Threshold: 3G > 256 kbps)	Data Throughput -FTP Download (Threshold: 3G > 256 kbps)	
Lahore	2957 kbps	4174.8 kbps	-73.117 dBm
ISB/RWP	4019 kbps	-	-77.7 dBm
Peshawar	4017.5 kbps	1689.7 kbps	-81.15 dBm
Overall	3664.5 kbps	2932.25 kbps	-77.32 dBm

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c. 4G/LTE KPIs

City	User Data Throughput (Threshold: 4G > 2Mbps)		Signal Strength Received Signal Receive Power – 4G (Threshold: Minimum-100dBm)
	Data Throughput -HTTP Download	Data Throughput -HTTP Download	
Lahore	7.8 Mbps	7.5Mbps	-87.92 dBm
ISB/RWP	8.3 Mbps	-	-74.39 dBm
Peshawar	12.2 Mbps	4.8 Mbps	-94.77 dBm
Overall	9.4 Mbps	6.1 Mbps	-85.69 dBm