MOBILE NETWORK
QUALITY OF SERVICE PERFORMANCE REPORT
2015-2016

1. Introduction

The Authority has finalized the annual analysis and review of Quality of Service (QoS) performance by the mobile network operators' countrywide for the financial year 2015/2016. The assessment is conducted annually to ascertain compliance with the Kenya Information and Communication Act, 1998, the attendant Regulations and license conditions in relation to Quality of Service (QoS). The report provides the level of conformance of the licensees' services to the set quality of service standards expressed in terms of a select set of parameters, also referred to as Key Performance Indicators (KPIs) as detailed on Table 1 below. A mobile operator is rated compliant when they attain 80% of the set QoS KPI standards.

Table 1: Performance KPIs and Targets

No.	KEY PERFORMANCE INDICATOR – KPI	General Definition	Targets
1.	Call Completion Rate (CCR)	CCR; Refers to the total number of calls that are successfully completed after being set up.	≥95%. Good networks ensure more than 95% of setup calls are completed.
2.	Call Set Up Success Rate (CSSR)	CSSR; Refers to the percentage/number of calls that are successfully set-up or initiated.	≥95%. Good networks ensure more than 95% of call attempts

			are set up.
3.	Call Drop Rate (CDR)	CDR Refers to the number of calls that are set up successfully but disconnects before completion of speech.	≤2% . Good Networks ensure that not more than 2% of their calls can drop.
4.	Call Block Rate (CBR)	CBR; Refers to the number of call attempts that cannot be initiated or set-up. Not accepted.	≤5%. A good network should not have more than 5% of the calls blocked.
5.	Speech Quality (MOS)	MOS; Refers to the level of clarity of a voice call including the noise level and pitch.	95% of samples >3.1 The speech is rated on a scale of up to 5.
6.	Call Set Up Time (CST)	CST; Refers to the length of time involved before a call is finally set up. How many rings before.	<13.5 seconds Most networks operate between 4 to 13.5 Sec.
7.	Handover Success Rate (HSR)	HSR; Refers to the number of calls that can be sustained while moving from one cell to the other. It is a mobility test.	≥90%. A good network allows more than 90% HSR
8.	Rx Lev	RxLev; This refers to the presence and level of perceived signal in a given place. The signal is strong with smaller –ve value and weak with a large –ve value i.e -55dbm is stronger than -95dbm.	Outdoor => -102 dBm. The mobile network signal operates betwn -65dBm and – 100 dBM.

Preparatory process

This year's review was done in three stages, which commenced the cleaning of data collected to eliminate invalid measurements and subsequent preparation of a draft report. The second phase was secondary verification of the data collected by the

equipment supplier and the mobile network operators. The final stage entailed reviewing and incorporating the views and comments received into the report.

2. Test Configuration

Three mobile networks were simultaneously monitored using intra-network mobile-to-mobile configuration. The slave unit (receiving unit) was stationary (MT) while the master (MO) (mobile unit) gathered data from the field. This set up is considered to be scientifically sound and a better benchmarking platform for performance assessment and evaluation of the various networks as outlined in the approved measurement methodology for voice services. Care was taken to ensure that any unstable performance was not due to human and machine error but purely a reflection of the network status. Invalid data was discarded under strict post-processing software and team reviews as detailed above.

Table 2 below shows the regions and counties covered. The monitoring focus was on highways, roads, towns and shopping centres within and along county boundaries.

Table 2: Regions Covered

No	Region	County
1	Western Region	Vihiga, Busia, Kakamega, and Bungoma
2	Nyanza Region	Kisumu, Kisii, Siaya, Migori, Homa Bay and Nyamira.
3	North Rift Region	Uasin Gishu, Nandi, Baringo and Elgeyo Marakwet
4	North Western	Trans Nzoia, West Pokot & Turkana
5	South Rift Region	Nakuru, Kericho, Bomet & Narok
6	Coast Region	Mombasa, Kilifi, Kwale, Taita Taveta, Tana River, and Lamu
7	Central Region	Laikipia, Muranga, Kirinyaga, Nyandarua, Tharaka Nithi, Embu & Nyeri
8	Lower Eastern	Machakos, Makueni, Kitui and Kajiado
9	Upper Eastern	Samburu, Isiolo, Meru and Marsabit
10	Nairobi Region	Nairobi and Kiambu Counties.

3. Comments on Assessment / Coverage area considered

The coverage of the above regions was aimed at collecting and sampling data that most represents the experience of the users of the mobile services. Measurements in

some regions had overlaps due to the manner in which the existing road networks traverse what were formerly local government boundaries. The counties were covered as detailed above. It is however not presently feasible to present county results due to the intertwined access infrastructure.

The results are therefore presented in terms of regions covering a group of counties covered during one drive test exercise. The report also provides an overall performance for each operator in the country and in the regions defined in this report. Effort was made to reach the far-flung and non-routine routes and settlements in counties. This is critical to guide the principal aim of bridging the digital divide across Kenyan communities and regions as stipulated in the roll out targets.

Security challenges made it difficult to cover Mandera, Wajir, Lamu and Garissa counties. Also affected were some parts of Marsabit, Samburu, Kilifi and Elgeyo Marakwet counties. These areas will be assessed once the security situation improves or other non-intrusive methods are developed. The overall or countrywide performance is reported in Table 3.2. Tables 4.1, 4.2 and 4.3 show the individual operator performance across the different regions. Table 3.1 below is a comparison of the results over the last four years.

Table 3.1: Summary of overall performance for the last four years

Operator	Target QoS Parameters		Performance Achieved (%)			
	Number	**Percentage (%)**	**2012/13**	**2013/14**	**2014/15**	**2015/16**
Airtel Network Kenya Limited	8	80	50	62.5	62.5	**75.0**
Safaricom Limited	8	80	50	62.5	62.5	**62.5**
Telkom Kenya Limited	8	80	62.5	62.5	62.5	**75.0**

It is noteworthy that compared to the previous year, Airtel's and Telkom Kenya's performance improved from 62.5% to 75% (i.e. 6 parameters out of the 8), while Safaricom did not register improvement in terms of KPI scores. It is however worthy noting that Safaricom had more signal presence and coverage across the country compared to Airtel and Telkom Kenya. The performance in 2015/16 has shown a remarkable improvement compared to the last two financial years albeit still below the threshold of 80%. Overall all the three mobile network operators failed to meet the minimum threshold of at least 7 out of the eight (8) KPIs

measured. The detailed national performance by parameter for each operator is provided in section 4 of this report.

Table 3.2: Overall Performance per given Parameter

	HSR	RX Lev	CSSR	Setup time	MOS	CCR	BCR	CDR	Overall compliance
TARGET	**90%**	**-102 dBm**	**95%**	**<13.5 Sec.**	**95% > 3.1**	**>95%**	**≤5%**	**≤2%**	
AIRTEL	97.5	-76.69	95.0	5.63	3.25	93.3	5.2	1.6	**75%**
Status	Pass	Pass	Pass	Pass	Pass	Fail	Fail	Pass	**Not Compliant**
SAFARICOM	96.6	-79.35	95.0	6.77	3.37	91.8	5.2	2.8	**62.5%**
Status	Pass	Pass	Pass	Pass	Pass	Fail	Fail	Fail	**Not Compliant**
TELKOM KENYA	97.2	-72.46	95.0	7.29	3.47	93.1	5.6	1.5	**75%**
Status	Pass	Pass	Pass	Pass	Pass	Fail	Fail	Pass	**Not Compliant**

Key:

HSR	Handover Success Rate
CSSR	Call Set-up Success Rate
CCR	Call Completion Rate
CBR	Call Block Rate
CDR	Call Drop Rate

All operators complied with QoS targets on Handover Success Rate, Call set up time, Signal Strength (RxLev), Call Set up Success Rate and Speech Quality (MOS). The performance on Dropped calls, Blocked calls and Call Completion Rate improved across the three networks but still fell below target.

4. Countrywide Performance – By Operator

Table 4.1 Airtel

	HSR	Rx Lev	CSSR	Setup time	MOS	Completed	Blocked calls	Dropped calls	Overall compliance
TARGET	**90%**	**>-102 dBm**	**95%**	**<13.5 Sec.**	**95% > 3.1**	**95%**	**<5%**	**<2%**	
Western	98.2	-75.5	95.6	7.16	3.24	95	4.5	0.6	**Compliant (100%)**
Status	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
Nyanza	99.1	-69.97	98.2	4.45	3.19	96.6	1.8	1.6	**Compliant (100%)**
Status	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
North Rift	100	-96.76	95.3	5.55	3.09	94.0	5.7	0.8	**Not Compliant (75%)**
Status	Pass	Pass	Pass	Pass	Pass	Fail	Fail	Pass	
North Western	95.7	-75.48	92.3	8.68	3.31	91.1	7.9	1.2	**Not Compliant (62.5%)**
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Pass	
South Rift	96.8	-73.18	94.0	5.97	3.11	91.8	6.4	2.2	**Not Compliant (50%)**
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Fail	
Coast	99.0	-92.49	93.3	4.68	3.2	92.3	6.8	0.8	**Not Compliant (62.5%)**
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Pass	
Lower Eastern	96.6	-74.47	96.4	4.34	3.21	94.2	3.6	2.1	**Not Compliant (75%)**
Status	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Fail	
Upper Eastern	96.0	-76.41	93.5	4.55	3.46	92.8	6.6	0.7	**Not Compliant (62.5%)**
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Pass	
Central	97.5	-74.47	95.0	5.19	3.18	91.9	5.0	3.1	**Not Compliant (75%)**
Status	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Fail	
Nairobi	94.7	-64.68	96.6	6.06	3.45	95.1	3.4	1.5	**Compliant (100%)**
Status	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	

Table 4.2 Safaricom Limited

	HSR	RX	CSSR	Setup time	MOS	Comple ted	Blocked calls	Dropped calls	Overall compliance
TARGET	90%	-102 dBm	95%	<13.5 Sec.	95% > 3.1	95%	<5%	<2%	
Western	91.4	-91.41	92.6	7.60	3.27	88.8	7.5	2.9	Not Compliant (50%)
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Fail	
Nyanza	99.0	-68.79	95.0	6.37	3.48	93.5	5.0	1.5	Compliant (87.5%)
Status	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Pass	
North Rift	96.0	-72.77	96.7	6.06	2.95	93.2	3.4	3.1	Not Compliant (62.5%)
Status	Pass	Pass	Pass	Pass	Fail	Fail	Pass	Fail	
North Western	96.0	-84.46	91.9	7.13	3.24	88.6	8.5	2.9	Not Compliant (50%)
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Fail	
South Rift	97.0	-72.12	91.3	7.77	3.45	88.7	8.8	2.5	Not Compliant (50%)
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Fail	
Coast	98.0	-69.32	98.0	6.32	3.55	97.4	2.0	0.7	Compliant (100%)
Status	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
Lower Eastern	97.0	-76.15	94.8	6.71	3.20	91.9	5.2	2.9	Not Compliant (50%)
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Fail	
Upper Eastern	97.0	-91.15	95.0	7.00	3.6	91.2	5.0	3.0	Not Compliant (75%)
Status	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Fail	
Central Status	97.0	-83.76	96.3	6.77	3.59	92.5	3.7	3.5	Not Compliant (75%)
	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Fail	
Nairobi	97.4	-91.63	96.7	7.42	3.5	89.7	3.3	5.5	Not Compliant (75%)
Status	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Fail	

Table 4.3 Telkom Kenya

	HSR	RX	CSSR	Setup time	MOS	Completed	Blocked calls	Dropped calls	Overall compliance
TARGET	**90%**	**-102 dBm**	**95%**	**<13.5 Sec.**	**95% > 3.1**	**95%**	**<5%**	**<2%**	
Western	97.3	-69.32	98.3	7.14	3.69	97.3	1.7	1.0	**Compliant (100%)**
Status	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
Nyanza	97.6	-64.06	96.6	7.17	3.5	95.9	3.4	0.6	**Compliant (100%)**
Status	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
North Rift	97.8	-96.76	95.7	7.10	3.52	93.5	5.1	2.2	**Not Compliant (62.5%)**
Status	Pass	Pass	Pass	Pass	Pass	Fail	Fail	Fail	
South Rift	99.2	-88.82	90.1	8.36	3.42	86.6	10.5	2.7	**Not Compliant (50%)**
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Fail	
North Western	98.5	-73.15	92.2	7.34	3.55	91.0	8.3	1.1	**Not Compliant (62.5%)**
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Pass	
Lower Eastern	96.6	-74.47	92.7	7.53	3.34	90.5	7.4	2.2	**Not Compliant (50%)**
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Fail	
Upper Eastern	93.4	-73.24	93.9	7.12	3.69	92.4	6.6	1.5	**Not Compliant (62.5%)**
Status	Pass	Pass	Fail	Pass	Pass	Fail	Fail	Pass	
Central	97.4	-69.05	95.5	7.33	3.22	94.1	4.5	1.4	**Compliant (87.5%)**
Status	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Pass	
Nairobi	97.2	-63.92	97.6	6.98	3.36	96.5	2.4	1.1	**Compliant (100%)**
Status	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	

Telkom Kenya was the best performer with full compliance in four regions i.e. Nairobi, Central, Nyanza and Western. Airtel came in second with full compliance in three regions i.e. Nyanza, Western and Nairobi. Safaricom was last with full compliance in Coast and Nyanza regions only.

REGIONAL PERFORMANCE BENCHMARK

Western Kenya

KPIs	CBR	CSSR	CDR	CCR	MOS	CST (SEC)	RSL (dBm)	HSR	RESULT
Airtel	4.5%	95.6%	0.6%	94.9%	3.24	7.16	-75.5	98.2%	**87.50%**
	PASS	PASS	PASS	FAIL	PASS	PASS	PASS	PASS	COMPLIANT
Safaricom	7.5%	92.6%	2.9%	88.8%	3.27	7.60	-91.41	91.4%	**50.00%**
	FAIL	FAIL	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Telkom	1.7%	98.3%	1.0%	97.3%	3.69	7.14	-69.32	97.3%	**100.00%**
	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	COMPLIANT

Nyanza Region

KPIs	CBR	CSSR	CDR	CCR	MOS	CST (SEC)	RSL (dBm)	HSR	RESULT
Airtel	1.8%	98.2%	1.6%	96.6%	3.19	4.45	-69.97	99.1%	**100.00%**
	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	COMPLIANT
Safaricom	5.0%	95.0%	1.5%	93.5%	3.48	6.37	-68.79	99.3%	**87.50%**
	PASS	PASS	PASS	FAIL	PASS	PASS	PASS	PASS	COMPLIANT
Telkom	3.4%	96.6%	0.6%	95.9%	3.50	7.17	-64.06	97.6%	**100.00%**
	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	COMPLIANT

North Rift Region

KPIs	CBR	CSSR	CDR	CCR	MOS	CST (SEC)	RSL (dBm)	HSR	RESULT
Airtel	5.7%	95.3%	0.8%	94.0%	3.09	5.55	-96.76	100.0%	**75.00%**
	FAIL	PASS	PASS	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Safaricom	3.4%	96.7%	3.1%	93.2%	2.95	6.06	-72.77	95.6%	**75.00%**
	PASS	PASS	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Telkom	5.1%	95.7%	2.2%	93.5%	3.52	7.10	-96.76	97.8%	**75.00%**
	FAIL	PASS	PASS	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT

South Rift

KPIs	CBR	CSSR	CDR	CCR	MOS	CST (SEC)	RSL (dBm)	HSR	RESULT
Airtel	6.4%	94.0%	2.2%	91.8%	3.11	5.97	-73.18	96.8%	**50.00%**
	FAIL	FAIL	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Safaricom	8.8%	91.3%	2.5%	88.7%	3.45	7.77	-72.12	96.8%	**50.00%**
	FAIL	FAIL	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Telkom	10.5%	90.1%	2.7%	86.6%	3.42	8.36	-88.82	99.2%	**50.00%**
	FAIL	FAIL	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT

North Western

KPIs	CBR	CSSR	CDR	CCR	MOS	CST (SEC)	RSL (dBm)	HSR	RESULT
Airtel	7.9%	92.3%	1.2%	91.1%	3.31	8.68	-75.48	95.7%	**62.50%**
	FAIL	FAIL	PASS	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Safaricom	8.5%	91.9%	2.9%	88.6%	3.24	7.13	-84.46	95.6%	**50.00%**
	FAIL	FAIL	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Telkom	8.3%	92.2%	1.1%	91.0%	3.55	7.34	-73.15	98.5%	**62.50%**
	FAIL	FAIL	PASS	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT

Lower Eastern

KPIs	CBR	CSSR	CDR	CCR	MOS	CST (SEC)	RSL (dBm)	HSR	RESULT
Airtel	3.6%	96.4%	2.1%	94.2%	3.21	4.34	-74.47	96.6%	**75.00%**
	PASS	PASS	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Safaricom	5.2%	94.8%	2.9%	91.9%	3.20	6.71	-76.15	97.1%	**50.00%**
	FAIL	FAIL	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Telkom	7.4%	92.7%	2.2%	90.5%	3.34	7.53	-74.47	96.6%	**50.00%**
	FAIL	FAIL	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT

Upper Eastern

KPIs	CBR	CSSR	CDR	CCR	MOS	CST (SEC)	RSL (dBm)	HSR	RESULT
Airtel	6.6%	93.5%	0.7%	92.8%	3.46	4.55	-76.41	96.0%	**62.50%**
	FAIL	FAIL	PASS	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Safaricom	5.1%	95.0%	3.0%	91.2%	3.60	7.00	-91.15	96.9%	**62.50%**
	FAIL	PASS	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Telkom	6.6%	93.9%	1.5%	92.4%	3.69	7.12	-73.24	93.4%	**62.50%**
	FAIL	FAIL	PASS	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT

Central Kenya

KPIs	CBR	CSSR	CDR	CCR	MOS	CST (SEC)	RSL (dBm)	HSR	RESULT
Airtel	5.0%	95.0%	3.1%	91.9%	3.18	5.19	-74.47	97.5%	**75.00%**
	PASS	PASS	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Safaricom	3.7%	96.3%	3.5%	92.5%	3.59	6.77	-83.76	97.0%	**75.00%**
	PASS	PASS	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Telkom	4.5%	95.5%	1.4%	94.1%	3.22	7.33	-69.05	97.4%	**87.50%**
	PASS	PASS	PASS	FAIL	PASS	PASS	PASS	PASS	COMPLIANT

Nairobi

KPIs	CBR	CSSR	CDR	CCR	MOS	CST (SEC)	RSL (dBm)	HSR	RESULT
Airtel	3.4%	96.6%	1.5%	95.1%	3.45	6.06	-64.68	94.7%	**100.00%**
	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	COMPLIANT
Safaricom	3.3%	96.7%	5.5%	89.7%	3.50	7.42	-91.63	97.4%	**75.00%**
	PASS	PASS	FAIL	FAIL	PASS	PASS	PASS	PASS	NOT COMPLIANT
Telkom	2.4%	97.6%	1.1%	96.5%	3.36	6.98	-63.92	97.2%	**100.00%**
	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	COMPLIANT

Annex 1

Comparison of operators on their Overall Performance per Parameter

1. **Received Signal Level**

Received Signal Level >= -103 dBm)

- Airtel: -76.69
- Safaricom: -79.35
- Telkom: -72.46

Legend: Target, Airtel, Safaricom, Telkom
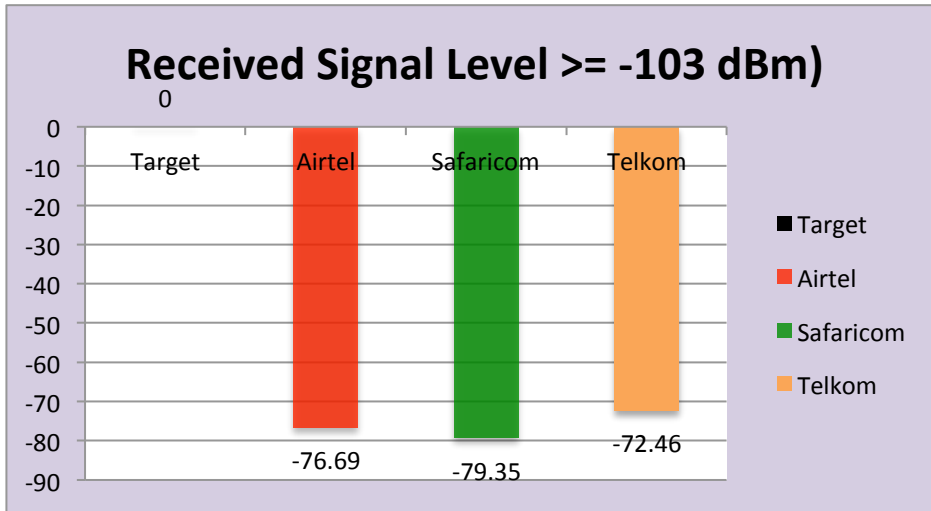
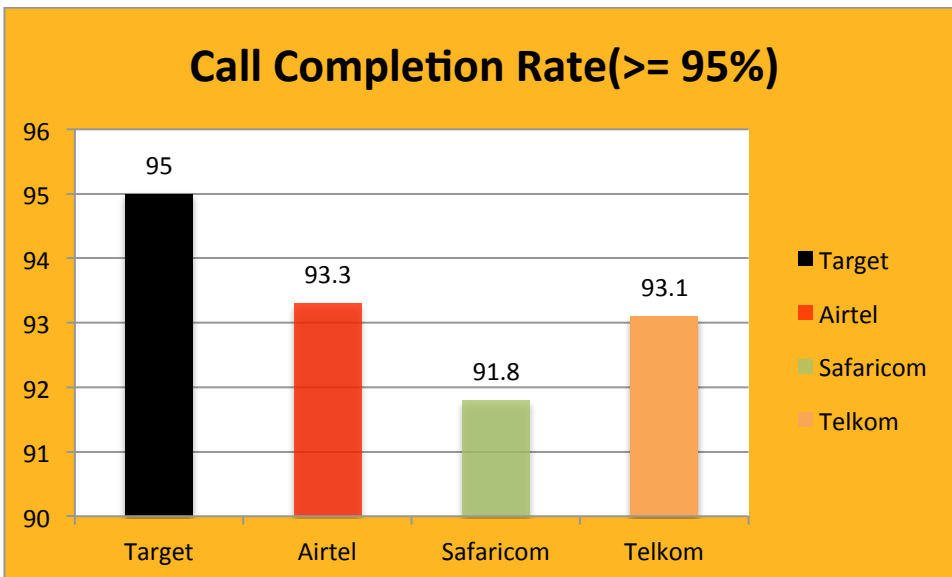The operators were rated on a target of greater than -102dBM. All the operators met this target. Telkom Kenya was the best performer on this KPI.

2. **Call Block Rate (CBR)**

Blocked Call Rate(<=5%)

- Target: 0
- Airtel: 5.2
- Safaricom: 5.2
- Telkom: 5.6

Legend: Target, Airtel, Safaricom, Telkom
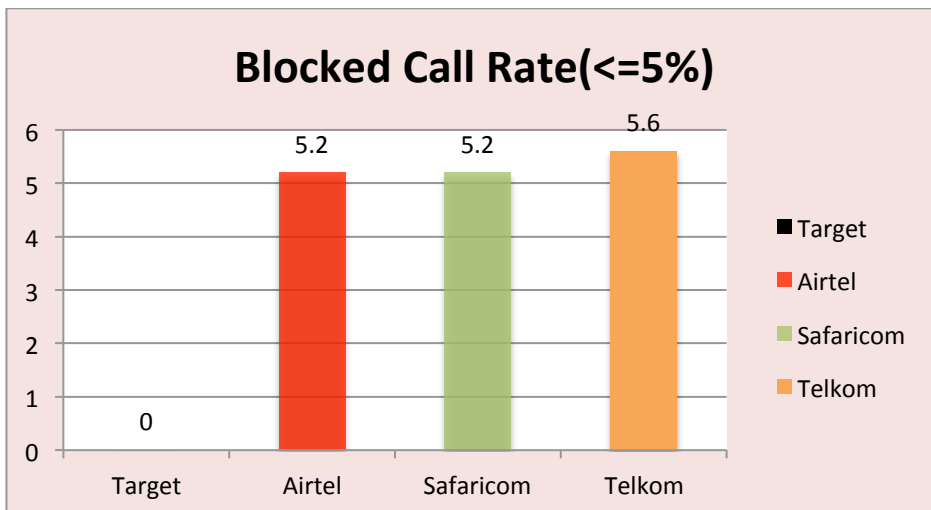
The Operators are rated on a target of less than 5%.. All the operators failed on this parameter.

3. Call Set-up Time (CST)

Call Setup Time (<=13.5 sec)
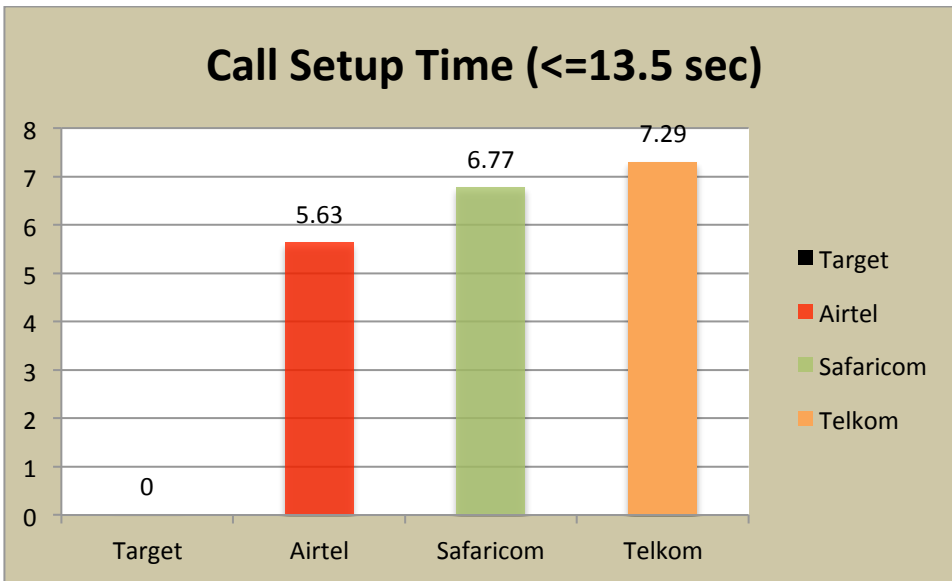
The operators were rated on a target of less than 13.5 Seconds. They all met the target. Airtel Kenya Limited was the Best Performer on this parameter.

4. Call Set-up Success Rate (CSSR)

Call Setup Success Rate (>= 95%)
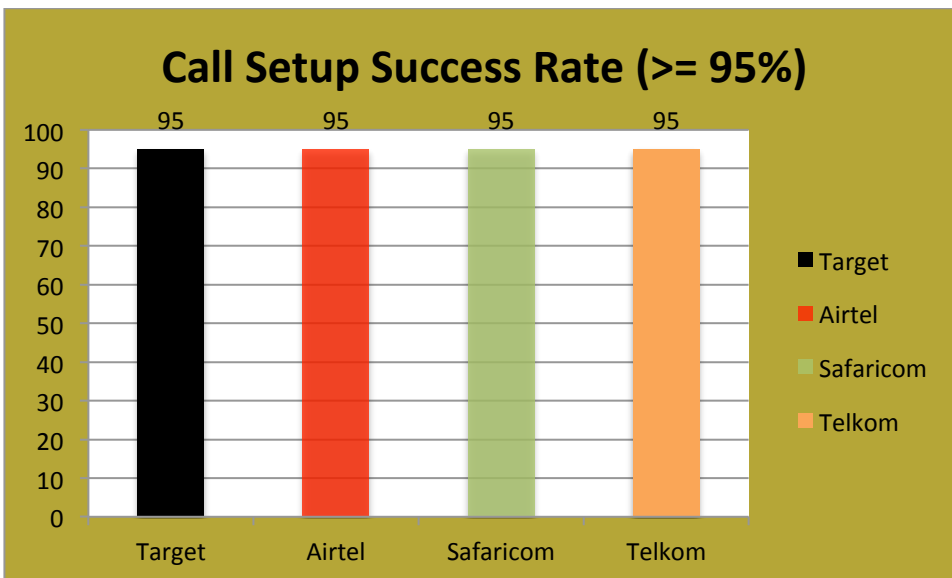
The opereators were rated on a target of greater than 95%. All operators met this target.

5. Call Drop Rate (CDR)

Dropped Calls Rate(<2%)
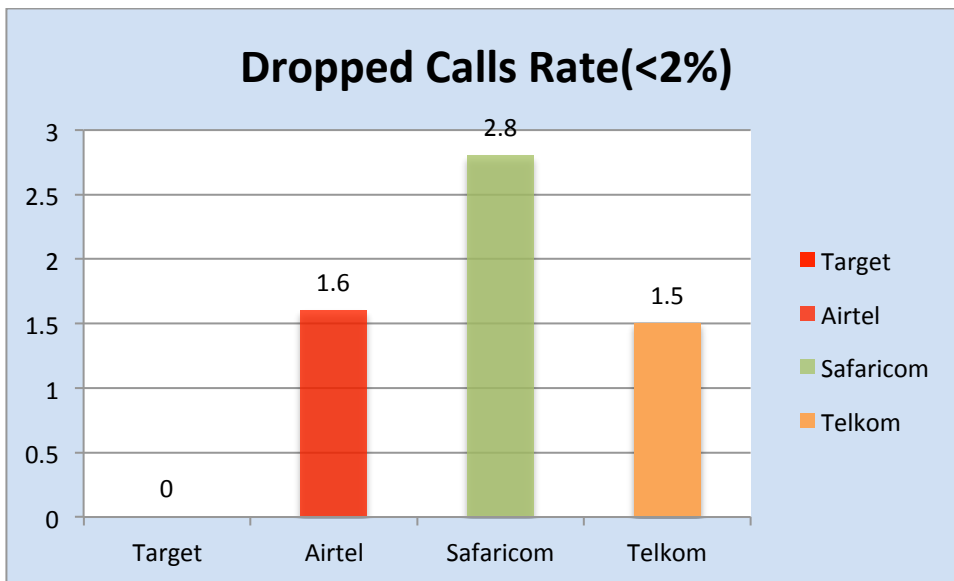
The operators are rated on a target of less than 2% of the calls that are dropped once successfully set up. All the operators met this target except Safaricom. Telkom Kenya Limited was the Best Performer on this parameter.

6. Speech Quality (MOS)

Speech Quality (>=3.1)
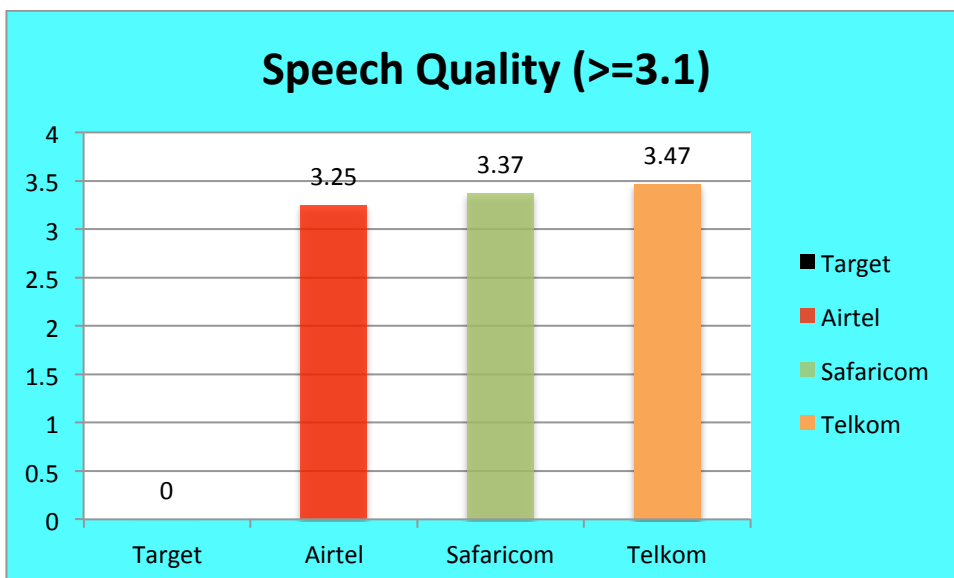
The operators were rated on a target of a MOS value of more than 3.1. All operators met this target. Telkom Kenya Limited was the Best Performer on this parameter.

7. Handover Success Rate (HSR)

Call Handover Success Rate(>= 90%)
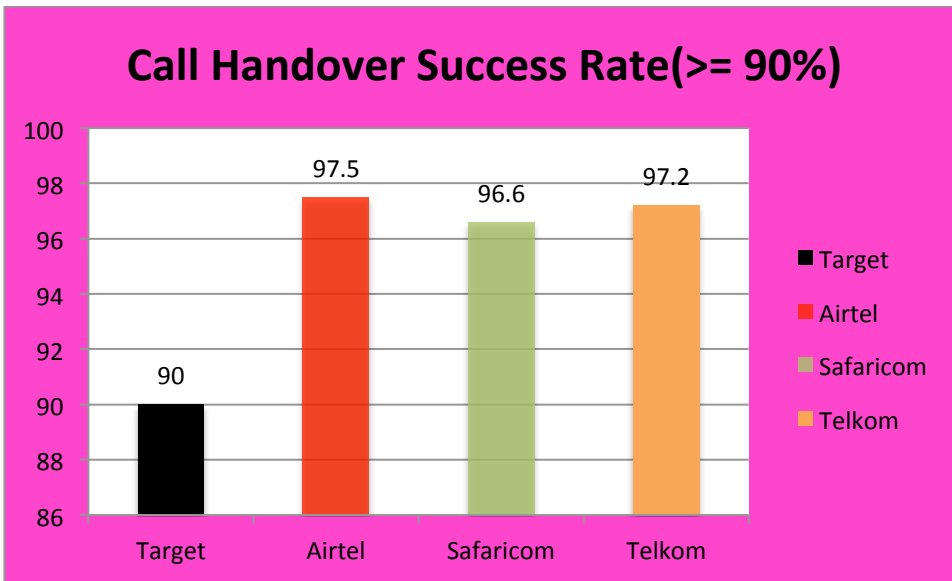
The Operators were rated on a scale of greater than 90%. All the operators met this target. Airtel Kenya Limited was the Best Performer on this parameter.

8. Call Completion Rate (CCR)

Call Completion Rate(>= 95%)

The Operators are rated on a target of greater than 95% . All the operators failed to meet this target.

Annex 2
## Comparison of operators Performance in Regions against a Target of ≥87.5%

Network	Nyanza
Target	87.5
Airtel	100
Safaricom	87.5
Telkom	100
Average	**95.8**
All operators met the target	
Best covered Region Covering Kisii, Nyamira, Migori, Siaya, Homabay and Kisumu Counties	

Nyanza Region

	Target	Airtel	Safaricom	Telkom
Value	87.5	100	87.5	100
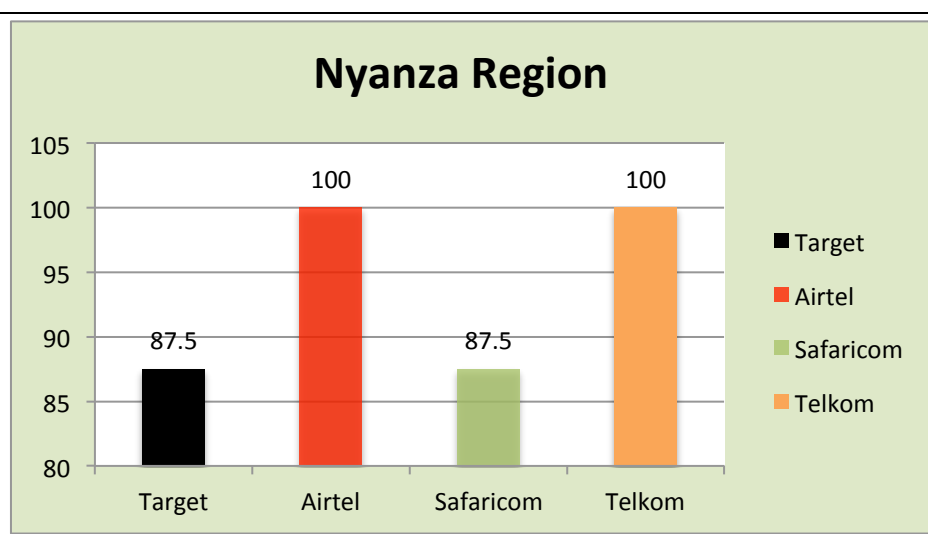
Network	Nairobi
Target	87.5
Airtel	100
Safaricom	75
Telkom	100
Average	**91**
All operators met the target except Safaricom	
2nd Best covered Region Covering Nairobi & Kiambu counties	

Nairobi Region

	Target	Airtel	Safaricom	Telkom
Value	87.5	100	75	100
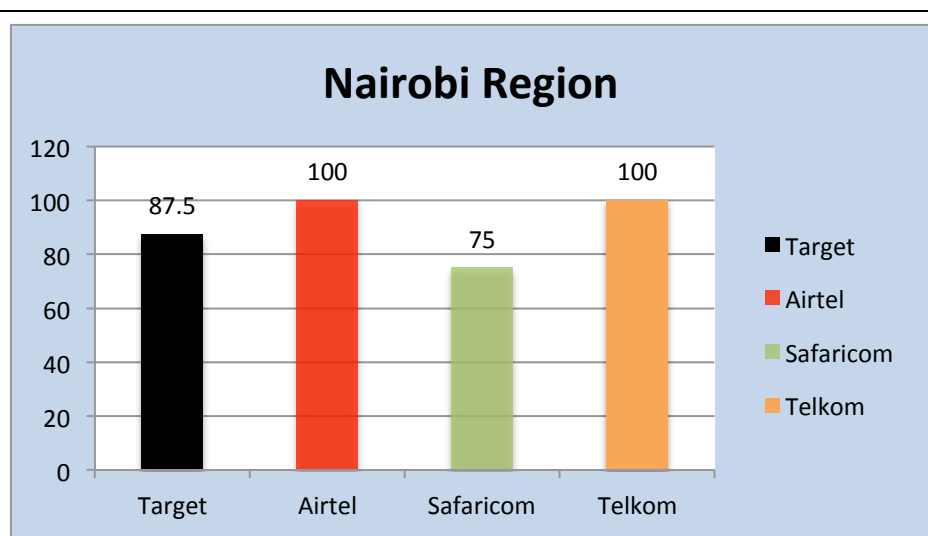
Network	Western
Target	87.5
Airtel	100
Safaricom	50
Telkom	100
Average	**83.3**

All operators met the target except Safaricom

3rd Best covered Region
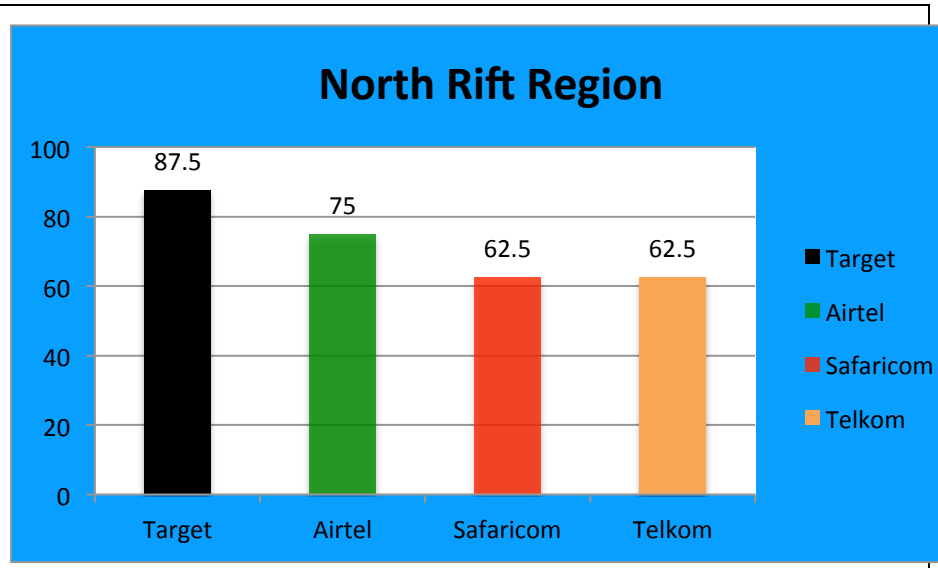**Covering Vihiga, Busia, Kakamega & Bungoma Counties**

Western Kenya Region
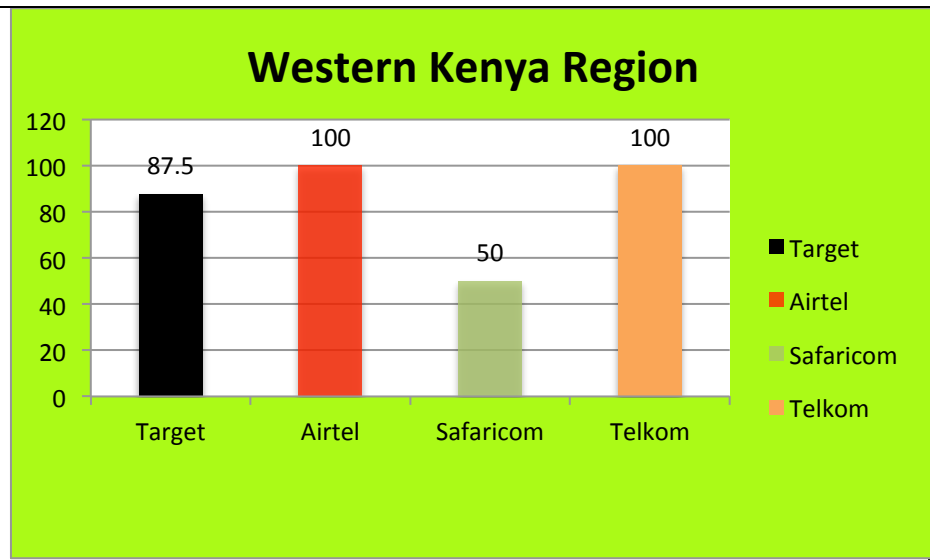
Network	Coast
Target	87.5
Airtel	62.5
Safaricom	100
Average	**81.25**

Safaricom was the Best Performer

Above average performance
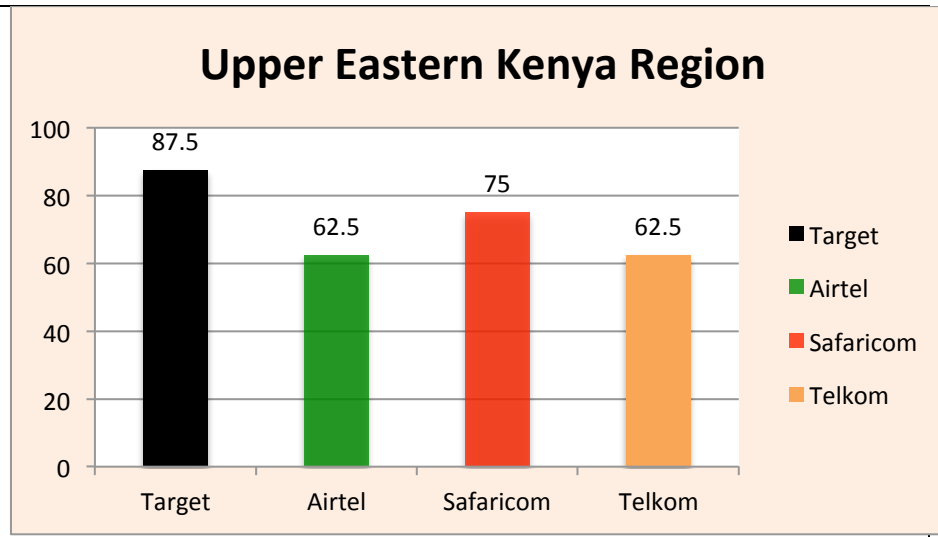**Covering Mombasa, Kilifi, Lamu, Taita Taveta & Kwale Counties**

Coast Region
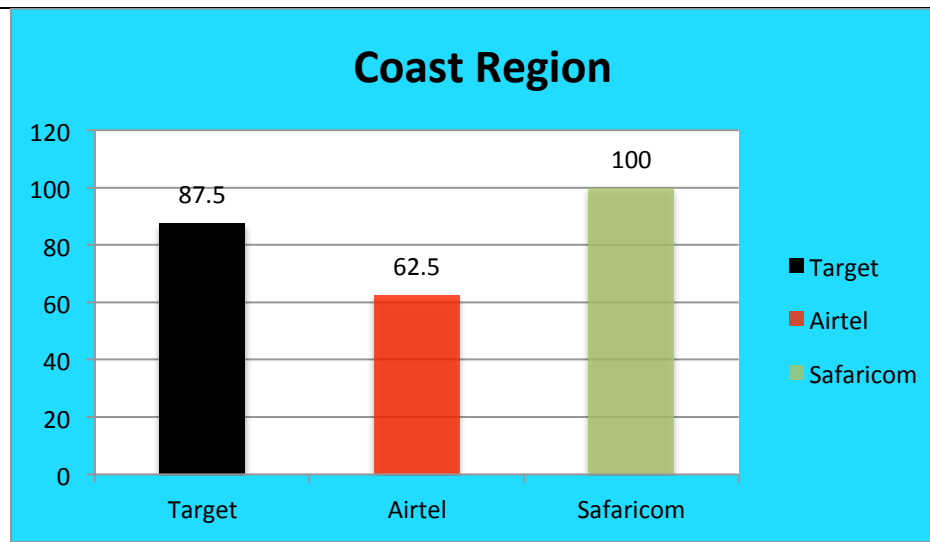
Network	Central
Target	87.5
Airtel	75
Safaricom	75
Telkom	87.5
Average	**79.2**

Telkom Kenya was the Best Performer

Above average performance
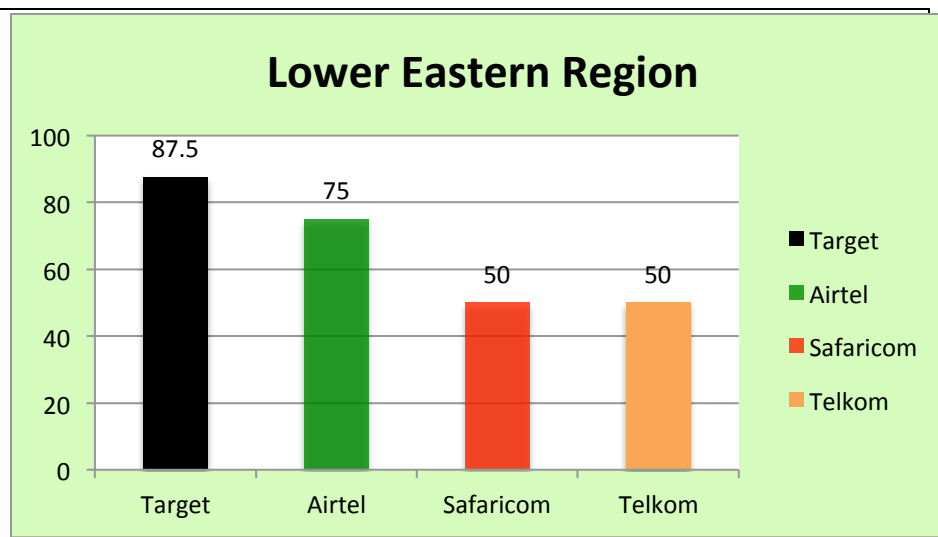**Covering Nyeri, Tharaka Nithi, Muranga, Laikipia, Nyandarua, Meru & Embu counties**

Central Kenya Region
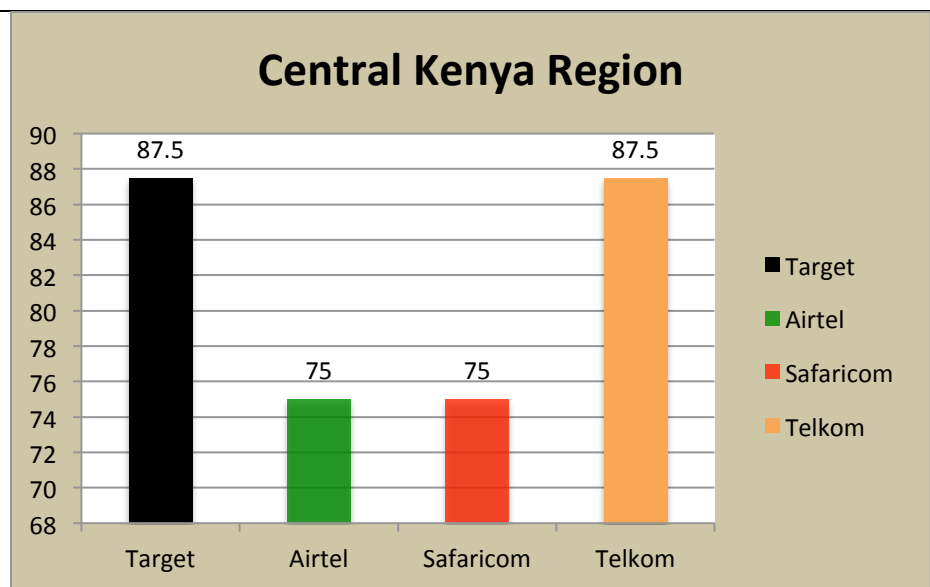
Network	Upper Eastern
Target	87.5
Airtel	62.5
Safaricom	75
Telkom	62.5
Average	**66.7**
Safaricom was the Best Performer	
Above average performance Covering Uasin Gishu, Nandi, Baringo and Elgeyo Marakwet	

North Rift Region

87.5   75   62.5   62.5

Target   Airtel   Safaricom   Telkom

Legend: Target, Airtel, Safaricom, Telkom

Network	North Rift
Target	87.5
Airtel	75
Safaricom	62.5
Telkom	62.5
Average	**66.7**
Airtel Kenya was the Best Performer	
Above average performance Covering Trans Nzoia, West Pokot & Turkana Counties	

Upper Eastern Kenya Region

87.5   62.5   75   62.5

Target   Airtel   Safaricom   Telkom

Legend: Target, Airtel, Safaricom, Telkom

Network	North Rift
Target	87.5
Airtel	75
Safaricom	50
Telkom	50
Average	58.3
Airtel Kenya was the Best Performer	
Above average performance Covering Machakos, Makueni, Kitui and Kajiado	

Lower Eastern Region

87.5   75   50   50

Target   Airtel   Safaricom   Telkom

Legend: Target, Airtel, Safaricom, Telkom

Network	North Rift
Target	87.5
Airtel	62.5
Safaricom	50
Telkom	62.5
Average	58.3

Above average performance Covering Trans Nzoia, West Pokot & Turkana Counties

North Western Region
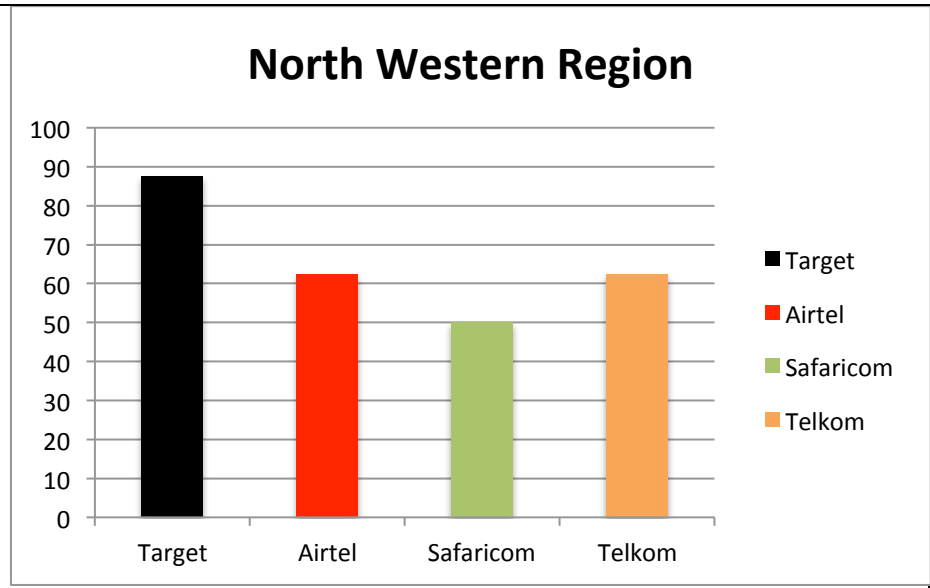
Network	North Rift
Target	87.5
Airtel	50
Safaricom	50
Telkom	50
Average	**50**

Average performance Covering Nakuru, Kericho, Bomet & Narok

South Rift Region
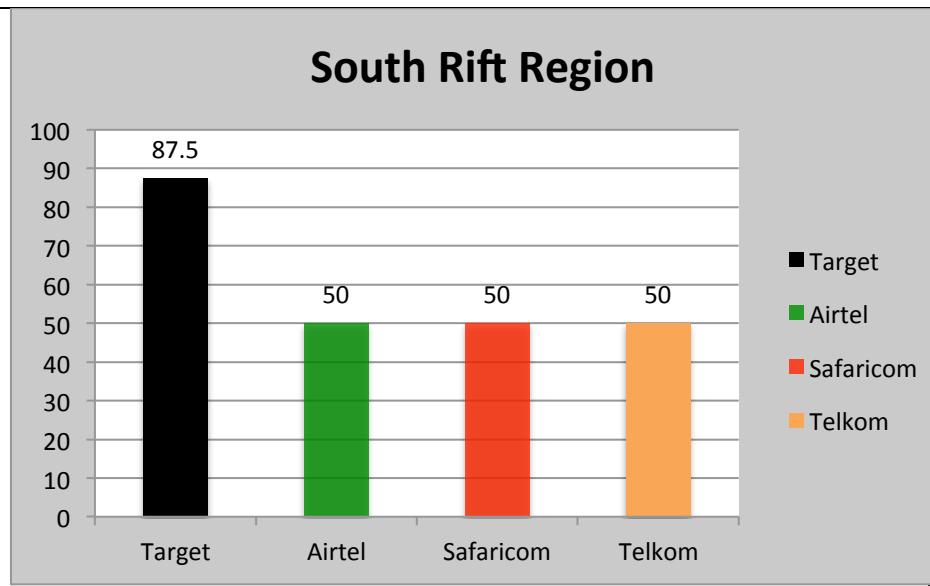
Summary of overall performance per operator from 2011/2012 to 2015/2016

Airtel

Safaricom

Telkom Orange