QUARTERLY STATISTICAL BULLETIN ON COMMUNICATIONS IN GHANA

Volume 2 Issue 1

NATIONAL COMMUNICATIONS AUTHORITY

FIRST QUARTER

JANUARY - MARCH, 2017

Communications for Development

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Vision

A world-class communications Regulator that facilitates innovative, reliable and sustainable communication solutions to meet stakeholders' expectations.

Mission

Regulate the communications industry in a forward-looking and transparent manner that promotes fair and sustainable competition, stimulates innovation, encourages investment, protects stakeholders' interests and facilitates universal access to quality communications services for national development.

Core Values

- Teamwork
- Accountability
- Consistency
- Trust
- Innovation
- Transparency

Tag Line/Slogan

Communications for Development

INTRODUCTION

This Quarterly Statistical Bulletin on Communications is a reference document containing disaggregated data, industry trends, and anwwalysis of the Ghanaian communications sector. It is intended to enhance open and enriched public discussions on policies for telecom analyst, consumers, academia, policy makers, investors and other stakeholders for decision-making.

This bulletin is the product of the responses from the monthly and quarterly questionnaires sent to the various licencees; notably the mobile network operators, broadband wireless access operators, internet service providers and broadcasting entities.

The publication of this bulletin is consistent with the National Communications Authority's mandate under section 26 (2) (a) of the Electronic Communications Act 2008, Act 775; "to publish the result of research that it carries out or that is carried out on its behalf on its website and in any other manner that it considers appropriate to bring the results to the attention of the public".

LIST OF ABBREVIATIONS

BWA	Broadband Wireless Access
EDGE	Enhanced Data rates for GSM Evolution
FM	Frequency Modulation
GB	Gigabytes
GH₵	Ghana Cedi
GHp	Ghana pesewas
GSM	Global System for Mobile communication
HSPA	High Speed Packet Access
ICT	Information Communication Technology
LTE	Long-Term Evolution
MB	Megabytes
MNO	Mobile Network Operator
MNP	Mobile Number Portability
MoU	Minutes of Usage
NCA	National Communications Authority
Q1	First Quarter
Q2	Second Quarter
Q3	Third Quarter
Q4	Fourth Quarter
Q-o-Q	Quarter-on-Quarter
SMS	Short Message Service
TV	Television
UMTS	Universal Mobile Telecommunications Service
Y-o-Y	Year-on-year

DEFINITION OF TERMS

Average SMS per subscription - This is calculated by dividing the total volume of SMS for the last month ending the quarter with the total mobile subscription for that month.

BWA Data Usage per Subscription - This is calculated by dividing the total average volume of BWA's traffic for the quarter with the total BWA subscription for that quarter.

Cellular network or mobile network – refers to a communication network where the last link is wireless. The network is distributed over land areas called cells, each served by at least one fixed-location transceiver, known as a cell site or base station. This base station provides the cell with the network coverage, which can be used for transmission of voice, data and others.

Fixed-line network - The term refers to all of the wired networks that are used for voice and data communications. A fixed-line can be seen as a connection to an end-user, by means of a cable, through which they can make phone calls or connect to the Internet.

Long-Term Evolution (LTE) - is a standard for high-speed wireless communication for mobile phones and data terminals, based on the GSM/EDGE and UMTS/HSPA technologies

Minutes of use per subscription - It is calculated by dividing the total average volume of traffic for that quarter with the total average subscription for that quarter

Mobile Data usage per subscription -It is calculated by dividing the total volume of Data traffic for the quarter with the total average mobile data subscription for that quarter.

Mobile Number Portability (MNP) service – This is a service that enables mobile telephone users to switch to a new operator or service provider and still retain their mobile telephone numbers.

Mobile penetration or Teledensity – This represents the total number of mobile subscriptions per every 100 inhabitants in a geographical area.

Net subscription addition – It refers to the total number of new mobile network subscribers minus customers that terminate a service with the service provider at a given time.

On-net traffic - refers to phone calls made to a recipient on the same network as the caller.

Off-net traffic - refers to phone calls made to a recipient on a different network.

Quarter-on-quarter – This is a comparison of the quarter under review with the preceding quarter.

Q1 – First Quarter (January – March)
Q2 – Second Quarter (April – June)
Q3 – Third Quarter (July – September)
Q4 – Fourth Quarter (October – December)

Year-on-year – This is a comparison of a period under review (month, quarter etc.) with the same period of the preceding year.

THE COMMUNICATIONS INDUSTRY AT A GLANCE

A1. Service Providers in the Communications Industry

Operator/Service Providers	Number of Authorisation/Licences	Number in Operation
Mobile Network Operators	6	6
Fixed Network Operators	3	2
Broadband Wireless Access	4	3
Television Stations	99	51
FM Stations	506	382
Tower Infrastructure Companies	3	3
International Submarine Cables	5	5
Domestic Fibre Operators	10	10

B1. Total Subscriptions/Connected lines

SUBSCRIPTION	QUARTER-ON-QUARTER			YEAR-ON-YEAR			Units
	Q1 2017	Q4 2016	*Growth (%)*	Q1 2017	Q1 2016	*Growth (%)*	
Mobile Voice Subscription	35.8	38.3	*-6.53%*	35.8	36.1	*-0.83%*	Million
Fixed Voice Subscription	267	251	*6.37%*	267	251	*6.37%*	Thousand
Mobile Data Subscription	21.4	19.6	*9.18%*	21.4	18.7	*14.44%*	Million
Fixed Data Subscription	84	86	*-2.33%*	84	77	*9.09%*	Thousand
Broadband Wireless Access	104.1	104.4	*-0.29%*	104.1	101.00	*3.07%*	Thousand

B2. Traffic and SMS Count

TRAFFIC	QUARTER-ON-QUARTER			YEAR-ON-YEAR			Units
	Q1 2017	Q4 2016	*Growth (%)*	Q1 2017	Q1 2016	*Growth (%)*	
Mobile Voice Traffic	13.54	13.16	*2.89%*	13.54	12.36	*9.55%*	Billion
Fixed Voice Traffic	14.45	13.87	*4.18%*	14.45	26	*-44.42%*	Million
Incoming International Traffic	130.2	138.5	*-6.04%*	130.2	159.2	*-18.25%*	Million
Outgoing International Traffic	151.2	158.5	*-4.61%*	151.2	186.8	*-19.06%*	Million
Mobile Data Traffic (MB)	27.2	22.8	*19.30%*	27.2	12.8	*112.50%*	Billion MB
BWA Data Traffic (GB)	3.39	3.2	*5.94%*	3.39	2.26	*50.00%*	Million GB
SMS Count	398	383	*3.92%*	398	385	*3.38%*	Million

B3. Penetration Rate

PENETRATION RATE (%)	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q1 2017	**Q4 2016**	***Growth (%)***	**Q1 2017**	**Q1 2106**	***Growth (%)***
Mobile Voice Subscription	126.6	136.3	*-0.07*	126.6	131	*-0.03*
Fixed Voice Subscription	0.94	0.90	*0.04*	0.94	0.94	*0.00*
Mobile Data Subscription	75.78	69.91	*0.08*	75.78	67.81	*0.12*
Fixed Data Subscription	0.31	0.31	*0.00*	0.37	0.28	*0.32*
Broadband Wireless Access	0.37	0.37	*0.00*	0.31	0.37	*-0.16*

B4. Broadcasting Growth Rate (%)

GROWTH RATE	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q1 2017	Q4 2016	*Growth (%)*	Q1 2017	Q1 2016	*Growth (%)*
FM Authorisation	506	481	*5.2%*	506	420	*20.5%*
FM Operating	381	354	*7.6%*	381	339	*12.4%*
TV Authorisation	99	93	*6.5%*	99	54	*83.3%*
TV Operating	51	51	*0.0%*	51	29	*75.9%*

C1. Categories of FM Radio Stations

CATEGORIES OF FM RADIO STATIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q1 2017	**Q4 2016**	***Growth (%)***	**Q1 2017**	**Q1 2016**	***Growth (%)***
PUBLIC	31	31	*0%*	31	31	*0%*
PUBLIC FOREIGN	5	5	*0%*	5	5	*0%*
CAMPUS	81	76	*7%*	81	70	*16%*
COMMUNITY	22	21	*5%*	22	17	*29%*
COMMERCIAL	367	346	*6%*	367	297	*24%*

C2. Authorised FM Radio Stations by Region

NAME OF REGIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q1 2017	Q4 2016	*Growth (%)*	Q1 2017	Q1 2016	*Growth (%)*
ASHANTI	65	63	*3.2%*	65	56	*16.1%*
BRONG AHAFO	73	67	*9.0%*	73	59	*23.7%*
CENTRAL	35	35	*0.0%*	35	29	*20.7%*
EASTERN	42	42	*0.0%*	42	35	*20.0%*
GREATER ACCRA	53	53	*0.0%*	53	48	*10.4%*
NORTHERN	53	48	*10.4%*	53	42	*26.2%*
UPPER EAST	22	18	*22.2%*	22	16	*37.5%*
UPPER WEST	23	22	*4.5%*	23	17	*35.3%*
VOLTA	56	52	*7.7%*	56	47	*19.1%*
WESTERN	84	81	*3.7%*	84	71	*18.3%*

C3. Operating FM Radio Stations by Region

NAME OF REGIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q1 2017	Q4 2016	*Growth (%)*	Q1 2017	Q1 2016	*Growth (%)*
ASHANTI	50	46	*8.7%*	50	46	*8.7%*
BRONG AHAFO	61	52	*17.3%*	61	53	*15.1%*
CENTRAL	30	29	*3.4%*	30	26	*15.4%*
EASTERN	37	33	*12.1%*	37	32	*15.6%*
GREATER ACCRA	48	47	*2.1%*	48	47	*2.1%*
NORTHERN	35	30	*16.7%*	35	30	*16.7%*
UPPER EAST	12	12	*0.0%*	12	12	*0.0%*
UPPER WEST	11	11	*0.0%*	11	11	*0.0%*
VOLTA	39	35	*11.4%*	39	32	*21.9%*
WESTERN	59	56	*5.4%*	59	50	*18.0%*

1.0 CELLULAR MOBILE NETWORK

1.1 Mobile Voice Subscription and Penetration

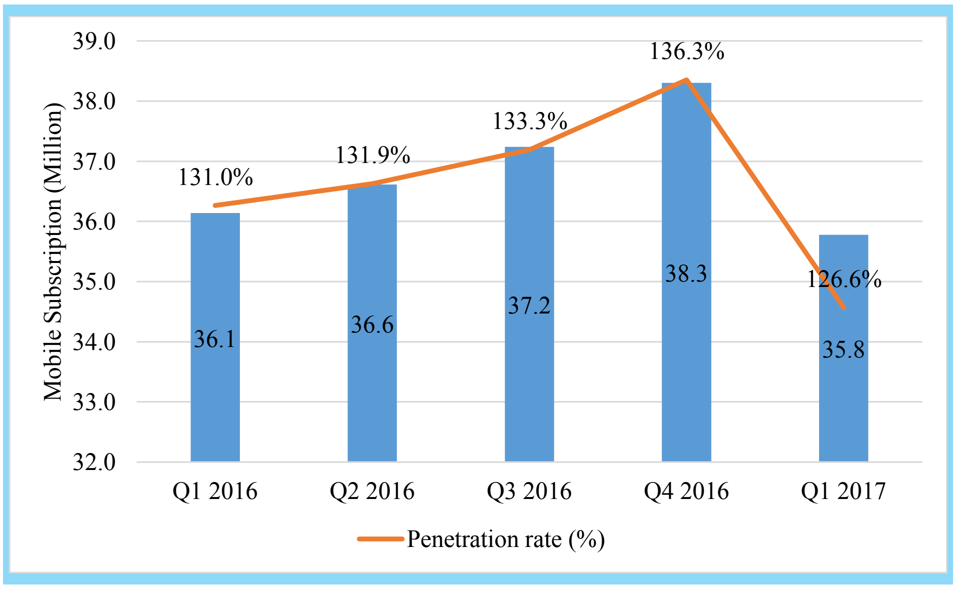
Mobile voice subscriptions at the end of the first quarter of 2017 decreased (6.59%) from 38.3 million in the fourth quarter of 2016 to 35.8 million (Table 1). Annual growth in subscription also decreased by 0.99% from 36.1 million in the first quarter of 2016 to 35.8 million at the end of the first quarter of 2017. This is the first time mobile voice subscription has decreased since 1992. Consequently, penetration rate at the end of the quarter also decreased from 136.3% in the previous quarter to 126.6% (Figure 1). Net additions in mobile subscriptions dropped by 2.5 million during the quarter under review compared to an increase of 1.1 million subscriptions recorded during the previous quarter.

Table 1: Mobile Voice Subscription and Penetration Rate

Subscription	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Mobile Subscription	36,138,706	36,613,987	37,239,720	38,305,078	35,780,667
Mobile Subscription Growth rate (%)	*3.23*	*1.32*	*1.71*	*2.86*	*-6.59*
Net additions	1,130,319	475,281	625,733	1,065,359	-2,524,411
Net additions Growth Rate (%)	*-34.96*	*-57.95*	*31.66*	*70.26*	*-336.95*
Population	27,594,136	27,760,032	27,926,926	28,094,823	28,263,729
Penetration rate (%)	*131.0*	*131.9*	*133.3*	*136.3*	*126.6*

Source: NCA; Mobile Network Operators, 2017

Figure 1: Mobile Subscription and Penetration Rate



Source: NCA; Mobile Network Operators, 2017

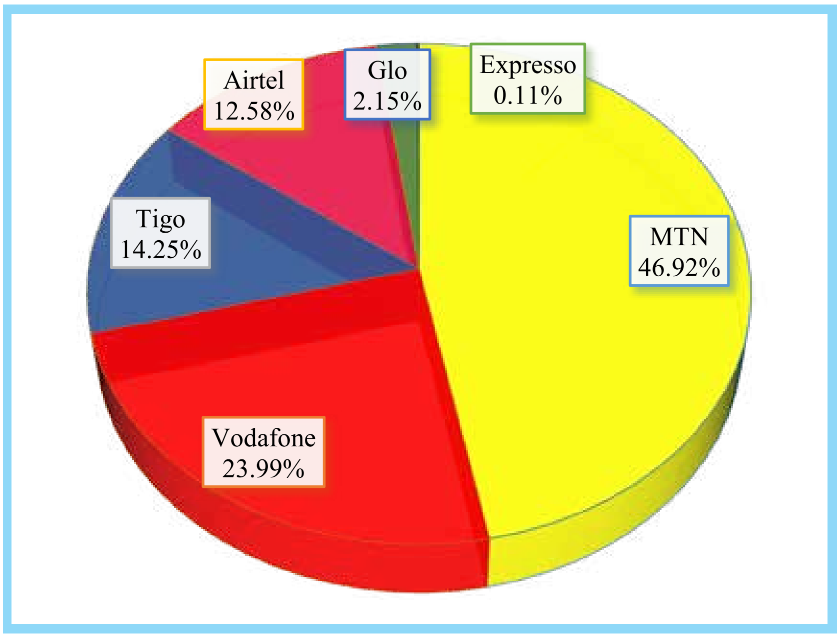
The estimated population is based on the projected annual growth rate of 2.5%, by the Ghana Statistical Service following the 2010 population and housing census

1.1.1 *Mobile Voice Subscription per Operator*

Mobile voice subscriptions for MTN decreased (12.99%) from 19.3 million in the fourth quarter of 2016 to 16.8 million at the end of the first of quarter of 2017 (Table 2). Vodafone's subscription increased (3.53%) from 8.3 million in the previous quarter to 8.5 million. Tigo's subscription reduced (4.51%) from 5.3 million in the fourth quarter of 2016 to 5.1 million in the first quarter of 2017. Airtel's subscription also declined by 1.96% from 4.6 million the fourth quarter of 2016 to 4.5 million at the end of the first quarter of 2017. Glo increased (10.69%) its subscription to 769,621 at the end of the first quarter of 2017, up from 695,306 in the previous quarter (Table 2). Expresso ended the first quarter of 2017 with a subscription of 40,111 compared to the previous quarter's subscription of 93,599 representing a decrease of 57.15%.

Market share for MTN decreased to 46.92% from 50.37% in the previous quarter. Vodafone's share of the total subscription increased from 21.64% in the previous quarter to 23.99%. Although there was a reduction in Tigo and Airtel's subscriptions', their market shares increased from 13.94% and 11.99% in the previous quarter to 14.25% and 12.58% respectively. Market share for Glo increased from 1.82% to 2.15%, Expresso had the least market share of 0.11%. (Figure 2).

Figure 2: Mobile Voice Subscription Market Share (%) per Operator



Source: NCA; Mobile Network Operators, 2017

Table 2: Subscription and Market Share (%) per Operator

Mobile Network Operator		Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
MTN	Subscription	17,004,445	17,579,045	18,050,144	19,296,157	16,789,161
	Market Share (%)	47.05	48.01	48.47	50.37	46.92
Vodafone	Subscription	7,900,534	8,093,710	8,158,527	8,289,913	8,582,387
	Market Share (%)	21.86	22.11	21.91	21.64	23.99
Tigo	Subscription	5,062,304	5,261,454	5,402,668	5,339,052	5,098,480
	Market Share (%)	14.01	14.37	14.51	13.94	14.25
Airtel	Subscription	5,012,239	4,678,736	4,697,653	4,591,051	4,500,907
	Market Share (%)	13.87	12.78	12.61	11.99	12.58
Glo	Subscription	1,048,635	897,082	828,162	695,306	769,621
	Market Share (%)	2.90	2.45	2.22	1.82	2.15
Expresso	Subscription	110,549	103,960	102,566	93,599	40,111
	Market Share (%)	0.31	0.28	0.28	0.24	0.11
Total		36,138,706	36,613,987	37,239,720	38,305,078	35,780,667

Source: NCA; Mobile Network Operators, 2017

1.1.2 Prepaid and Post-paid Mobile Voice Subscription

Pre-paid subscriptions continue to dominate Ghana's mobile market, although it dropped by 2,526,362 (6.66%) with a market share of 98.91% at the end of the quarter under review (Table 3). Post-paid subscription increased from 386,455 in the fourth quarter of 2016 to 388,407 at the end of the first quarter of 2017 with an increase in market share from 1.01% to 1.09% over the same period (Table 3).

Table 3: Prepaid and Post-paid Voice Subscription

Subscription		Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Prepaid	Subscription	35,923,390	36,259,719	36,855,555	37,918,623	35,392,261
	Share (%)	*99.40*	*99.03*	*98.97*	*98.99*	*98.91*
Post-paid	Subscription	215,316	354,268	384,164	386,455	388,407
	Share (%)	*0.60*	*0.97*	*1.03*	*1.01*	*1.09*
Total mobile subscription		36,138,706	36,613,987	37,239,720	38,305,078	35,780,667

Source: NCA; Mobile Network Operators, 2017

1.2 Mobile Voice Traffic (Domestic)

During the quarter under review, mobile voice traffic increased by 2.95% from 13.16 billion minutes in the fourth quarter of 2016 to 13.54 billion minutes at the end of the first quarter of 2017. Year-on-year mobile voice traffic also increased (9.60%) to 13.54 billion minutes at the end of the first quarter of 2017, up from 12.36 billion minutes in the first quarter of 2016 (Figure 3).

On-net traffic grew by 4.51% quarter-on-quarter from 10.48 billion minutes in the previous quarter to 10.96 billion minutes at the end of the first quarter of 2016. Year-year on-net traffic also increased by 12.75% from 9.72 billion minutes in the previous year to 10.96 billion minutes at the end of the first quarter of 2017 (Table 4).

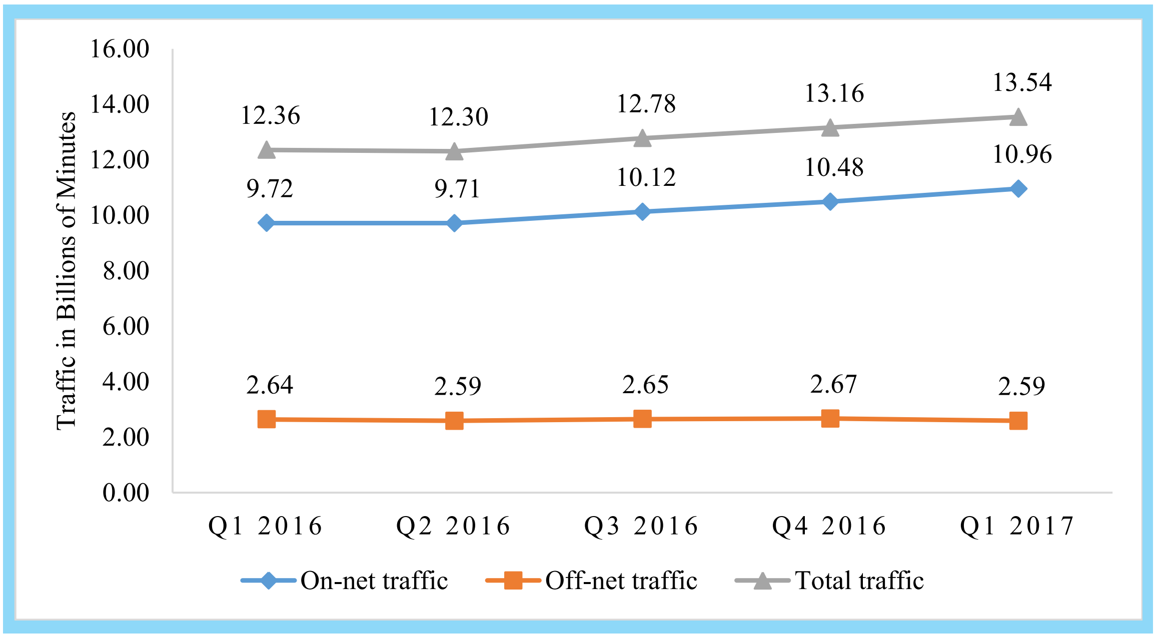
Off-net traffic dropped by 3.16% from 2.67 billion minutes in the fourth quarter of 2016 to 2.59 billion minutes at the end of the first quarter of 2017. This same downward trend was observed in the year-on-year off-net traffic, which dropped by 1.99% from 2.64 billion minutes in the first quarter of 2016 to 2.59 billion minutes at the end of the first quarter of 2017 (Table 4).

Table 4: Mobile Voice Traffic (Domestic)

Traffic	**Q1 2016**	**Q2 2016**	**Q3 2016**	Q4 2016	Q1 2017
Off-net traffic					
Traffic	2,639,857,946	2,588,294,623	2,652,712,749	2,671,763,781	2,587,441,912
Share (%)	21.36	21.04	20.76	20.31	19.10
Growth (%)	-1.14	-1.95	2.49	0.72	-3.16
On-net traffic					
Traffic	9,717,444,820	9,710,683,731	10,122,604,500	10,483,435,828	10,956,196,789
Share (%)	78.64	78.96	79.24	79.69	80.90
Growth (%)	8.52	-0.07	4.24	3.56	4.51
Total traffic	12,357,302,766	12,298,978,355	12,775,317,248	13,155,199,609	13,543,638,701

Source: NCA; Mobile Network Operators, 2017

Figure 3: Mobile Voice Traffic (Domestic)

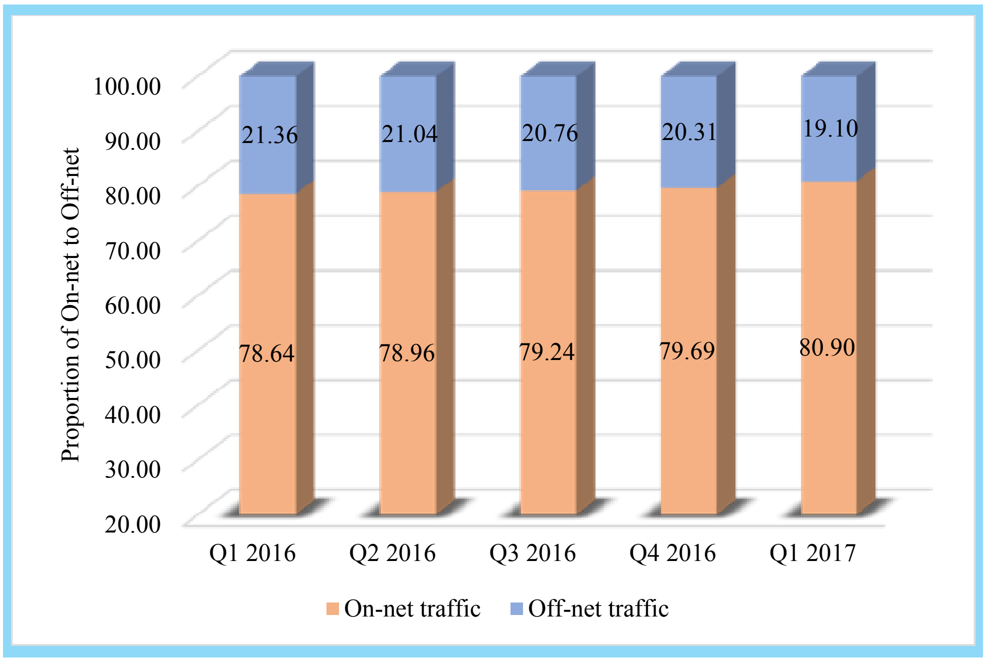


Source: NCA; Mobile Network Operators, 2017

1.2.1 Proportion of On-net and Off-net Voice Traffic

The proportion of on-net traffic to total voice traffic was recorded at 80.90 at the first quarter of 2017. Off-net traffic proportion to total voice traffic stood at 19.10 at the end of the first quarter of 2017. Share of on-net traffic has been increasing for the past five quarters while off-net traffic has been decreasing over the same period (Figure 4).

Figure 4: Proportion of On-net and Off-net Voice Traffic



Source: NCA; Mobile Network Operators, 2017

1.2.2 Distribution of mobile off-net traffic between mobile and fixed networks

Quarter-on-quarter mobile to mobile off-net traffic decreased (3.18%) from 2.67 billion minutes in the fourth quarter of 2016 to 2.58 billion minutes in the first quarter of 2017 with a share of 99.75%. Year-on-year mobile to mobile off-net traffic also decreased by 1.77% from 2.63 billion minutes in the first quarter of 2016 to 2.58 billion minutes at the end of the first quarter of 2017 (Table 5).

Mobile to fixed off-net traffic increased by 7.84% quarter-on-quarter from 5.95 million minutes to 6.42 million minutes with a share of 0.25%. Year-on-year mobile to fixed off-net traffic however decrease by 47.79% from 12.29 million minutes in the first quarter of 2016 to 6.42 million minutes in the first quarter of 2017 (Table 5).

Table 5: Mobile Off-net Traffic Distribution between Mobile and Fixed Networks

Breakdown of Off-net Traffic	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Mobile to Mobile Networks Off-net Traffic					
Traffic	2,627,568,306	2,577,957,526	2,646,830,836	2,665,813,679	2,581,025,238
Share (%)	99.53	99.60	99.78	99.78	99.75
Growth (%)	-1.15	-1.89	2.67	0.72	-3.18
Mobile to Fixed Networks Off-net Traffic					
Traffic	12,289,640	10,337,098	5,881,912	5,950,102	6,416,673
Share (%)	0.47	0.40	0.22	0.22	0.25
Growth (%)	0.65	-15.89	-43.10	1.16	7.84
Total Off-net Traffic	2,639,857,946	2,588,294,623	2,652,712,748	2,671,763,781	2,587,441,912

Source: NCA; Mobile Network Operators, 2017

1.2.3 Minutes of Use (MoU)

Average minutes of use per subscription stood at 119.4 minutes in the first quarter of 2017 up from 115.8 minutes in the fourth quarter of 2016 with an increase of 3.08% (Figure 5). Year-on-year minutes of use also increased (3.61%) from 115.2 minutes in the first quarter of 2016 to 119.4 minutes in the first quarter of 2017. Minutes of use increased by 3.6 minutes and 4.2 minutes' quarter-on-quarter and year-on-year respectively (Table 6).

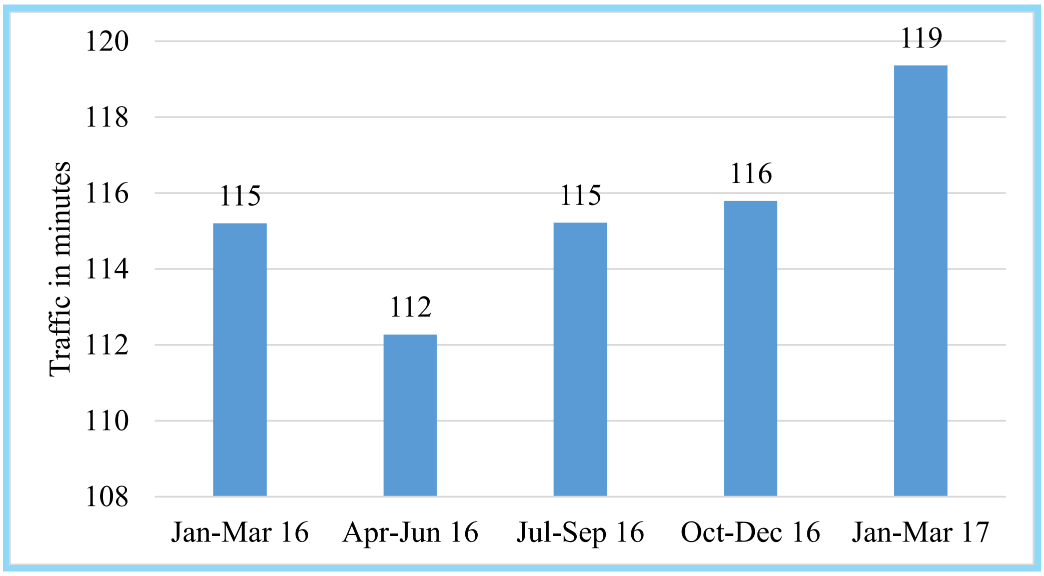
Table 6: Mobile Voice Traffic Minutes of Use (MoU) per Subscription

Traffic	Jan-Mar 16	Apr-Jun 16	Jul-Sep 16	Oct-Dec 16	Jan-Mar 17
Total mobile traffic (Minutes)	4,119,100,922	4,099,659,452	4,258,439,083	4,385,066,536	4,514,546,234
Mobile subscription	35,759,076	36,514,566	36,963,850	37,869,062	37,946,583
Minutes of Use (MoU) per Subscription	115.2	112.3	115.2	115.8	119.4
MoU growth rate (%)	2.36	-2.54	2.62	0.52	**3.08**

Source: NCA; Mobile Network Operators, 2017

Minutes of use per subscription is calculated by dividing the total average volume of traffic for that quarter with the total average subscription for that quarter

Figure 5: Mobile Voice Traffic Minutes of Use (MoU) per Subscription



Source: NCA; Mobile Network Operators, 2017

1.3 International Traffic

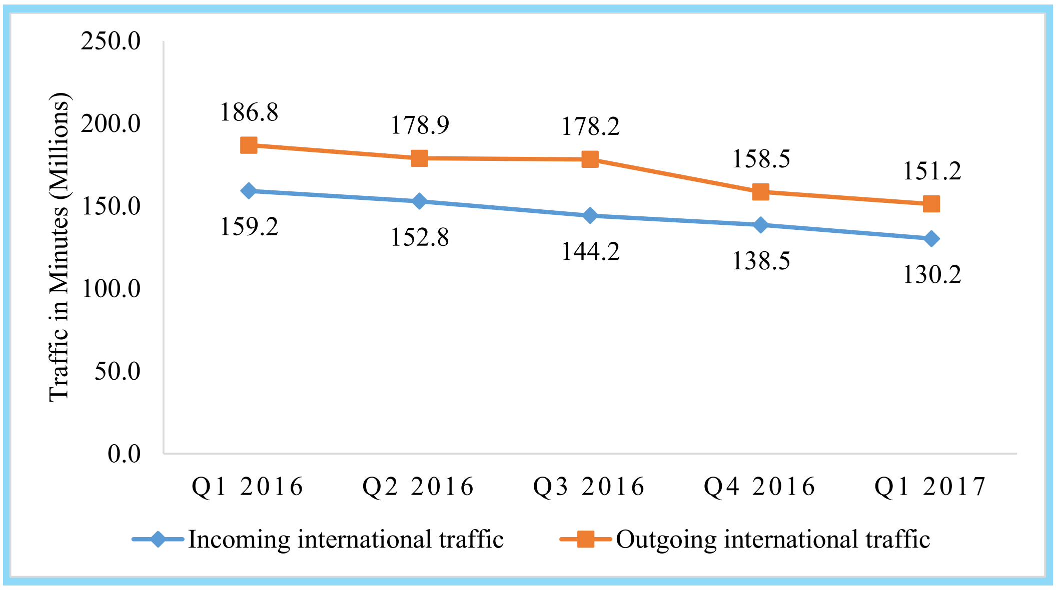
International incoming and outgoing voice traffic have dropped for the last five consecutive quarters. International incoming traffic dropped by 6.04% quarter-on-quarter from 138.5 million minutes to 130.2 million minutes (Table 7). Year-on-year incoming international traffic also dropped by 18.25%. International outgoing traffic dropped by 4.64% from 158.5 million minutes in the fourth quarter of 2016 to 151.2 million minutes at the end of the first quarter of 2017. Year-on-year outgoing international traffic also decreased by 19.07% from 186.8 million minutes to 151.2 million minutes.

Table 7: International Traffic

Traffic	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Incoming international traffic					
Traffic	159,200,257	152,830,342	144,175,704	138,515,521	130,152,496
Growth (%)	*-7.32*	*-4.00*	*-5.66*	*-3.93*	*-6.04*
Outgoing international traffic					
Traffic	186,798,787	178,879,037	178,203,087	158,524,688	151,173,654
Growth (%)	*-10.17*	*-4.24*	*-0.38*	*-11.04*	*-4.64*

Source: NCA; Mobile Network Operators, 2017

Figure 6: International Traffic



Source: NCA; Mobile Network Operators, 2017

1.4 Short Messages Service (SMS) per Operator

The telecommunication sector registered a positive development in SMS services. Total volume of SMS counts increased (3.91%) to 398 million at the end of the first quarter of 2017 up from 383 million in the previous quarter. Year-on-year SMS counts similarly increased (3.36%) from 385 million in the first quarter of 2016 to 398 million at the end of the first quarter of 2017 (Figure 7).

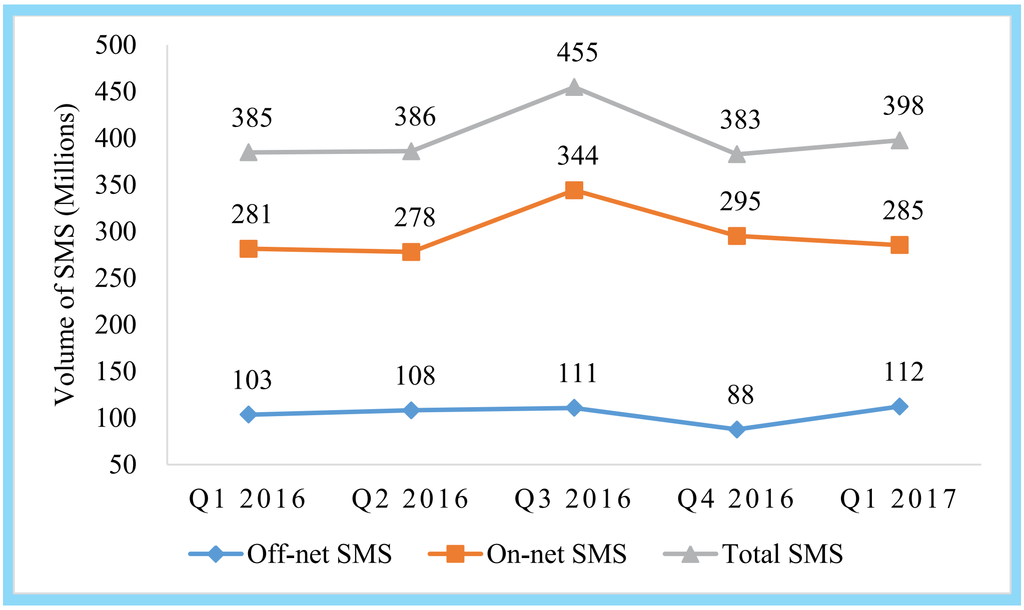
MTN registered 181 million messages on their network at the end of the first quarter of 2017 from 171 million in the fourth quarter of 2016 with a market share of 45.54%. Vodafone recorded 107 million messages during the quarter under review up from 85 million messages in the previous quarter with a market share of 26.91%. Tigo recorded a decrease in the number of messages during the first quarter of 2017 from 92 million to 83 million with a share of 20.80%. Airtel had a decrease in the total volume of SMS from 33 million in the previous quarter to 25 million messages at the end of first quarter 2017 and a share of 6.31%. Glo registered the smallest share (0.44%) with the number of its messages decreasing from 1.8 million in the fourth quarter of 2016 to 1.7 million at the end of the first quarter of 2017 (Table 8). Expresso did not submit information on SMS to the NCA during the period under review.

Table 8: Total Number of SMS per Mobile Network Operator

Mobile Operators	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
	Off-net SMS				
MTN	34,741,293	36,216,847	41,365,427	38,464,815	35,866,792
Vodafone	23,684,812	25,410,863	27,529,698	9,789,941	43,829,131
Tigo	26,403,487	20,458,520	23,146,290	19,079,594	17,733,576
Airtel	16,431,646	23,994,337	17,008,972	18,703,069	13,355,902
Glo	2,120,708	2,002,469	1,662,244	1,511,808	1,483,370
Expresso	8,062	-	-	-	-
Total	**103,390,008**	**108,083,036**	**110,712,631**	**87,549,227**	**112,268,771**
	On-net SMS				
MTN	93,791,420	112,089,090	127,386,287	132,876,086	145,180,286
Vodafone	88,531,025	84,439,040	96,173,719	74,721,854	63,165,825
Tigo	89,484,263	65,019,211	100,986,018	72,610,909	64,938,743
Airtel	9,027,249	16,078,366	19,064,329	14,551,296	11,749,566
Glo	418,743	290,174	398,718	298,753	252,027
Expresso	-	-	-	-	-
Total	**281,252,700**	**277,915,881**	**344,009,071**	**295,058,898**	**285,286,447**
	Total SMS				
MTN	128,532,713	148,305,937	168,751,714	171,340,901	181,047,078
Vodafone	112,215,837	109,849,903	123,703,417	84,511,795	106,994,956
Tigo	115,887,750	85,477,731	124,132,308	91,690,503	82,672,319
Airtel	25,458,895	40,072,703	36,073,301	33,254,365	25,105,468
Glo	2,539,451	2,292,643	2,060,962	1,810,561	1,735,397
Expresso	8,062	-	-	-	-
Total	**384,642,708**	**385,998,917**	**454,721,702**	**382,608,125**	**397,555,218**

Source: NCA; Mobile Network Operators, 2017

Figure 7: Total Number of SMS

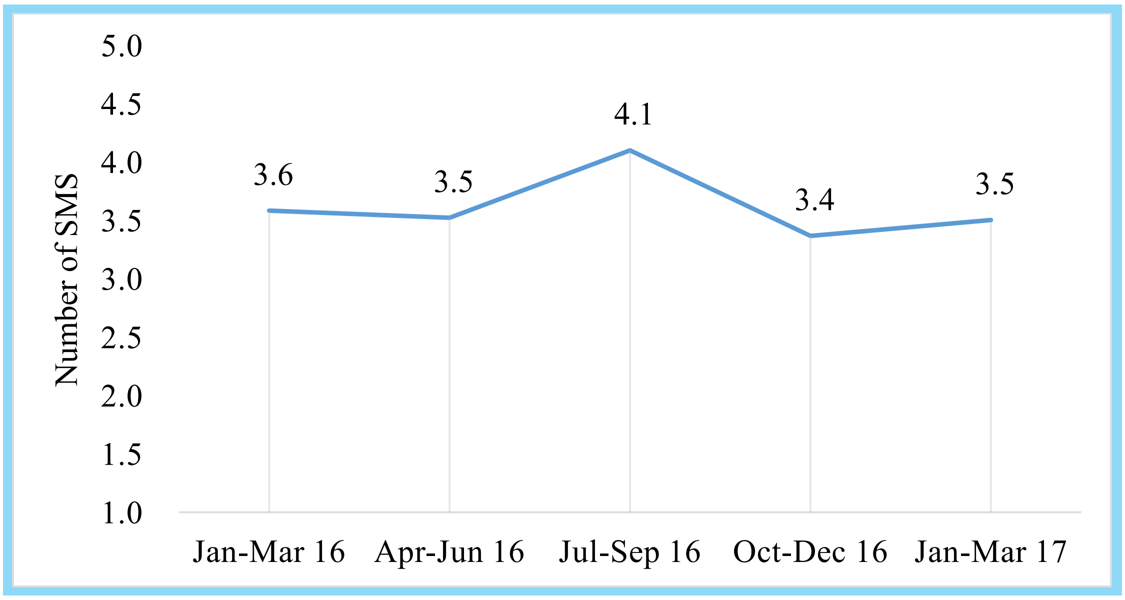


Source: NCA; Mobile Network Operators, 2017

1.4.1 Average SMS per Subscription

Average SMS sent or received per subscription during the quarter under review increased by 4.06% from 3.4 SMS per subscription to 3.5 SMS per subscription quarter-on-quarter. However it decreased (2.22%) from 3.6 SMS per subscription to 3.5 SMS per subscription year-on-year (Figure 8).

Figure 8: Average SMS per Subscription



Source: NCA; Mobile Network Operators, 2017

This is calculated by dividing the total average volume of SMS for the quarter with the total average mobile subscription for that quarter

1.5 Mobile Telecommunications Service Tariffs

The average default tariffs remained unchanged for on-net calls, off-net mobile calls, On-net SMS and off-net SMS at the end of the first quarter of 2017. Tariff for mobile data decreased by 1 pesewa each (Table 9). This is attributed to the reduction of data tariff for Glo, from 12 pesewas in January to 3 pesewas in the subsequent months.

Table 9: Average Tariff per Service (GHp)

Tariff	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Average on-net mobile tariff	11	11	11	12	12
Average off-net mobile tariff	13	13	13	13	13
Average on-net SMS tariff	5	5	5	5	5
Average off-net SMS tariff	6	6	6	6	6
Average data/Mb tariff	11	11	12	13	12

Source: NCA; Mobile Network Operators, 2017

1.6 Mobile Data Subscription and Penetration Rate (%)

Mobile data subscription stood at 21.4 million at the end of the first quarter of 2017 up from 19.6 million in the previous quarter indicating a growth of 3.77% (Figure 9). Year-on-year data subscription also increased (8.93%) from 18.7 million in the first quarter of 2016 to 21.4 million at the end of the first quarter of 2017. Net additions increased from 310,913 to 1,777,326 quarter-on-quarter. Data penetration also increased from 69.91% in the previous quarter to 75.78% at the end of the first quarter of 2017 (Table 10).

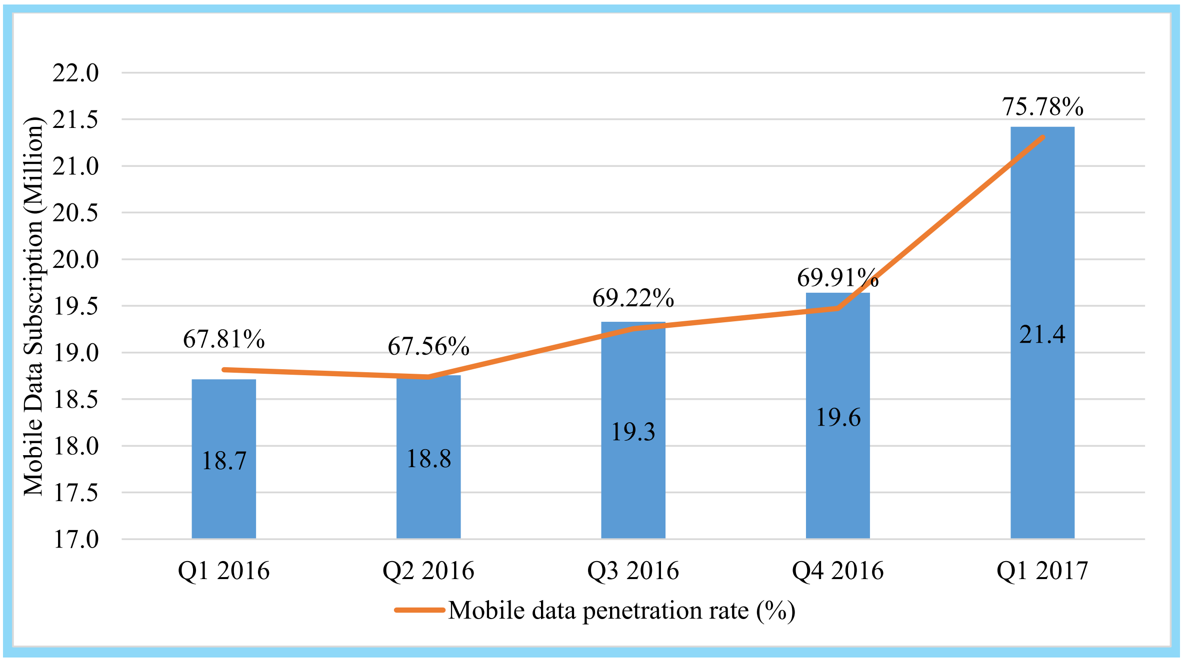
These are subscribers that access the internet through a portable modem, mobile phone, tablets, USB wireless modem, MiFi, Dongles and other mobile devices with source of internet being Mobile network Operator.

Table 10: Mobile Data Subscription and Penetration

Subscription	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Mobile data subscription	18,711,835	18,755,928	19,331,239	19,642,152	21,419,477
Data Subscription Growth Rate (%)	*3.77*	*0.24*	*3.07*	*1.61*	*9.05*
Net Additions	680,647	44,092	575,311	310,913	1,777,326
Net Additions Growth Rate (%)	*-6.41*	*-93.52*	*1204.78*	*-45.96*	*471.65*
Population	27,594,136	27,760,032	27,926,926	28,094,823	28,263,729
Mobile data penetration rate (%)	*67.81*	*67.56*	*69.22*	*69.91*	*75.78*

Source: NCA; Mobile Network Operators, 2017

Figure 8: Mobile Data Subscription and Penetration



Source: NCA; Mobile Network Operators, 2017

1.6.1 Mobile Data Prepaid and Post-paid Subscriptions

Prepaid mobile data subscription increased from 19.5 million in the fourth quarter of 2016 to 21.2 million at the end of the first quarter of 2017. Market share for prepaid subscriptions increased to 99.14% in the first quarter of 2017. Post-paid data subscription increased from 178,323 to 184,861 quarter-on- quarter but decreased its market share to 0.86% (Table 11).

Table 11: Mobile Data Prepaid and Post-paid Subscriptions

Mobile Data Subscription		**Q1 2016**	**Q2 2016**	**Q3 2016**	**Q4 2016**	**Q1 2017**
Prepaid	Subscription	18,586,792	18,607,389	19,167,447	19,463,829	21,234,616
	Share (%)	*99.33*	*99.21*	*99.15*	*99.09*	*99.14*
Post-paid	Subscription	125,043	148,539	163,792	178,323	184,861
	Share (%)	*0.67*	*0.79*	*0.85*	*0.91*	*0.86*
Total mobile data subscription		18,711,835	18,755,928	19,331,239	19,642,152	21,419,477

Source: NCA; Mobile Network Operators, 2017

1.6.2 *Mobile Data Subscription per Operator*

MTN continues to hold the largest share of the mobile data subscription with 11.9 million subscriptions (55.57%) followed by Vodafone, with 3.7 million subscriptions (17.21%). Airtel is the third largest operator with 2.8 subscriptions (13.08%) and Tigo had a total subscription of 2.7 million (12.48%). Glo ended the quarter with subscriptions of 263,919 (1.23%). Expresso had the least mobile data subscriptions of 17,501 (0.08%) as noted in Table 12.

Table 12: Mobile Data Subscription per Operator

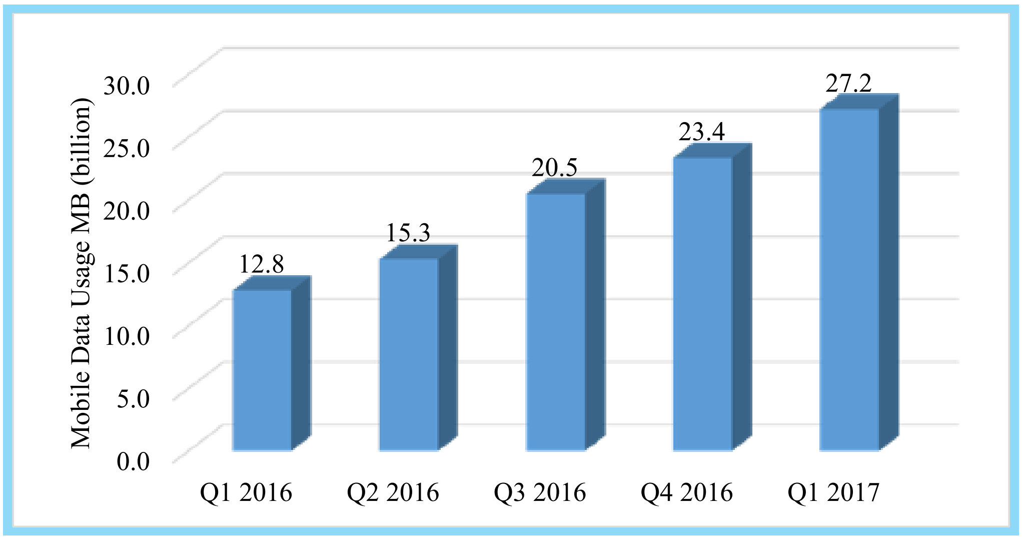
Mobile Network Operator		Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
MTN	Subscription	9,066,405	9,369,407	9,745,986	10,226,520	11,903,262
	Market Share (%)	*48.45*	*49.95*	*50.42*	*52.06*	*55.57*
Vodafone	Subscription	3,390,276	3,271,790	3,314,912	3,474,090	3,685,895
	Market Share (%)	*18.12*	*17.44*	*17.15*	*17.69*	*17.21*
Tigo	Subscription	2,707,411	2,716,023	2,872,375	2,725,489	2,746,803
	Market Share (%)	*14.47*	*14.48*	*14.86*	*13.88*	*12.82*
Airtel	Subscription	3,177,620	3,058,545	3,092,700	2,902,009	2,802,097
	Market Share (%)	*16.98*	*16.31*	*16.00*	*14.77*	*13.08*
Glo	Subscription	325,987	298,622	265,085	277,372	263,919
	Market Share (%)	*1.74*	*1.59*	*1.37*	*1.41*	*1.23*
Expresso	Subscription	44,136	41,541	40,181	36,672	17,501
	Market Share (%)	*0.24*	*0.22*	*0.21*	*0.19*	*0.08*
Total		**18,711,835**	**18,755,928**	**19,331,239**	**19,642,152**	**20,383,088**

Source: NCA; Mobile Network Operators, 2017

1.7 Mobile Data Traffic

Mobile data traffic has demonstrated a steady growth over the past five quarters. At the end of the first quarter of 2017 data traffic generated by the mobile network operators was 27.2 billion megabytes of data up from 23.4 billion megabytes in the fourth quarter of 2016, representing a 16.58% increase for this period (Figure 10). Year-on-year data traffic increased (112.84%) from 12.8 billion megabytes in the previous year to 27.2 billion megabytes at the end of the first quarter of 2017 (Figure 10).

Figure 10: Mobile Data Traffic in Millions of Gigabyte (GB)

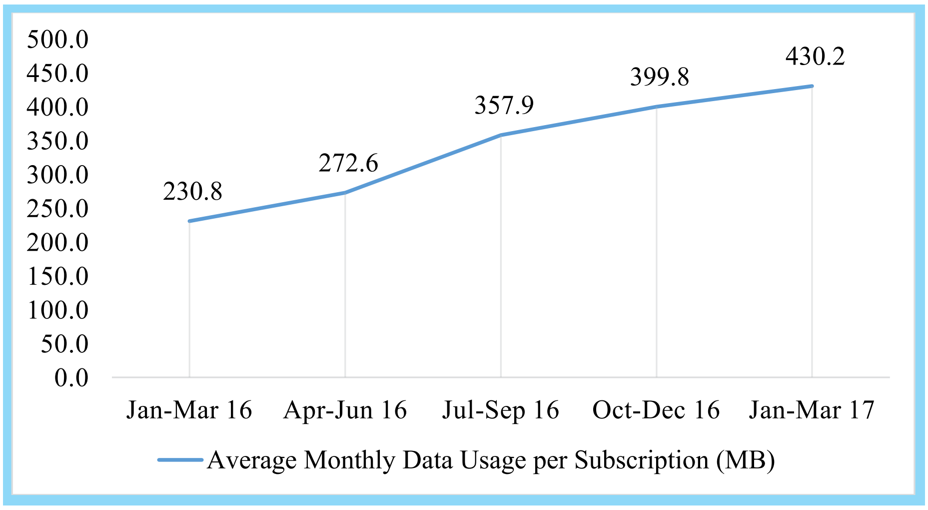


Source: NCA; Mobile Network Operators, 2017

1.7.1 Mobile Data Usage per Subscription (MB)

The average mobile data usage per subscription per month increased (7.61%) from 399.8 megabytes in the fourth quarter 2016 to 430.2 megabytes at the end of the first quarter of 2017 (Figure 11). Year-on-year data usage per subscription increased significantly (86.43%) from 230.8 megabytes per subscription in the previous year to 430.2 megabytes at the end of the first quarter of 2017 (Figure 11).

Figure 11: Mobile Data Usage per Subscription (MB)



Source: NCA; Mobile Network Operators, 2017

1.7.2 Mobile Data Traffic (MB) per Operator

MTN continues to be the market leader in terms of data traffic (49.80%), generating 13.57 billion megabytes of data during the quarter under review. Vodafone maintained the second spot (23.19%) with data traffic of 6.32 billion megabytes, followed by Airtel with data traffic of 4.01 billion megabytes (14.70%). Tigo had 2.14 billion megabytes of data usage representing 7.86% of the total data usage. Glo generated the least data usage of 1.21 billion megabytes with a market share of 4.45% (Table 13). Expresso did not submit any information on mobile data traffic for the last five quarters.

Table 13: Mobile Data Traffic (MB) per Operator

Mobile Operator	Data Usage	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
MTN	Data Usage	4,717,252,187	6,336,106,079	9,340,761,161	11,452,168,764	13,568,944,709
	Market Share (%)	36.85	41.41	45.54	49.00	49.80
Vodafone	Data Usage	3,948,747,547	3,999,614,833	4,511,206,628	5,331,524,507	6,318,942,994
	Market Share (%)	30.85	26.14	21.99	22.81	23.19
Tigo	Data Usage	1,153,432,274	1,341,481,285	1,577,325,549	1,782,818,988	2,140,747,503
	Market Share (%)	9.01	8.77	7.69	7.63	7.86
Airtel	Data Usage	2,948,327,941	3,531,086,717	4,639,955,063	3,712,037,914	4,005,712,369
	Market Share (%)	23.03	23.08	22.62	15.88	14.70
Glo	Data Usage	33,407,335	91,290,793	442,737,209	1,092,310,255	1,211,478,791
	Market Share (%)	0.26	0.01	2.16	4.67	4.45
Total Industry Traffic (MB)		**12,801,167,285**	**15,299,579,707**	**20,511,985,610**	**23,370,860,429**	**27,245,826,366**

Source: NCA; Mobile Network Operators, 2017

1.8 Mobile Number Portability (MNP)

Promoting and sustaining competition in the communications industry is at the core of the regulatory policies of the National Communications Authority (NCA). The mobile number portability (MNP) is one of such policies, introduced by the Authority to stimulate competition among mobile network operators and provide the flexibility for subscribers to switch among service providers.

This sub-section assesses the total number of mobile numbers ported averagely in each quarter. It also accounts for the quarter-on-quarter and year-on-year growth in mobile number portability in Ghana. Mobile number portability in Ghana started in July 2011, as such, the calendar year for the MNP begins in July and ends in June. The first quarter is from July to September, second quarter comprise October to December, third quarter spans from January to March and April to June is the fourth quarter.

The number of mobile numbers ported increased by (24.72%) during the first quarter under review, from 168,567 in the previous quarter (Oct, Nov, Dec 2016) to 210,235 in the first quarter (Jan, Feb, Mar 2017) (Table 14).

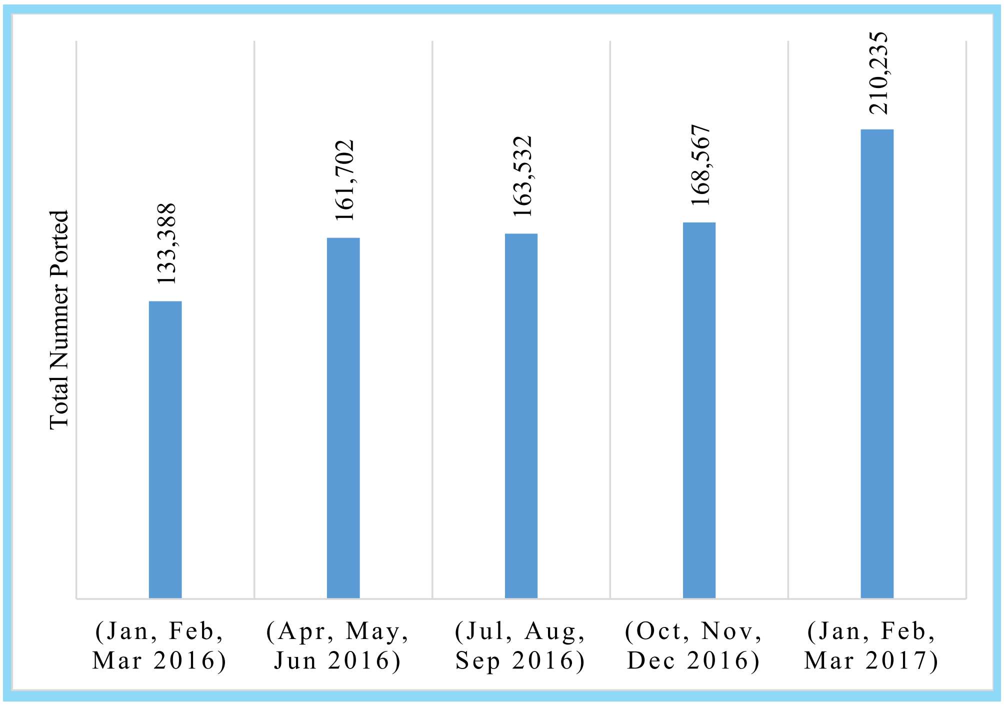
Similarly, the number of mobile numbers ported increased from 133,388 in the first quarter of year 2016 (Jan, Feb, Mar 2016) to 210,235 at the end of the first quarter (Jan, Feb, Mar 2017), representing a 57.61% increment year-on-year. The total number ported during the period under review represents 0.59% of the total mobile voice subscriptions for the same period.

Table 14: Mobile Number Portability and Growth Rate (%)

Porting	Jan-Mar 2016	Apr-Jun 2016	Jul-Sep 2016	Oct-Dec 2016	Jan-Mar 2017
Total Number Ported	133,388	161,702	163,532	168,567	210,235
Growth Rate (%)	4.48	21.23	1.13	3.08	24.72

Source: NCA; PortingXS; 2017

Figure 12: Mobile Number Portability



Source: NCA; PortingXS; 2017

2.0 BROADBAND WIRELESS ACCESS (BWA)

There are four operators who have license to provide broadband wireless services in Ghana, namely; Surfline, Broadband Home (BBH, formerly Zipnet), Blu Telecommunications and Goldkey. However, three out of the four currently in operation.

2.1 BWA Subscription and Penetration

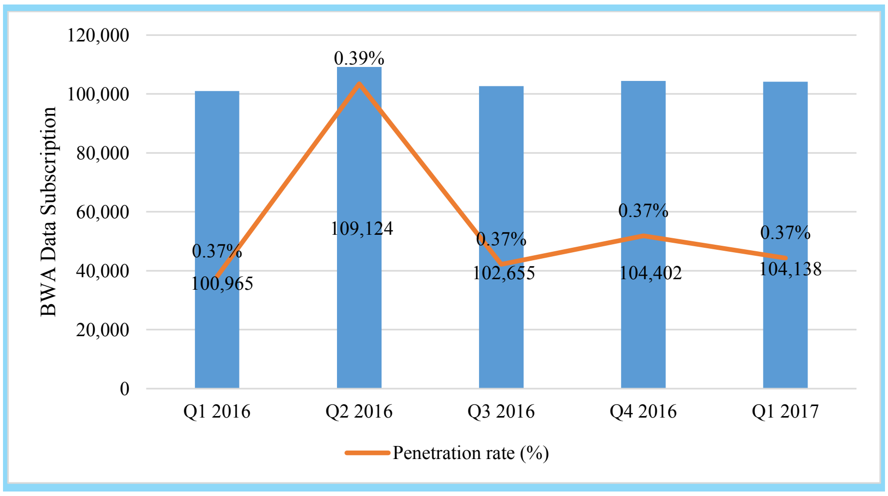
At the end of the first quarter of 2017, BWA subscription decreased from 104,402 in the previous quarter to 104,138, a drop of 0.25% compared to the 1.70% growth realised in the previous quarter (Figure 14). Year-on-year subscription however increased (3.14%) from 100,965 in the first quarter of 2016 to 104,138 at the end of first quarter of 2017. Penetration rate for Broadband Wireless Access remained at 0.37% at the end of the first quarter of 2017 (Table 15).

Table 15: BWA Data Subscription and Penetration

BWA Operator	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Subscription	100,965	109,124	102,655	104,402	104,138
Growth rate (%)	*11.9*	*8.08*	*-5.93*	*1.70*	*-0.25*
Net Additions	10,719	8,159	-6,469	1,747	-264
Population	27,594,136	27,760,032	27,926,926	28,094,823	28,263,729
Penetration rate (%)	*0.37*	*0.39*	*0.37*	*0.37*	*0.37*

Source: NCA; Broadband Wireless Access Operators, 2017

Figure 13: BWA Data Subscription and Penetration



Source: NCA; Broadband Wireless Access Operators, 2017

2.1.1 Subscription per Broadband Wireless Access (BWA) Operator

Subscription for the three broadband wireless access providers decreased at the end of the first quarter of 2017. Surfline's subscription decreased (0.17%) to 76,792 during the quarter under review but retained its position as the market leader with a share of 73.74%. Broadband Home subscription also declined by 0.08% with a market share of 25.33% and Blu Telecommunications subscription declined by 10.73% with a market share of 0.93% (Table 16).

Table 16: Subscription per Broadband Wireless Access (BWA) Operator

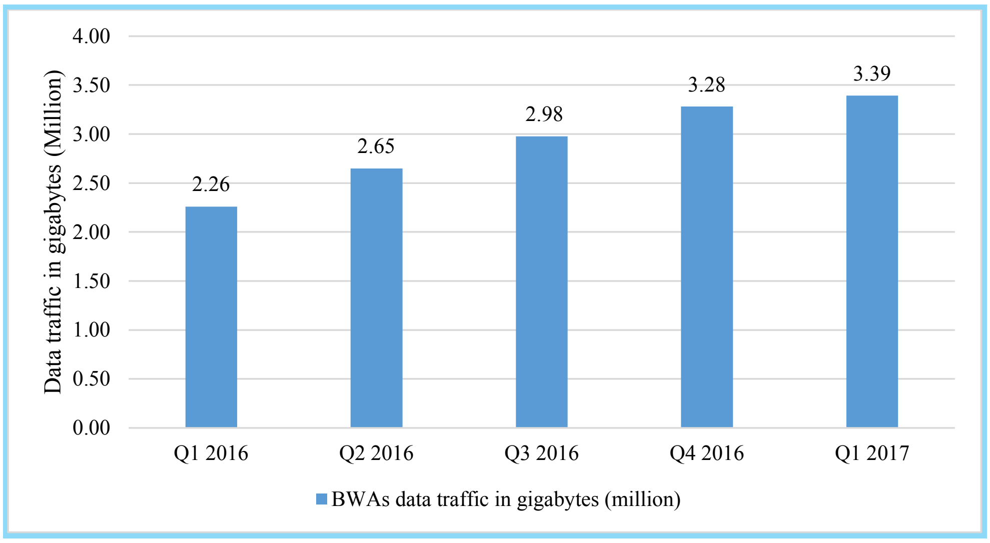
BWA operator		Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Surfline	Subscription	72,903	81,325	75,065	76,919	76,792
	Market share (%)	*72.21*	*74.53*	*73.12*	*73.68*	*73.74*
BBH	Subscription	26,666	26,536	26,423	26,402	26,381
	Market share (%)	*26.41*	*24.32*	*25.74*	*25.29*	*25.33*
BLU	Subscription	1,396	1,263	1,167	1,081	965
	Market share (%)	*1.38*	*1.16*	*1.14*	*1.04*	*0.93*
Industry total		**100,965**	**109,124**	**102,655**	**104,402**	**104,138**

Source: NCA; Broadband Wireless Access Operators, 2017

2.2 Broadband Wireless Access (BWA) Volume of Data Traffic

Broadband data traffic has been increasing over the last 5 quarters. BWA's data traffic increased (3.39%) from 3.28 million gigabytes of data in the previous quarter to 3.39 million gigabytes in the first quarter of 2017 (Figure 15). Year-on-year data traffic also increased (50.08%) from 2.26 million gigabytes of data in the previous year to 3.39 million gigabytes at the end of the first quarter of 2017.

Figure 14: BWA Data Usage in Gigabytes (millions)



Source: NCA; Broadband Wireless Access Operators, 2017

2.2.1 Volume of Broadband Data Traffic per Operator

During the quarter under review, Surfline's total volume of data traffic was 3,015,547 gigabytes representing 88.91% of the total volume of data traffic generated by the BWA's. BBH recorded the second highest volume of data traffic of 276,862 gigabytes (8.16%). Blu generated the least volume of data traffic of 99,135 gigabytes representing 2.92% of the total volume of data (Table 17).

Table 17: Data Traffic (GB) per Broadband Wireless Access (BWA) Operator

BWA operator		**Q1 2016**	**Q2 2016**	**Q3 2016**	**Q4 2016**	**Q1 2017**
Surfline	Data usage (GB)	1,851,102	2,253,167	2,564,837	2,902,870	3,015,547
	Market share (%)	*81.91*	*85.06*	*86.16*	*88.49*	*88.91*
BBH	Data usage (GB)	280,747	291,929	306,864	271,931	276,862
	Market share (%)	*12.42*	*11.02*	*10.31*	*8.29*	*8.16*
BLU	Data usage (GB)	127,966	103,879	104,983	105,556	99,135
	Market share (%)	*5.66*	*3.92*	*3.53*	*3.22*	*2.92*
Industry Total (GB)		**2,259,815**	**2,648,975**	**2,976,684**	**3,280,357**	**3,391,544**

Source: NCA; Broadband Wireless Access Operators, 2017

2.2.2 Monthly Data Usage per BWA Subscription

Data usage per subscription per month increased (5.66%) from 10.52 gigabytes in the previous quarter to 10.80 gigabytes in the first quarter of 2017 (Figure 16). Year-on-year data usage per subscription also increased by 37.41% from 7.86 gigabytes in the first quarter of 2016 to 10.80 gigabytes at the end of the first quarter of 2017.

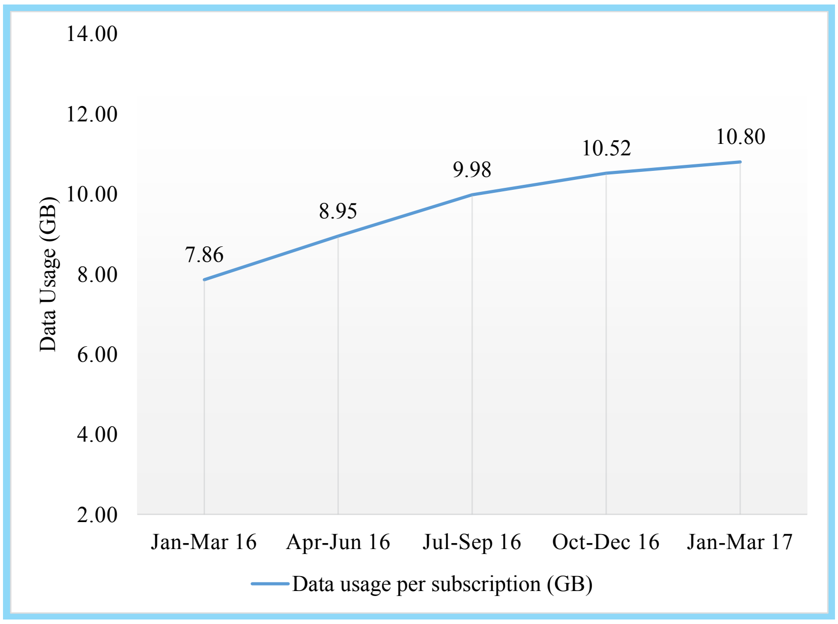
Table 18: Data Usage per BWA Subscription (GB)

BWA Operator	**Jan-Mar 16**	**Apr-Jun 16**	**Jul-Sep 16**	**Oct-Dec 16**	**Jan-Mar 17**
Volume of data traffic	753,272	882,992	992,228	1,093,452	1,130,515
Subscription	95,874	98,705	99,422	103,976	104,715
Data usage per subscription (GB)	7.86	8.95	9.98	10.52	10.80
Data usage per subscription (GB) Growth rate (%)	1.86	13.86	11.56	5.38	5.66

Source: NCA; Broadband Wireless Access Operators, 2017

BWA data usage per subscription is calculated by dividing the total average volume of BWA's traffic for the quarter with the total average of BWA subscription for that quarter

Figure 15: Data Usage per BWA Subscription (GB)



Source: NCA; Broadband Wireless Access Operators, 2017

3.0 FIXED NETWORK

License has been given to three fixed network operators by the National Communications Authority of which two are in operation (Vodafone and Airtel) and the remaining one (MTN) is yet to begin operation.

3.1 Fixed Network Voice Subscription and Penetration

During the quarter under review, total fixed network subscriptions increased (6.00%) to 266,587 up from 251,490 in the previous quarter. Year-on-year fixed subscription also increased by 3.11% from 258,536 in the first quarter of 2016 to 266,587 at the end of the first quarter of 2017. Fixed penetration rate increased from 0.90% to 0.94% quarter-on-quarter (Figure 17).

Vodafone subscription increased (6.27%) from 244,299 to 259,609 quarter-on-quarter and from 250,546 to 259,609 year-on-year (3.62%). Its market share also increased from 97.14% in the previous quarter to 97.38% at the end of the first quarter of 2017 (Table 19).

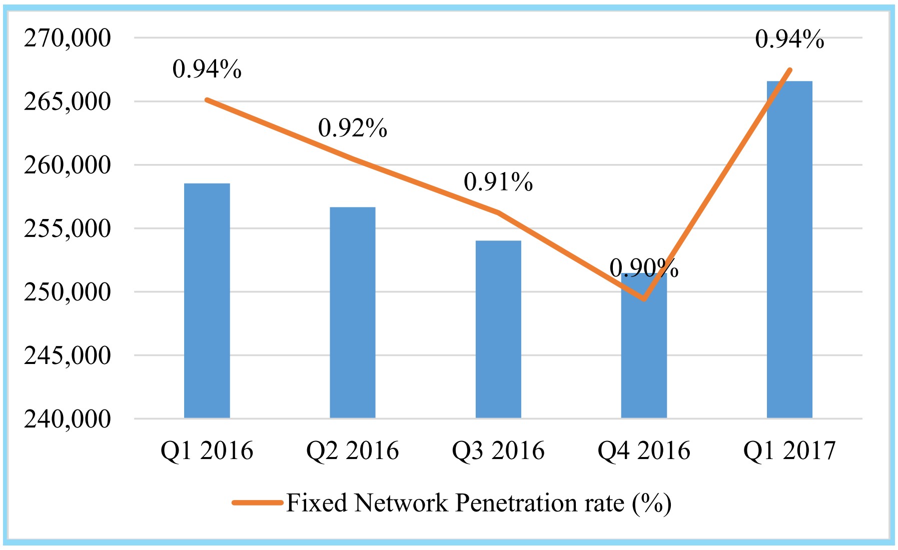
Airtel's subscription decreased by 2.96% from 7,191 in the fourth quarter of 2016 to 6,978 at the end of the first quarter of 2017. Year-on-year subscription decreased by 12.67%. Market share for Airtel declined from 2.86% to 2.62% (Table 19).

Table 19: Fixed Network Voice Subscription and penetration

Fixed Operator	Subscription	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Vodafone	Subscription	250,546	248,536	246,425	244,299	259,609
	Market share (%)	96.91	96.84	97.01	97.14	97.38
Airtel	Subscription	7,990	8,117	7,596	7,191	6,978
	Market share (%)	3.09	3.16	2.99	2.86	2.62
Total industry subscription		258,536	256,653	254,021	251,490	266,587
Population		27,594,136	27,760,032	27,815,552	28,094,823	28,263,729
Fixed network penetration rate (%)		0.94	0.92	0.91	0.90	0.94

Source: NCA; Fixed Network Operators, 2017

Figure 16: Fixed Network Voice Subscription and penetration



Source: NCA; Fixed Network Operators, 2017

3.2 Fixed Network Traffic

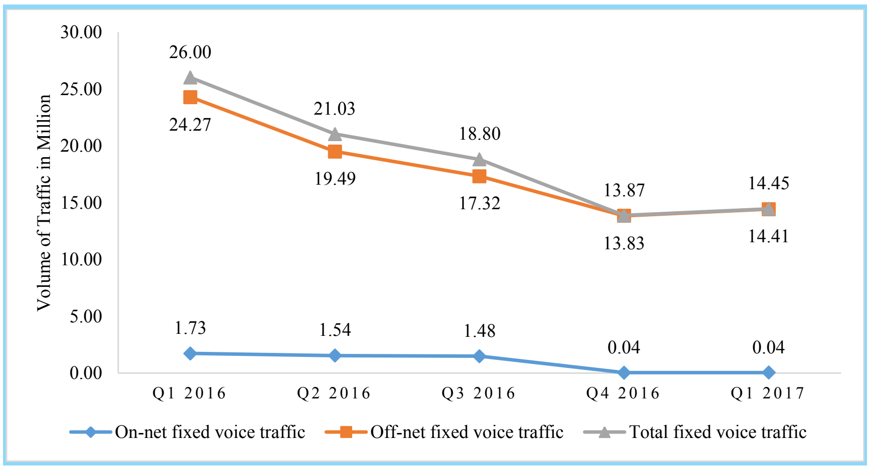
The volume of fixed network traffic registered a growth of 4.23% during the quarter under review to 14.45 million minutes up from 13.87 million minutes recorded during the previous quarter. Off-net (traffic from fixed network operator to both mobile and fixed operators) and On-net traffic increased by 4.23% and 7.03% respectively at the end of the period under review (Figure 18). It should be noted that on-net traffic for the last two quarters consist of data from Airtel only.

Table 20: Fixed Network Volume of Traffic in Minutes

Traffic	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
On-net fixed voice traffic	1,726,187	1,542,355	1,482,483	36,455	39,017
Off-net fixed voice traffic	24,272,057	19,487,240	17,321,284	13,830,301	14,414,674
Total fixed voice traffic	25,998,244	21,029,595	18,803,767	13,866,756	14,453,691

Source: NCA; Fixed Network Operators, 2017

Figure 17: Fixed Network Volume of Traffic in Minutes



Source: NCA; Fixed Network Operators, 2017

3.2.1 *Distribution of fixed off-net traffic between mobile and fixed networks*

Fixed to mobile network traffic grew by 4.28% to 14.33 million minutes during the quarter. However, fixed to fixed network traffic decreased (4.76) to 82,860 minutes during the quarter under review up from 87,005 minutes recorded during the preceding quarter (Table 21).

Table 21: Distribution fixed off-net traffic between mobile and fixed networks

Breakdown of Fixed Traffic (Minutes)	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Fixed to Mobile Networks Off-net Traffic					
Traffic	24,184,407	19,394,046	16,754,687	13,743,296	14,331,815
Share (%)	99.64	99.52	96.73	99.37	99.43
Growth (%)	-0.19	-19.81	-13.61	-17.97	4.28
Fixed to Fixed Networks Off-net Traffic					
Traffic	87,650	93,193	566,597	87,005	82,860
Share (%)	0.36	0.48	3.27	0.63	0.57
Growth (%)	0.07	6.32	507.98	-84.64	-4.76
Total Off-net Traffic	24,272,057	19,487,240	17,321,284	13,830,301	14,414,674

Source: NCA; Fixed Network Operators, 2017

3.2.2 *Fixed Networks Volume of Traffic per Operator (minutes)*

Airtel increased its on-net traffic by 7.03% from 36,455 minutes in the fourth quarter of 2016 to 39,017 minutes at the end of the first quarter of 2017, whereas year-on-year on-net traffic decreased (7.03%) from 41,968 minutes to 39,017 minutes. Off-net traffic increased by 5.71% and 8.12% quarter-on-quarter and year-on-year respectively (Table 22).

Vodafone off-net traffic similarly increased by 4.01% from 12.04 million minutes in the fourth quarter of 2016 to 12.52 million minutes at the end of the first quarter of 2017. Year-on-year off-net traffic however decreased by 44.40% from 22.52 million minutes in the first quarter of 2016 to 12.52 million minutes at the end of the first quarter of 2017. Vodafone did not submit information to NCA on on-net traffic for fixed network during the first quarter of 2017 (Table 22).

Table 22: Fixed Networks Volume of Traffic per Operator

Fixed network operator	Traffic	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
On-net traffic						
Vodafone	On-net traffic	1,684,219	1,494,630	1,445,594	-	-
	Market share (%)	*97.57*	*96.91*	*97.51*	-	-
Airtel	On-net traffic	41,968	47,725	36,889	36,455	39,017
	Market share (%)	*2.43*	*3.09*	*2.49*	*100.00*	*100.00*
Total on-net traffic		1,726,187	1,542,355	1,482,483	36,455	39,017
Off-net traffic						
Vodafone	Off-net traffic	22,522,176	17,488,864	12,724,955	12,040,453	12,522,710
	Market share (%)	*92.79*	*89.75*	*73.46*	*87.06*	*86.87*
Airtel	Off-net traffic	1,749,881	1,998,376	4,596,329	1,789,847	1,891,964
	Market share (%)	*7.21*	*10.25*	*26.54*	*12.94*	*13.13*
Total off-net traffic		24,272,057	19,487,240	17,321,284	13,830,301	14,414,674
Total traffic						
Vodafone	Total traffic	24,206,396	18,983,494	14,170,550	12,040,453	12,522,710
	Market share (%)	*0.93*	*0.90*	*0.75*	*86.83*	*86.64*
Airtel	Total traffic	1,791,849	2,046,101	4,633,218	1,826,302	1,930,981
	Market share (%)	*0.07*	*0.10*	*0.25*	*13.17*	*13.36*
Total fixed network traffic		**25,998,245**	**21,029,595**	**18,803,768**	**13,866,756**	**14,453,691**

Source: NCA; Fixed Network Operators, 2017

3.3 Fixed Network Minutes of Use

Fixed network minutes of use per subscription increased from 18.28 minutes in the fourth quarter of 2016 to 18.37 minutes at the end of the first quarter of 2017 (Figure 19). Year-on-year minutes of use per subscription decreased (43.34%) from 32.42 minutes in the first quarter of 2016 to 18.37 minutes at the end of the first quarter of 2017 (Table 23).

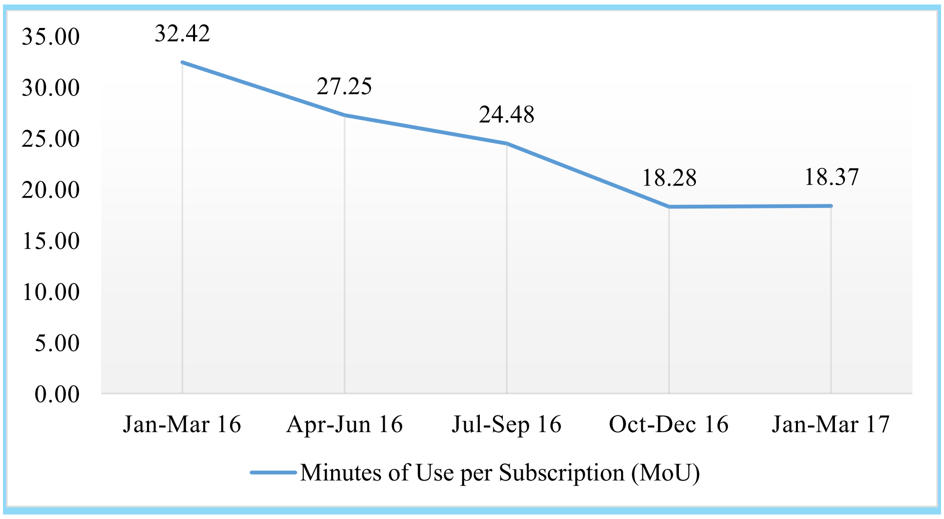
Fixed Network Minutes of use per subscription is calculated by dividing the total average volume of traffic for the quarter with the total average Fixed subscription for that quarter

Table 23: Fixed Network Minute of Use per Subscription

Traffic	Jan-Mar 16	Apr-Jun 16	Jul-Sep 16	Oct-Dec 16	Jan-Mar 17
Total Fixed Voice Traffic	8,666,082	7,009,865	6,267,923	4,622,252	4,817,897
Subscription	267,593	257,215	256,037	252,737	262,264
Minutes of Use per Subscription (MoU)	32.42	27.25	24.48	18.28	18.37
Minutes of Use per Subscription (MoU) Growth (%)	*2.60*	*-15.96*	*-10.16*	*-25.31*	*0.49*

Source: NCA; Fixed Network Operators, 2017

Figure 18: Fixed Network Minute of Use



Source: NCA; Fixed Network Operators, 2017

3.4 Fixed Data Subscription and Penetration

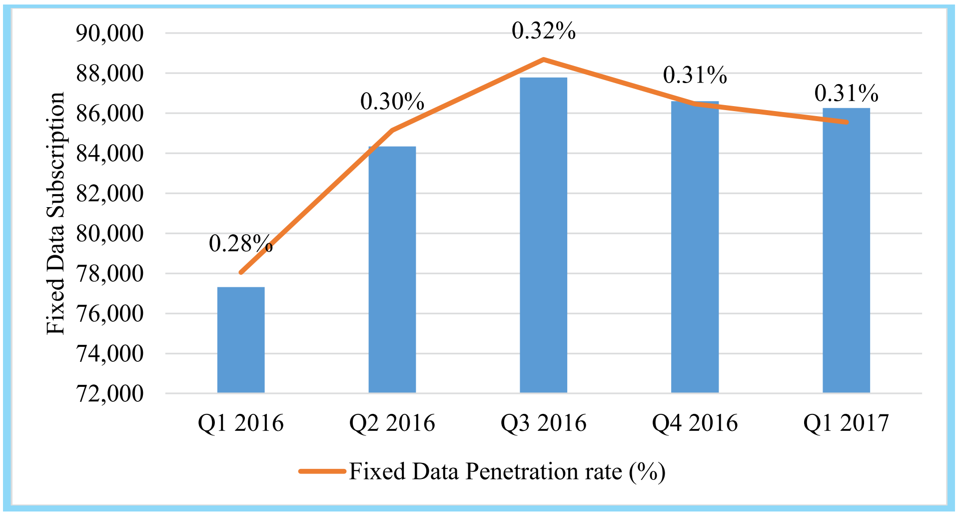
During the quarter under review fixed data subscription decreased (0.39%) from 86,596 in the previous quarter to 86,260. The year-on-year fixed data subscription however increased from 77,312 in the preceding year to 86,260 at the end of the first quarter of 2017. Fixed data penetration rate remained at 0.31% during the quarter under review (Table 24).

Table 24: Fixed Data Network Subscription and Penetration

Data subscription	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Fixed data subscription	77,312	84,343	87,789	86,596	86,260
Fixed data subscription growth rate (%)	2.96	9.09	4.09	-1.36	-0.39
Net Additions	2,220	7,031	3,446	-1,193	-336
Net Additions growth rate (%)	-60.83	216.71	-50.99	-134.62	-71.84
Population	27,594,136	27,760,032	27,815,552	28,094,823	28,263,729
Fixed Data penetration rate (%)	0.28	0.30	0.32	0.31	0.31

Source: NCA; Fixed Network Operators, 2017

Figure 19: Fixed Data Network Subscription and Penetration



Source: NCA; Fixed Network Operators, 2017

3.5 Fixed Network Data Subscription per Operator

Vodafone ended the first quarter of 2017 with a subscription of 84,903 representing 98.4% of the total fixed data subscription. Airtel's fixed data subscription declined at the end of the first quarter of 2017 to 1,357 (1.57% of total market share). Vodafone and Airtel quarter-on-quarter subscription decreased by 0.34% and 3.49% respectively. Year-on-year subscription for Vodafone grew by 12.10% whiles Airtel's subscription declined by 13.79% over the same period (Table 25).

Table 25: Fixed Network Data Subscription per Operator

Fixed network operator	Data subscription	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Vodafone	Data subscription	75,738	82,745	86,283	85,190	84,903
	Market share (%)	97.96	98.11	98.28	98.38	98.43
Airtel	Data subscription	1,574	1,598	1,506	1,406	1,357
	Market share (%)	2.04	1.89	1.72	1.62	1.57
Total fixed data subscription		**77,312**	**84,343**	**87,789**	**86,596**	**86,260**

Source: NCA; Fixed Network Operators, 2017

4.0 EQUIPMENT TYPE APPROVAL

Type Approval certification is granted to a product that meets a minimum set of regulatory, technical and safety requirements in Ghana. The main objective of type approval is to ensure that all electronic communications equipment that are used in Ghana comply with international standards that protect consumers from products that are hazardous and ensure that their operation do not affect in any way the normal functioning of other equipment or the health of people around the operational areas. Also in compliance with section 3(n) of the National Communications Authority Act of 2008, Act 769; and Sections 66 and 67 of the Electronics Communication Act, Act 775 of 2008, all communications equipment in Ghana should be certified by the Authority.

4.1 Total Number of Certificates Issued

The number of certificates issued by the Authority for various communications equipment at the end of the first quarter of 2017 was 101(Table 26).

Table 26: Total Number of Certificates Issued

Type approval	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
Total number of approval issued	73	62	98	118	101

Source: National Communications Authority, 2017

5.0 BROADCASTING

5.1 Authorised Frequency Modulation (FM) Radio Stations

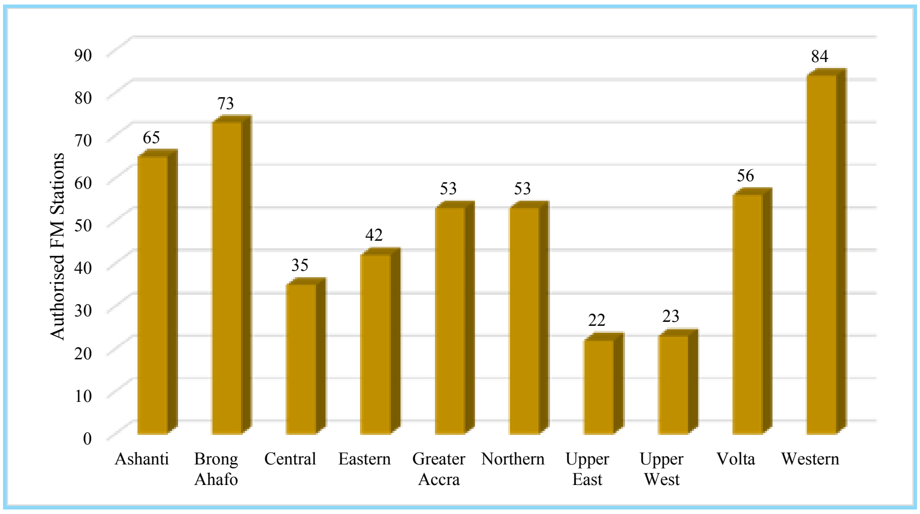
The total number of authorised Frequency Modulation (FM) radio stations in the first quarter of 2017 was 25, bringing the total number of authorised FM stations to 506, out of which 382 are operational. Central, Eastern and Greater Accra regions received no authorisation in the first quarter of 2017. The rest of the regions received at least one authorisation, with Brong- Ahafo having the highest number (6) of authorisations, followed by Northern region (5). Upper East and Volta regions had 4 authorisations each, Western received (3) authorisations, Ashanti with (2) authorisations and Upper West region with one (1) authorisation (Table 27). Two (2) of the newly authorised FM stations were for community services, one (1) for campus services and the rest (22) for commercial services (Table 28).

Table 27: Regional Distribution of FM Stations as at the end of Q1 2017

Regions	Authorised FM Stations			No. of FM Stations in Operation (Q1 2017)
	End of Q4 2016	Q1 2017	End of Q1 2017	
Ashanti	63	2	65	50
Brong Ahafo	67	6	73	61
Central	35	0	35	30
Eastern	42	0	42	37
Greater Accra	53	0	53	48
Northern	48	5	53	35
Upper East	18	4	22	12
Upper West	22	1	23	11
Volta	52	4	56	39
Western	81	3	84	59
TOTAL	**481**	**25**	**506**	**382**

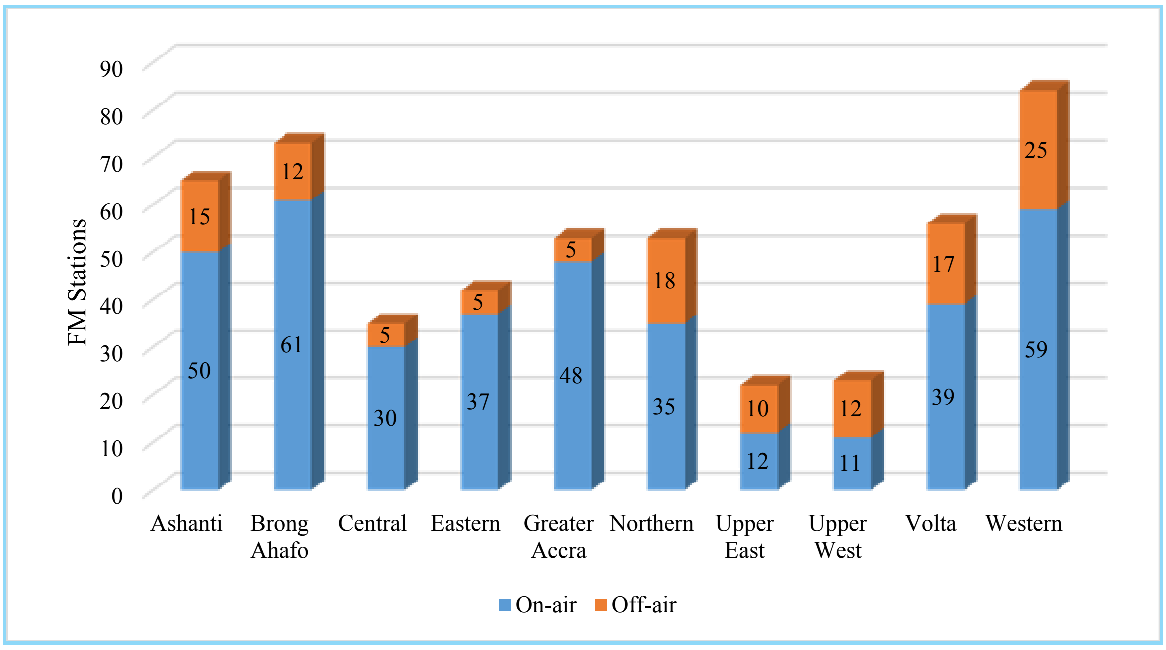
Source: National Communications Authority, 2017

Figure 20: Regional distribution of Authorised FM stations as at end of Q1 2017



Source: National Communications Authority, 2017

Figure 21: Regional distribution of On-air and Off-air FM stations as at end of Q1 2017



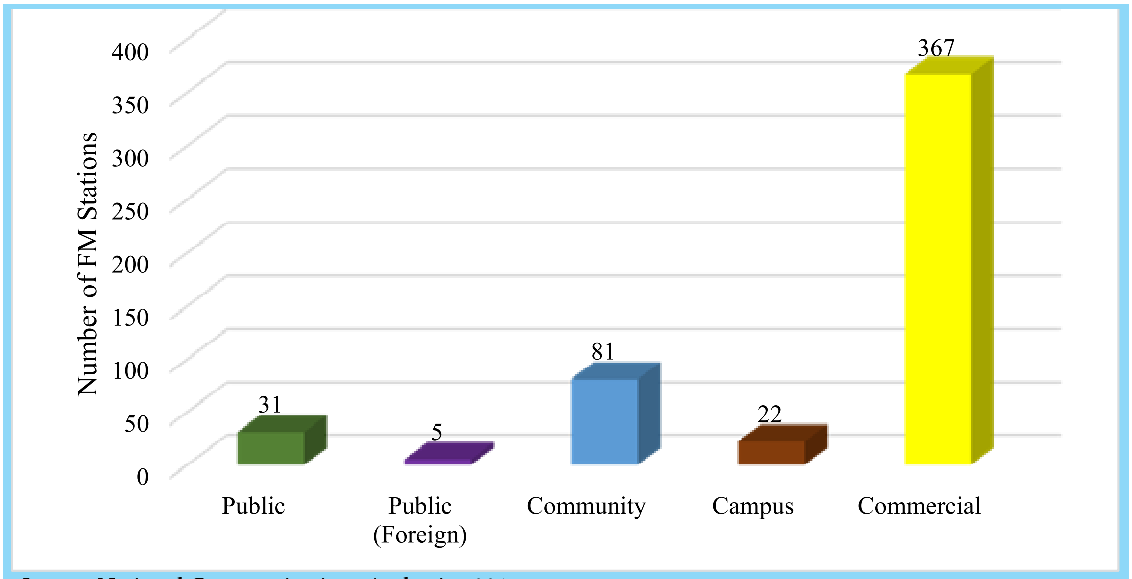
Source: National Communications Authority, 2017

Table 28: Regional Distribution of Authorised FM Stations by Purpose as at the end of Q1 2017

Name of Regions	Total no. Authorised	Public	Public (Foreign)	Community	Campus	Commercial
Ashanti	65	2	1	6	3	53
Brong Ahafo	73	3	-	6	3	61
Central	35	2	-	8	3	22
Eastern	42	2	-	6	1	33
Greater Accra	53	2	3	6	4	38
Northern	53	7	-	16	2	28
Upper East	22	2	-	8	1	11
Upper West	23	2	-	8	2	11
Volta	56	4	-	11	1	40
Western	84	5	1	6	2	70
Total	**506**	**31**	**5**	**81**	**22**	**367**

Source: National Communications Authority, 2017

Figure 22: Purpose of Authorised Radio Stations as at Q1 2017



Source: National Communications Authority, 2017

5.2 Authorised Television Stations

Six (6) new television stations received authorisations from the NCA during the first quarter of 2017, bringing the total number of authorised TV stations in Ghana to ninety-nine (99), out of which Fifty-one (51) TV stations are operational (Table 29). These six newly authorised TV stations are all Satellite Television Broadcasting (Free-To-Air Direct-To-Home Single Channel).

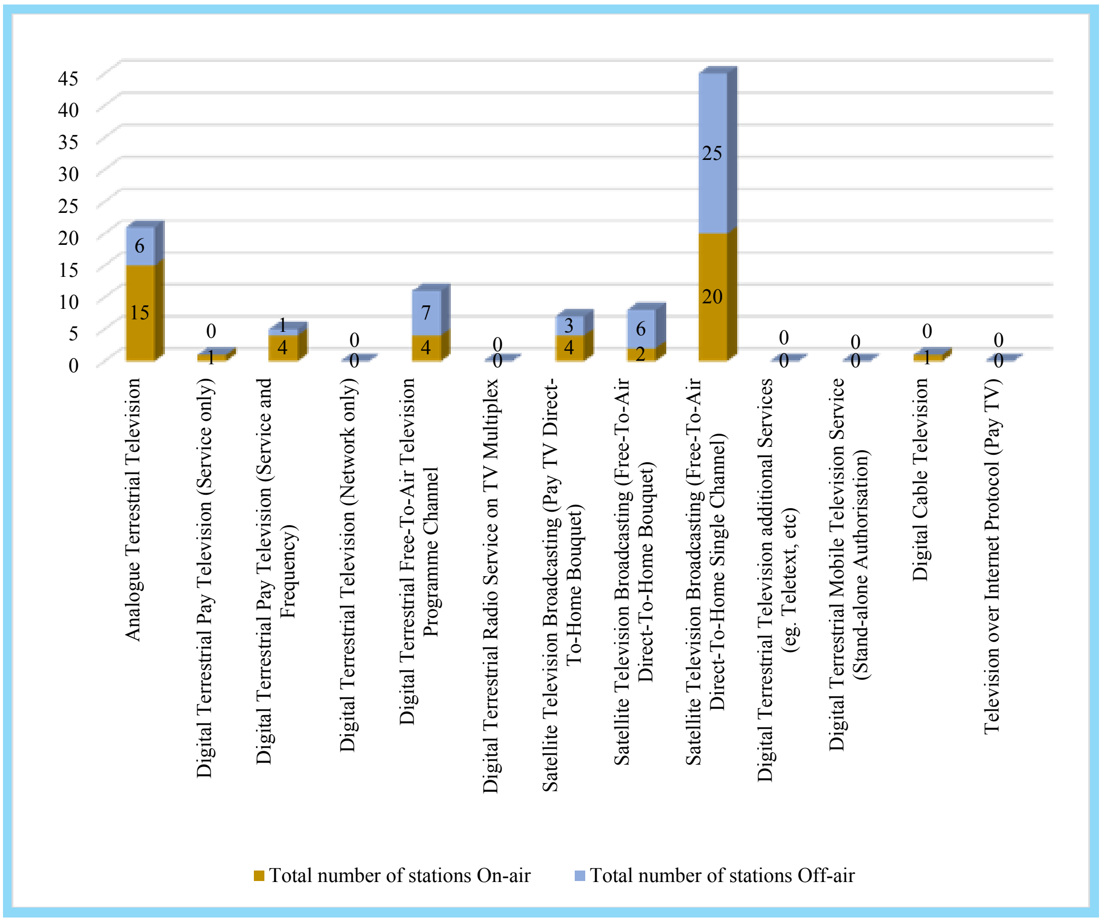
Table 29: Authorised TV Stations in Ghana as at end of Q1 2017

Types of TV stations	Authorised TV stations			No. of TV Stations in Operation (Q1 2017)
	End of Q4 2016	Q1 2017	End of Q1 2017	
Analogue Terrestrial Television	21	0	21	15
Digital Terrestrial Pay Television (Service only)	1	0	1	1
Digital Terrestrial Pay Television (Service and Frequency)	5	0	5	4
Digital Terrestrial Television (Network only)	0	0	0	0
Digital Terrestrial Free-To-Air Television Programme Channel	11	0	11	4
Digital Terrestrial Radio Service on TV Multiplex	0	0	0	0
Satellite Television Broadcasting (Pay TV Direct-To-Home Bouquet)	7	0	7	4
Satellite Television Broadcasting (Free-To-Air Direct-To-Home Bouquet)	8	0	8	2
Satellite Television Broadcasting (Free-To-Air Direct-To-Home Single Channel)	39	6	45	20

Types of TV stations	Authorised TV stations			No. of TV Stations in Operation (Q1 2017)
	End of Q4 2016	Q1 2017	End of Q1 2017	
Digital Terrestrial Television Additional Services (eg. Teletext, etc)	0	0	0	0
Digital Terrestrial Mobile Television Service (Stand-alone Authorisation)	0	0	0	0
Digital Cable Television	1	0	1	1
Television over Internet Protocol (Pay TV)	0	0	0	0
Total	93	6	99	51

Source: National Communications Authority, 2017

Figure 23: Distribution of On-Air and Off-Air TV Stations as at end of Q1 2017



Source: National Communications Authority, 2017

6.0 CONCLUSION

The total mobile subscription in Ghana decreased (6.59) to 35,780,667 with a penetration rate of 126.6%. Volume of mobile voice traffic also increased by 2.95% to 13.54 billion minutes in the first quarter of 2017. At the end of the first quarter of 2017, twenty-five (25) additional FM radio stations and six (6) television stations were authorised, bringing the total number of authorised FM radio and television stations in Ghana to 506 and 99 respectively. Mobile data and BWA subscriptions increased as well as their corresponding data traffic.

7.0 APPENDICES

Table 1: Monthly Mobile Subscription

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MTN	16,511,670	16,787,446	17,004,445	17,192,543	17,428,380	17,579,045	17,774,481	17,890,958	18,050,144	18,280,956	18,766,106	19,296,157	19,841,360	20,265,399	16,789,161
Vodafone	7,740,240	7,859,486	7,900,534	7,976,348	8,054,346	8,093,710	8,160,351	8,223,957	8,158,527	8,170,504	8,304,783	8,289,913	8,401,072	8,428,088	8,582,387
Tigo	5,004,386	5,026,237	5,062,304	5,213,398	5,203,063	5,261,454	5,211,811	5,225,021	5,402,668	5,362,642	5,365,318	5,339,052	5,257,424	5,160,279	5,098,480
Airtel	4,821,760	4,910,607	5,012,239	4,942,181	4,798,480	4,678,736	4,636,374	4,642,569	4,697,653	4,686,625	4,649,934	4,591,051	4,565,618	4,529,315	4,500,907
Glo	1,252,275	1,103,301	1,048,635	962,338	944,260	897,082	854,912	822,539	828,162	769,450	750,751	695,306	670,399	784,283	769,621
Expresso	121,113	115,058	110,549	108,292	106,082	103,960	101,881	106,975	102,566	99,489	95,548	93,599	88,993	66,852	40,111
Total	**35,451,444**	**35,802,135**	**36,138,706**	**36,395,100**	**36,534,611**	**36,613,987**	**36,739,810**	**36,912,019**	**37,239,720**	**37,369,666**	**37,932,440**	**38,305,078**	**38,824,866**	**39,234,216**	**35,780,667**

Table 2: Monthly Prepaid Mobile Subscription

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MTN	16,361,960	16,634,702	16,847,615	17,027,426	17,262,177	17,411,418	17,598,073	17,711,566	17,865,305	18,091,304	18,573,076	19,100,570	19,644,531	20,068,227	16,586,063
Vodafone	7,722,035	7,841,281	7,884,489	7,838,186	7,915,864	7,950,796	8,015,711	8,078,374	8,003,589	8,011,304	8,160,418	8,143,344	8,262,055	8,286,576	8,440,200
Tigo	4,978,467	5,000,412	5,037,529	5,187,849	5,176,854	5,235,048	5,185,381	5,198,446	5,376,059	5,336,023	5,338,664	5,312,298	5,230,646	5,133,006	5,071,151
Airtel	4,809,980	4,898,751	5,000,334	4,930,206	4,786,471	4,666,702	4,624,331	4,629,707	4,684,772	4,673,725	4,637,026	4,578,126	4,552,662	4,516,344	4,487,922
Glo	1,251,079	1,102,163	1,047,455	961,172	943,123	896,019	853,948	821,639	827,307	768,604	749,798	694,375	669,486	783,283	768,488
Expresso	116,193	110,383	105,968	103,848	101,771	99,736	97,741	102,628	98,523	95,567	91,745	89,910	85,414	64,061	38,437
Total	**35,239,714**	**35,587,692**	**35,923,390**	**36,048,687**	**36,186,260**	**36,259,719**	**36,375,185**	**36,542,360**	**36,855,555**	**36,976,527**	**37,550,727**	**37,918,623**	**38,444,794**	**38,851,497**	**35,392,261**

Table 3: Monthly Post-Paid Mobile Subscription

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MTN	149710	152744	156,830	165,117	166,203	167,627	176,408	179,392	184,839	189,652	193,030	195,587	196,829	197,172	203,098
Vodafone	18205	18,205	16,045	138,162	138,482	142,914	144,640	145,583	154,938	159,200	144,365	146,569	139,017	141,512	142,187
Tigo	25919	25825	24,775	25,549	26,209	26,406	26,430	26,575	26,609	26,619	26,654	26,754	26,778	27,273	27,329
Airtel	11780	11856	11,905	11,975	12,009	12,034	12,043	12,862	12,881	12,900	12,908	12,925	12,956	12,971	12,985
Glo	1196	1138	1,180	1,166	1,137	1,063	964	900	855	846	953	931	913	1,000	1,133
Expresso	4,921	4675	4,581	4,444	4,310	4,224	4,140	4,347	4,042	3,921	3,804	3,689	3,579	2,791	1,675
Total	**211,731**	**214,443**	**215,316**	**346,413**	**348,350**	**354,268**	**364,625**	**369,659**	**384,164**	**393,138**	**381,714**	**386,455**	**380,072**	**382,719**	**388,407**

Table 4: Monthly Mobile Data Subscription

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MTN	8,807,337	8,940,472	9,066,405	9,163,083	9,288,548	9,369,407	9,429,065	9,608,952	9,745,986	9,875,422	9,981,935	10,226,520	10,505,087	10,865,059	11,903,262
Vodafone	3,384,636	3,403,780	3,390,276	3,334,093	3,340,452	3,271,790	3,278,834	3,301,319	3,314,912	3,340,171	3,345,418	3,474,090	3,579,362	3,616,216	3,685,895
Tigo	2,732,348	2,722,504	2,707,411	2,703,106	2,704,110	2,716,023	2,743,364	2,817,896	2,872,375	2,857,291	2,782,031	2,725,489	2,708,016	2,723,389	2,746,803
Airtel	2,930,413	2,978,334	3,177,620	3,048,954	3,067,502	3,058,545	3,052,219	3,082,800	3,092,700	3,052,100	2,971,378	2,902,009	2,859,238	2,841,368	2,802,097
Glo	390,398	358,996	325,987	312,746	306,336	298,622	281,724	271,756	265,085	263,817	245,874	277,372	272,084	269,466	263,919
Expresso	47,408	45,037	44,136	43,254	42,389	41,541	40,710	42,746	40,181	38,975	37,806	36,672	35,572	29,169	17,501
Total	**18,292,540**	**18,449,123**	**18,711,835**	**18,605,236**	**18,749,337**	**18,755,928**	**18,825,916**	**19,125,469**	**19,331,239**	**19,427,776**	**19,364,442**	**19,642,152**	**19,959,359**	**20,344,667**	**21,419,477**

Table 5: Monthly Prepaid Data Subscription

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MTN	8,741,420	8,860,602	8,982,370	9,070,263	9,188,625	9,262,152	9,315,265	9,489,759	9,622,891	9,746,707	9,846,347	10,089,003	10,364,316	10,722,880	11,759,269
Vodafone	3,371,152	3,390,028	3,376,648	3,320,472	3,326,492	3,257,985	3,264,915	3,287,493	3,301,040	3,326,321	3,331,546	3,460,195	3,565,495	3,602,419	3,672,051
Tigo	2,723,287	2,713,524	2,698,900	2,694,441	2,695,461	2,707,376	2,734,718	2,809,253	2,863,782	2,848,696	2,773,763	2,717,222	2,699,719	2,715,050	2,738,478
Airtel	2,913,779	2,961,119	3,160,130	3,031,449	3,049,952	3,040,994	3,034,667	3,065,233	3,075,133	3,034,532	2,953,807	2,884,424	2,841,622	2,823,735	2,784,438
Glo	389,017	357,649	324,608	311,866	305,498	297,341	280,504	270,585	264,420	263,173	244,793	276,313	271,019	268,411	262,879
Expresso	47,408	45,037	44,136	43,254	42,389	41,541	40,710	42,746	40,181	38,975	37,806	36,672	35,572	29,169	17,501
Total	**18,186,063**	**18,327,959**	**18,586,792**	**18,471,745**	**18,608,417**	**18,607,389**	**18,670,779**	**18,965,069**	**19,167,447**	**19,258,404**	**19,188,062**	**19,463,829**	**19,777,743**	**20,161,664**	**21,234,616**

Table 6: Monthly Post-Paid Mobile Data Subscription

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MTN	65,917	79,870	84,035	92,820	99,923	107,255	113,800	119,193	123,095	128,715	135,588	137,517	140,771	142,179	143,993
Vodafone	13,484	13,752	13,628	13,621	13,960	13,805	13,919	13,826	13,872	13,850	13,872	13,895	13,867	13,797	13,844
Tigo	9,061	8,980	8,511	8,665	8,649	8,647	8,646	8,643	8,593	8,595	8,268	8,267	8,297	8,339	8,325
Airtel	16,634	17,215	17,490	17,505	17,550	17,551	17,552	17,567	17,567	17,568	17,571	17,585	17,616	17,633	17,659
Glo	1,381	1,347	1,379	880	838	1,281	1,220	1,171	665	644	1,081	1,059	1,065	1,055	1,040
Expresso	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**106,477**	**121,164**	**125,043**	**133,491**	**140,920**	**148,539**	**155,137**	**160,400**	**163,792**	**169,372**	**176,380**	**178,323**	**181,616**	**183,003**	**184,861**

Table 7: Off-net SMS to other Networks

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MTN	12,299,394	10,686,131	11,755,768	11,867,000	12,052,204	12,297,643	13,260,101	14,768,315	13,337,011	12,992,266	12,123,754	13,348,795	13,003,557	10,798,163	12,065,072
Vodafone	8,970,129	7,207,946	7,506,737	7,363,743	8,676,972	9,370,148	10,331,648	9,501,292	7,696,758	-	-	9,789,941	11,993,964	13,557,469	18,277,698
Tigo	7,314,304	6,126,281	12,962,902	6,701,949	6,873,332	6,883,239	7,373,151	8,228,736	7,544,403	6,729,420	5,884,314	6,465,860	6,254,220	5,349,512	6,129,844
Airtel	7,379,168	-	9,052,478	9,260,675	9,769,462	4,964,200	5,411,524	6,166,528	5,430,920	9,250,086	4,528,356	4,924,627	4,888,948	4,080,113	4,386,841
Glo	1,102,373	480,950	537,385	1,031,624	534,474	436,371	533,346	592,661	536,237	511,721	480,347	519,740	444,720	522,217	516,433
Expresso	-	8,062	-											-	
Total	**37,065,368**	**24,509,370**	**41,815,270**	**36,224,991**	**37,906,444**	**33,951,601**	**36,909,770**	**39,257,532**	**34,545,329**	**29,483,493**	**23,016,771**	**35,048,963**	**36,585,409**	**34,307,474**	**41,375,888**

Table 8: On-net SMS

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
MTN	24,598,788	32,986,520	36,206,112	37,018,658	36,792,435	38,277,997	39,098,337	45,044,809	43,243,142	43,213,681	41,951,350	47,711,055	50,226,720	44,474,853	50,478,713
Vodafone	30,497,916	28,049,336	29,983,773	29,585,775	25,271,071	29,582,194	32,617,714	37,121,468	26,434,537	25,483,546	21,623,136	27,615,172	25,055,506	17,860,758	20,249,561
Tigo	32,811,938	26,202,310	30,470,015		32,753,041	32,266,170	34,335,759	33,090,602	33,559,657	28,742,141	21,127,360	22,741,408	21,776,008	19,479,421	23,683,314
Airtel	3,596,973	-	5,430,276	5,560,721	5,204,833	5,312,812	6,093,711	6,751,037	6,219,581	5,388,074	4,528,356	4,634,866	4,475,446	3,496,238	3,777,882
Glo	156,702	119,370	142,671	151,429	138,745		129,214	145,038	124,466	109,840	91,828	97,085	79,675	84,287	88,065
Expresso			-											-	
Total	**91,662,317**	**87,357,536**	**102,232,847**	**72,316,584**	**100,160,124**	**105,439,173**	**112,274,735**	**122,152,953**	**109,581,383**	**102,937,282**	**89,322,030**	**102,799,586**	**101,613,355**	**85,395,557**	**98,277,535**

Table 9: Mobile Voice On-net Tariff per Operator (GHp)

Mobile Network Operator	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
MTN	11	11	11	11	11
Vodafone	11	11	11	11	11
Tigo	11	11	12	13	13
Airtel	11	11	11	11	11
Glo	14	14	14	14	12
Expresso	10	10	10	-	-
Industry Average	**11**	**11**	**11**	**12**	**12**

Table 10: Mobile Voice Off-net Tariff per Operator (GHp)

Mobile Network Operator	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
MTN	13	13	13	13	13
Vodafone	13	13	13	13	13
Tigo	11	11	12	13	13
Airtel	12	12	12	12	12
Glo	14	14	14	14	12
Expresso	15	15	15	-	-
Industry Average	**13**	**13**	**13**	**13**	**13**

Table 11: SMS On-net Tariff per Operator (GHp)

Mobile Network Operator	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
MTN	5	5	5	5	5
Vodafone	5	6	6	6	6
Tigo	8	8	8	8	8
Airtel	4	4	4	4	4
Glo	5	5	5	5	5
Expresso	4	4	4	-	-
Industry Average	**5**	**5**	**6**	**6**	**5**

Table 12: SMS Off-net Tariff per Operator (GHp)

Mobile Network Operator	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
MTN	6	6	6	6	6
Vodafone	7	7	7	7	7
Tigo	8	8	8	8	8
Airtel	5	5	5	5	5
Glo	5	5	5	5	5
Expresso	4	4	4	-	-
Industry Average	**6**	**6**	**6**	**6**	**6**

Table 13: Data Tariff per Megabyte per Operator (GHp)

Mobile Network Operator	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017
MTN	10	10	10	10	10
Vodafone	12	13	13	13	13
Tigo	14	14	14	14	14
Airtel	14	14	15	16	16
Glo	11	12	12	12	6
Expresso	5	5	5	-	-
Industry Average	**11**	**11**	**12**	**13**	**12**

Table 14: Monthly Voice Fixed Subscription

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
Vodafone	265,257	262,680	250,546	248,819	248,053	248,536	248,463	249,043	246,425	246,425	245,550	244,299	246,205	259,863	259,609
Airtel	8,257	8,050	7,990	8,105	10,015	8,117	8,877	7,708	7,596	7,425	7,322	7,191	7,116	7,022	6,978
Total	**273,514**	**270,730**	**258,536**	**256,924**	**258,068**	**256,653**	**257,340**	**256,751**	**254,021**	**253,850**	**252,872**	**251,490**	**253,321**	**266,885**	**266,587**

Table 15: Monthly Data Fixed Subscription

Mobile Network Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
Vodafone	74,698	75,948	75,738	76,396	81,514	82,745	85,703	86,107	86,283	82,084	86,345	85,190	85,410	83,873	84,903
Airtel	1,608	1,566	1,574	1,591	1,596	1,598	1,555	1,539	1,506	1,477	1,446	1,406	1,367	1,368	1,357
Total	**76,306**	**77,514**	**77,312**	**77,987**	**83,110**	**84,343**	**87,258**	**87,646**	**87,789**	**83,561**	**87,791**	**86,596**	**86,777**	**85,241**	**86,260**

Table 16: Monthly BWA Subscription

BWA Subscription	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
Surfline	65,178	65,178	72,903	65,378	65,757	81,325	66,935	73,244	75,065	76,269	76,171	76,919	77,306	77,882	76,792
BBH	26,743	26,666	26,666	26,630	26,585	26,536	26,535	26,479	26,423	26,417	26,411	26,402	26,394	26,383	26,381
BLU	1,460	1,433	1,396	1,343	1,299	1,263	1,235	1,184	1,167	1,132	1,127	1,081	1,051	992	965
Total	**93,381**	**93,277**	**100,965**	**93,351**	**93,641**	**109,124**	**94,705**	**100,907**	**102,655**	**103,818**	**103,709**	**104,402**	**104,751**	**105,257**	**104,138**

Table 16: Monthly BWA Traffic (GB)

BWA Operator	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
Surfline	572,114	580,342	698,645	743,072	748,391	761,705	795,672	864,605	904,560	933,994	948,395	1,020,481	1,032,359	924,189	1,058,999
BBH	85,207	92,113	103,428	91,602	100,630	99,697	88,681	91,543	126,641	88,604	91,610	91,718	91,144	92,148	93,570
BLU	43,585	41,824	42,556	34,266	37,396	32,216	36,441	37,553	30,989	36,307	35,001	34,247	34,286	30,460	34,389
Total	**700,906**	**714,280**	**844,629**	**868,939**	**886,417**	**893,618**	**920,793**	**993,701**	**1,062,190**	**1,058,905**	**1,075,006**	**1,146,446**	**1,157,789**	**1,046,797**	**1,186,958**

Disclaimer:

The National Communications Authority has been diligent to ensure the data in this bulletin are accurate. However, the Authority is not liable for inconsistencies, errors, and gaps in any data or information contained in this bulletin, which is dependent upon the various licensees data submissions to the Authority.

NCA CONTACTS AND PRESENCE COUNTRYWIDE

The Authority currently has eight (8) regional offices to support its operations. Their addresses are listed below

- ### Accra, Head Office

National Communications Authority,
NCA Tower, No 6 Airport City
Close to the Marina Mall
P. O. Box CT 1568, Cantonments, Accra
Tel: +233 (0) 302 776621, 771701
Fax: +233 (0) 302 763449
E-mail: info@nca.org.gh
Complaints: +233 (0) 30 701 1419
complaints@nca.org.gh
Website: www.nca.org.gh

- ### Bolgatanga Office

National Communications Authority,
H/No ZB 70, Zorbisi Estates
Bolgatanga, Upper East Region
Tel: +233 (0) 3820 21141
E-mail: complaints.bolgatanga@nca.org.gh

- ### Ho Office

National Communications Authority,
H/No A6/29, Stadium Road
P. O. Box HP1576, Ho, Volta Region
Tel: +233 (0) 3620 26339
E-Mail: complaints.ho@nca.org.gh

- ### Koforidua Office

National Communications Authority,
Residency Road
Behind New Juabeng Municipal Library
Private Mail Bag, Koforidua, Eastern Region
Tel: +233 (0) 3420 28378, 28380, 28382
E-Mail: complaints.koforidua@nca.org.gh

- ### Kumasi Office

National Communications Authority,
Danyame, Kumasi
P. O. Box KS 10768, Kumasi,
Ashanti Region, Ghana
Tel: + 233 (0) 32 202 0014 / 32 202 0018 / 32 202 0019
Fax: (+233) 32 002 0064
E-Mail: complaints.kumasi@nca.org.gh

- ### Sunyani Office

National Communications Authority,
Plot No 83/D Peakwase
P. O. Box SY125, Sunyani, Brong Ahafo Region
Tel: +233 (0) 3520 27564
E-Mail: complaints.sunyani@nca.org.gh

- ### Takoradi Office

National Communications Authority,
Bakado, 1.2kms away from the Female Prisons
P. O. Box SL 409, Sekondi,
Western Region, Ghana
Tel: +233 (0) 31 202 8073 / 31 202 8049
Fax: +233 (0) 31 202 8063
E-Mail: complaints.takoradi@nca.org.gh

- ### Tamale Office

National Communications Authority,
Watherson Residential Area
P. O. Box TL 1590, Tamale,
Northern Region, Ghana
Tel: + 233 (0) 37 202 8105 / 37 020 8104
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E-Mail: complaints.tamale@nca.org.gh


NCA