QUARTERLY STATISTICAL BULLETIN ON COMMUNICATIONS IN GHANA

Volume 6 Issue 3

NATIONAL COMMUNICATIONS AUTHORITY

THIRD QUARTER

JULY - SEPTEMBER, 2021

Communications for Development

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LIST OF ABBREVIATIONS

BWA	Broadband Wireless Access
LTE	Long-Term Evolution
FM	Frequency Modulation
GH₵	Ghana Cedi
GHp	Ghana pesewas
MB	Megabytes
MNO	Mobile Network Operator
MoU	Minutes of Use
NCA	National Communications Authority
SMS	Short Message Service
TV	Television

VISION AND MISSION

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 that entails segregated data, industry trends and analysis of the Ghana's communications sector. The purpose of this document is to promote open and enriched public discussions on policies for telecom analysts, consumers, academia, policy makers, investors and other stakeholders for decision-making.

This bulletin is prepared from the monthly and quarterly data received from various licensees[1]. It also includes data on internet service providers and broadcasting entities and services providers that was gathered in-house.

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".

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[1] MTN, Vodafone, AirtelTigo, Glo, Surfline, BBH, Telesol, Busy and BLU

DEFINITION OF TERMS

Average SMS per subscriptions - This is calculated by dividing the total average volume of SMS for the quarter by the total average mobile subscriptions for that quarter.

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

Cellular network or mobile network – refers to a communication network where the last mile connection 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.

Minutes of Use per Subscriptions - It is calculated by dividing the total average volume of traffic for that quarter with the total average subscriptions for that quarter.

Mobile Data-refers to active mobile data subscriptions to GPRS, EDGE, HSPA, UMTS, EV-DO, 3G, and LTE that have generated internet traffic (uploaded and/ or downloaded data) within the last ninety (90) days.

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

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

Net Subscriptions 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[2]

A1. Service Providers Authorised/Licensed to Operate

Operator/Service Providers	Number of Authorisation/Licences	Number in Operation
Mobile Network Operators	4	4
Fixed Network Operators	3	3
Broadband Wireless Access	5	5
Television Stations	137	111
FM Stations	659	488

B1. Total Subscriptions

SUBSCRIPTION	QUARTER-ON-QUARTER			YEAR-ON-YEAR			Units
	Q2 2021	Q3 2021	*Growth (%)*	Q3 2020	Q3 2021	*Growth (%)*	
Mobile Voice Subscription	41.72	41.78	*0.15%*	40.35	41.78	*3.53%*	Million
Fixed Voice Subscription	315.17	317.17	*0.63%*	299.96	317.17	*5.35%*	Thousand
Mobile Data Subscription	22.85	23.29	*1.89%*	25.81	23.29	*-9.80%*	Million
Fixed Data Subscription	90.05	92.75	*3.00%*	78.92	92.75	*17.52%*	Thousand
Broadband Wireless Access	53.26	53.04	*-0.41%*	52.60	53.04	*0.83%*	Thousand

B2. Voice, Data and SMS Traffic

TRAFFIC	QUARTER-ON-QUARTER			YEAR-ON-YEAR			Units
	Q2 2021	Q3 2021	*Growth (%)*	Q3 2020	Q3 2021	*Growth (%)*	
Mobile Voice Traffic (Domestic)	26.74	27.57	*3.13%*	25.23	27.57	*9.27%*	Billion minutes
Fixed Voice Traffic	9.36	8.87	*-5.24%*	9.09	8.87	*-2.42%*	Million minutes
Incoming International Traffic (Direct to Network Only)	60.27	55.16	*-8.47%*	54.31	55.16	*1.58%*	Million minutes
Outgoing International Traffic	119.52	113.05	*-5.41%*	116.24	113.05	*-2.74%*	Million minutes
Mobile Data Traffic (MB)	229.08	249.01	*8.70%*	199.5	249.01	*24.82%*	Billion MB
BWA Data Traffic (MB)	6.97	7.36	*5.56%*	6.13	7.36	*19.99%*	Billion MB
SMS Count	550.1	547.43	*-0.49%*	483.27	547.43	*13.28%*	Million

[2] The decimals may not be exact due to the rounding-off of the actual figures.

B3. Penetration Rate (%)

PENETRATION RATE (%)	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q2 2021	Q3 2021	*Growth (%)*	Q3 2020	Q3 2021	*Growth (%)*
Mobile Voice Subscription	133.29	135.67	*1.79%*	131.28	135.67	*3.34%*
Fixed Voice Subscription	1.01	1.03	*1.98%*	0.98	1.03	*5.10%*
Mobile Data Subscription	73.02	75.62	*3.56%*	83.98	75.62	*-9.95%*
Fixed Data Subscription	0.29	0.30	*3.45%*	0.26	0.30	*15.38%*
Broadband Wireless Access	0.17	0.17	*0.00%*	0.17	0.17	*0.00%*

C1. Broadcasting Sector

FM/TV AUTHORISATION & OPERATIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q2 2021	Q3 2021	*Growth (%)*	Q3 2020	Q3 2021	*Growth (%)*
FM Authorisation	659	659	*0.00%*	604	659	*9.11%*
FM Station Operating	488	488	*0.00%*	446	488	*9.42%*
TV Authorisations	135	137	*1.48%*	145	137	*-5.52%*
TV Stations Operating	108	111	*2.78%*	102	111	*8.82%*

C2. Categories of Authorised FM Radio Stations

CATEGORIES OF FM RADIO STATIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q2 2021	Q3 2021	*Growth (%)*	Q3 2020	Q3 2021	*Growth (%)*
PUBLIC	31	31	*0.00%*	31	31	*0.00%*
PUBLIC FOREIGN	5	5	*0.00%*	5	5	*0.00%*
CAMPUS	24	24	*0.00%*	22	24	*9.09%*
COMMUNITY	103	103	*0.00%*	87	103	*18.39%*
COMMERCIAL	496	496	*0.00%*	459	496	*8.06%*

1.0 MOBILE NETWORK

This section provides details on the Mobile Network Operators (MNOs) in Ghana by looking at the mobile voice subscriptions, net additions to voice subscriptions, mobile penetration, volume of voice/data traffic, SMS and mobile data subscriptions. The National Communications Authority (NCA) licensed four service providers that provide mobile telecoms services in Ghana, namely AirtelTigo, Glo, MTN and Vodafone.

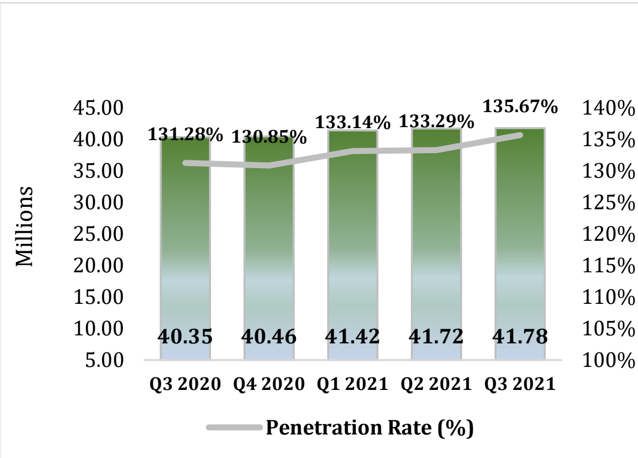
1.1 Mobile Voice Subscriptions and Penetration Rate[3]

Mobile Voice subscriptions increased from 41.72 million at the end of Q2 2021 to 41.78 million at the end of Q3 2021, representing a growth of 0.15%.

Year-on-year subscriptions increased from 40.35 million at the end of Q3 2020 to 41.78 million at the end of Q3 2021, recording a growth of 3.53%.

The penetration rate as at the end of the third quarter of 2021 was 135.67% as compared to 133.29% recorded in the second quarter of 2021, indicating a growth of 1.79% (Figure 1) (Appendix, Table 1).

Figure 1: Mobile Voice Subscription and Penetration Rate



1.1.1 Voice Subscription Market Share per Operator

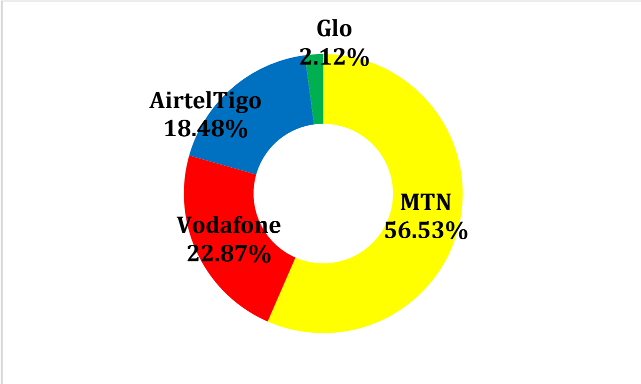
At the end of Q3 2021, MTN recorded 56.53% of the market with 23.62 million subscriptions.

Vodafone followed with 9.55 million subscriptions (22.87%).

AirtelTigo also recorded a market share of 18.48% and a subscriber base of 7.72 million.

Glo followed with 0.89 million subscriptions with a market share of 2.12% (Figure 2) (Appendix, Table 2).

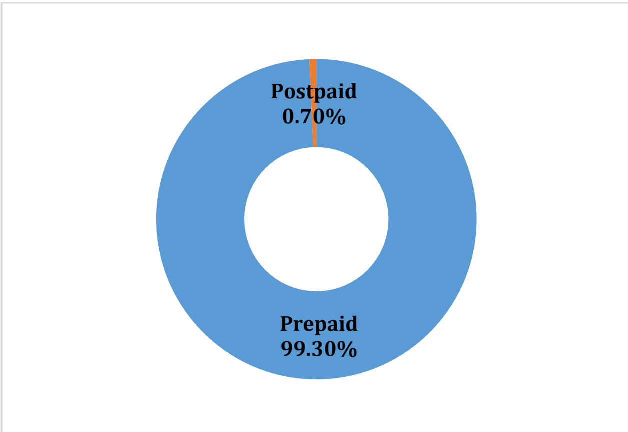
Figure 2: Market Share per Operator



1.1.2 Prepaid and Postpaid Mobile Voice Subscriptions

Mobile voice subscription for prepaid subscribers is 41.49million representing a market share of 99.30%, Post-paid stood at 0.70% with a subscription of 0.29 million (Figure 3) (Appendix, Table 3).

Figure 3: Prepaid and Postpaid Mobile Voice Subscriptions



1.2 Off-net Mobile and Fixed Voice Traffic (Domestic)

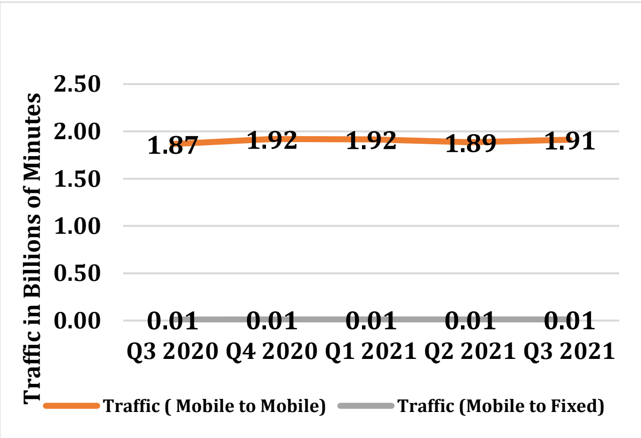
Mobile-to-mobile off-net traffic increased from 1.89 billion minutes at the end of Q2 2021 to 1.91 billion minutes at the end of Q3 2021 representing an increase in growth by 1.48%.

3The mobile penetration rate is estimated by dividing the total number of mobile subscribers by the total population. Population of Ghana was estimated based on the preliminary result of 2021 Population Census figure 30,792,608 published by Ghana Statistical Service (GSS). The High Penetration Rate is partly attributed to people owning more than one SIM card.

Year-on-year mobile-to-mobile off-net traffic rose from 1.87 billion minutes at the end of Q3 2020 to 1.91 billion minutes at the end of Q3 2021, representing a growth of 2.49%.

Quarter-on-quarter mobile to fixed off-net traffic grew from 11.91million minutes to 12.25 million minutes indicating a marginal growth of 2.80%. Year-on-year mobile-to-fixed off-net traffic grew at 11.73% from 10.96 million minutes at the end of Q3 2020 to 12.25 million minutes at the end of Q3 2021. (Figure 4) (Appendix, Table 4)

Figure 4: Off-net Traffic Distribution between Mobile and Fixed Networks



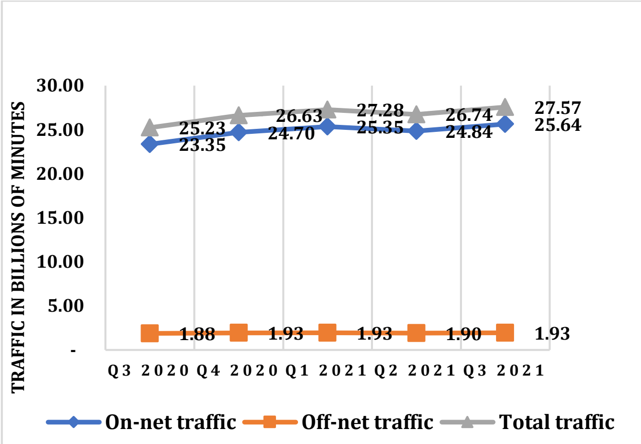
1.2.1 Total Domestic Mobile Voice Traffic

Total domestic mobile voice traffic recorded an increase from 26.74 billion minutes in Q2 2021 to 27.57 billion minutes in Q3 of 2021, representing a 3.12% increase in growth. Year-on-year mobile voice traffic also surged from 25.23 billion minutes at the end of the third quarter of 2020 to 27.57 billion minutes at the end of the third quarter of 2021, representing a growth rate of 9.26%

Off-net traffic increased from 1.90 billion minutes at the end of Q2 2021 to 1.93billion minutes at the end of Q2 2021, giving a decline in growth by 1.55%. Year-on-year off-net traffic moved from 1.88 billion minutes in Q3 2020 to 1.93 billion minutes at the end of Q3 2021 representing 2.54% growth.

On-net traffic rose from 25.64 billion minutes in the previous quarter to 24.84 billion minutes at a growth of 3.25% during the quarter under review. Year-on-year on-net traffic also grew from 23.35 billion minutes in Q3 2020 to 25.64 billion minutes at the end of Q3 2021 representing 9.80% in growth rate. (Figure 5) (Appendix, Table 5)

Figure 5: Total Domestic Mobile Voice Traffic in Billions of Minutes

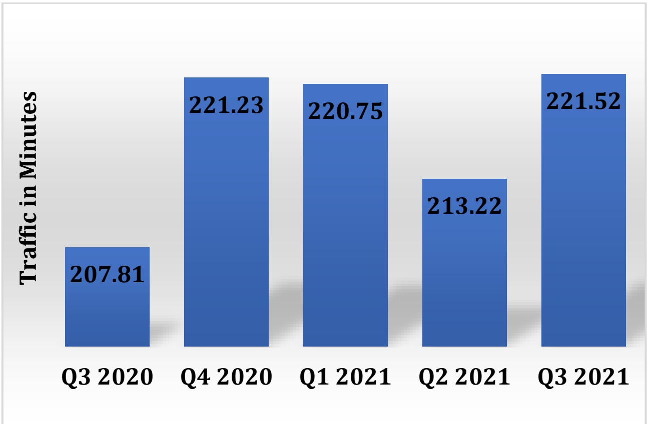


1.2.2 Minutes of Use (MoU)[4]

Quarter-on-quarter average minutes of use per subscription increased from 213.22 minutes in Q2 2021 to 221.52 minutes (3.89%) in Q3 2021.

Year-on-year minutes of use per subscription grew from 207.81 minutes in Q3 2020 to 221.52 minutes in Q3 2021, representing 6.60% growth (figure 6) (Appendix, Table 6).

Figure 6: Mobile Voice Traffic Minutes of Use (MoU) per subscriptions



1.3 International Traffic

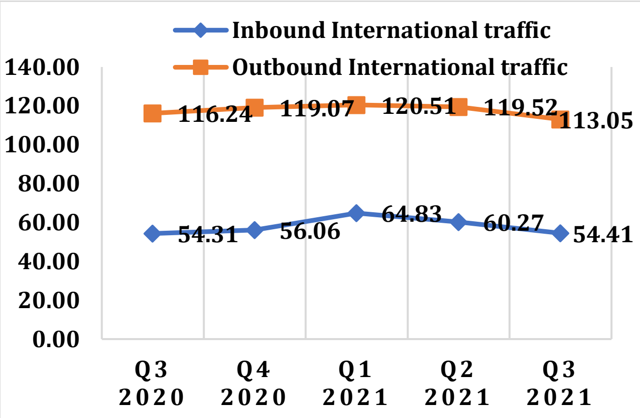
During the quarter under review, inbound international traffic decrease from 60.27 million minutes to 55.16 million minutes, representing a decrease of 9.72%. Year-on-year inbound international traffic increased from 54.31 million

[2]. Minutes of use per subscriptions is calculated by dividing the total average volume of traffic for the quarter by the total average subscriptions for that quarter.

minutes to 55.16 million minutes showing a decrease in growth by 8.47%.

Outbound international traffic showed 5.42% decline in growth from 119.52 million minutes in Q2 2021 to 113.05 million minutes at the end of Q3 2021. Year-on –year outbound international traffic fell from 116.24 million minutes to 113.05 million minutes, indicating a decline of 2.75% (Figure 7) (Appendix, Table 7).

Figure 7: International Traffic in Minutes (Millions)

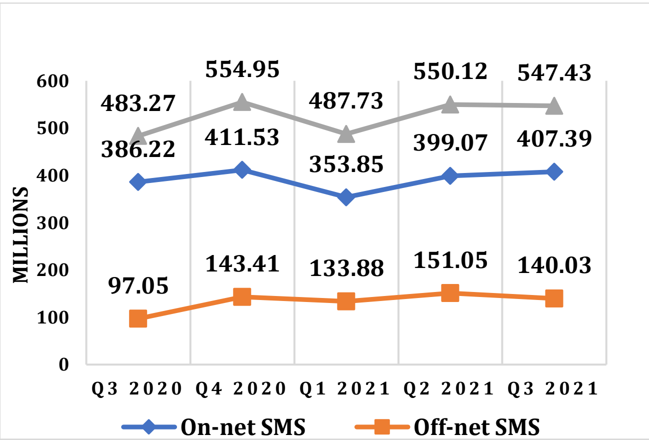


1.3.1 Short Messaging Services (SMS)

The total number of short messages service (SMS) sent at the end of Q3 2021 was 547.43 million as compared to 550.12 million in the preceding quarter, recording a 0.49% decrease.

Year-on-year SMS counts went up from 483.27 million in Q3 2020 to 547.43 million at the end Q3 2021, representing an increase of 13.28% (figure 8) (Appendix, Table 8).

Figure 8: Total Number of SMS



1.3.2 SMS Counts per Mobile Network Operator/Market Share

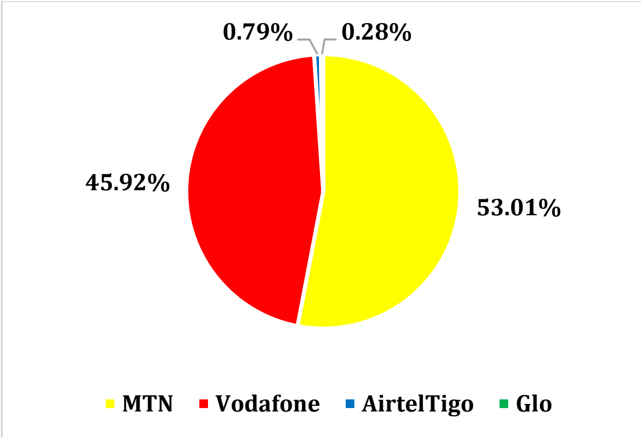
The volume of SMS traffic originating from MTN was 315.77 million at the end of Q3 2021; representing a market share of 53.01% of the total, SMS count.

The volume of SMS traffic from Vodafone was 225.29 million, representing a market share of 45.92% of the total SMS count.

AirtelTigo had an SMS count of 4.69 million, representing 0.79% of the market share of the total SMS count.

Glo generated 1.68 million SMS count recording a share of 0.28% (Figure 9) (Appendix, Table 8).

Figure 9: Average SMS per Mobile Network Operator

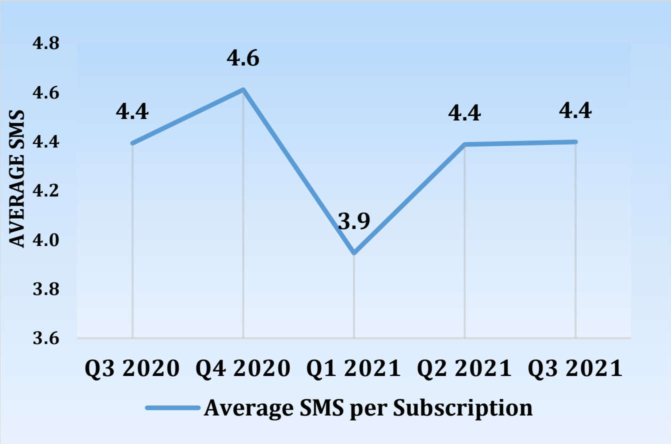


1.3.3 Average SMS per subscription

Quarter-on-quarter average SMS sent per subscription at the end of Q3 2021 recorded 4.4 SMS, indicating a no increase in the average SMS per subscriptions as compared to the end of Q2 2021.

Year-on-year average SMS volume per subscription recorded no increase from approximately 4.4 at the end of Q3 2020 to the end of Q3 202 although there were fluctuations. (Figure 10) (Appendix, Table 9).

Figure 10: Average SMS per Subscription

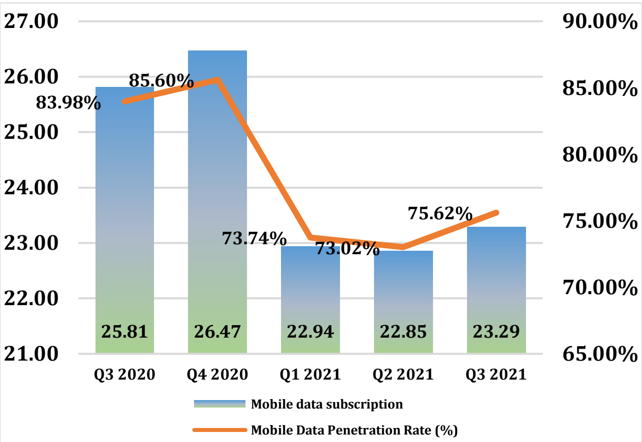


1.4 Mobile Data Subscriptions and Penetration Rate (%)

At the end of Q3 2021, mobile data subscriptions increased by 1.89% from 22.85 million at the end of Q2 2021 to 23.29 million.

Year-on-year subscriptions decreased by 9.80% (9.80%) from 25.81 million at the end of Q3 2020 to 23.29 million at the end of Q3 2021. The penetration rate as ta the end of the third quarter of 2021 was 75.62% (Figure 11) (Appendix, Table 10).

Figure 11: Mobile Data Subscriptions and Penetration Rate (%)

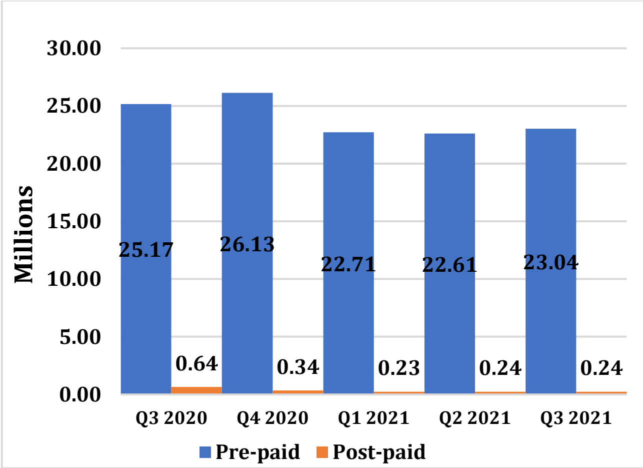


1.4.1 Mobile Data Pre-paid and Post-paid Subscriptions

Mobile data pre-paid subscriptions decreased from 22.61million in the second quarter of 2021 to 23.04 million subscriptions at the end of the third quarter of 2021, representing 98.95% of the total mobile data.

Mobile data post-paid subscriptions inversely increased from 243,664 thousand in the second quarter of 2021 to 243,738 thousand subscriptions representing 1.05% of the total mobile data at the end of Q3 2021 (Figure: 12) (Appendix, Table 10).

Figure 12: Mobile Data Pre-paid and Post-paid Subscriptions



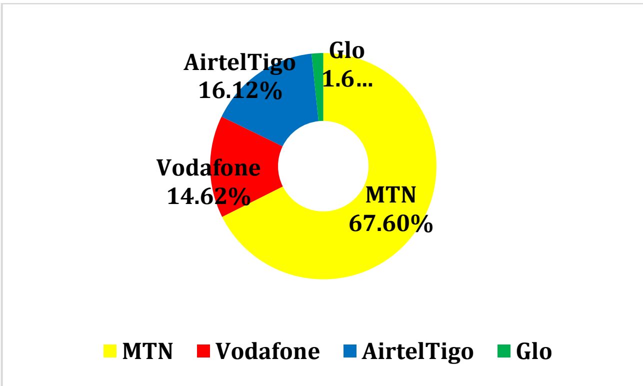
1.4.2 Mobile Data Subscriptions per Mobile Network Operator /Market Share

MTN recorded 15.74 million subscriptions with a market share of 67.60%.

While Vodafone recorded 3.40 million subscriptions with a market share of 14.62%, AirtelTigo had 3.75 million in mobile data subscriptions with a market share of 16.12%.

Glo ended the third quarter of 2021 with a total data subscription of 0.39 million and a market share of 1.66% (Figure 13).

Figure 13: Market Share per Operator

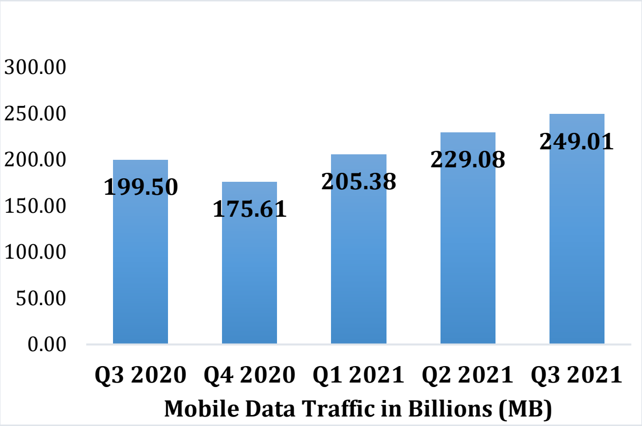


1.5 Mobile Data Traffic in Billions of Megabytes (MB)

At the end of Q3 2021, internet traffic generated by the mobile network operators was 249.01 billion megabytes of data, recording an increase in growth by 8.70% as compared to 229.08 billion megabytes of data at the end of Q2 2021.

Year-on-year internet traffic increased from 199.50 billion megabytes at the end of Q3 2020 to 249.01 billion megabytes at the end of Q3 2021, representing an increase of 24.82% (Figure 14) (Appendix, Table 11).

Figure 14: Mobile Data Traffic in Billions of Megabytes (MB

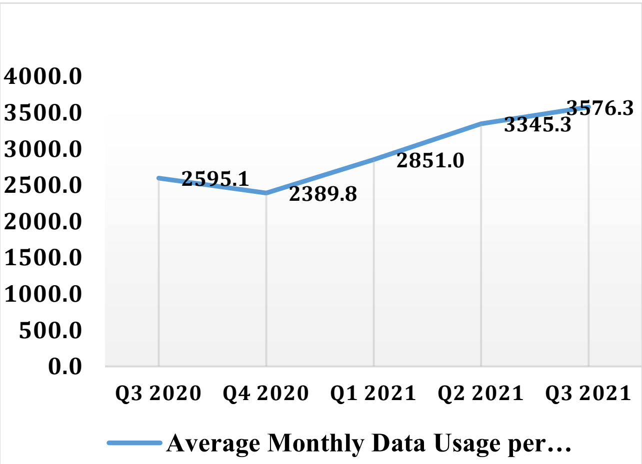


1.5.1 Mobile Internet Usage per Subscription (MB) [5]

The average mobile internet usage per subscription increased from 3345.3 MB at the end of Q2 2021 to 3576.3 MB at the end of Q3 2021 recording a growth of 6.90%.

Year-on- year average data usage per subscription increased from 2595.1 MB at the end of Q3 2020 to 3576.3 MB at the end of Q3 2021, recording a growth of 37.81% (Figure 15) (Appendix, Table 12).

Figure15: Mobile Data Usage per Subscription (MB)



1.5.2 Mobile Internet Traffic (MB) per Mobile Network Operator

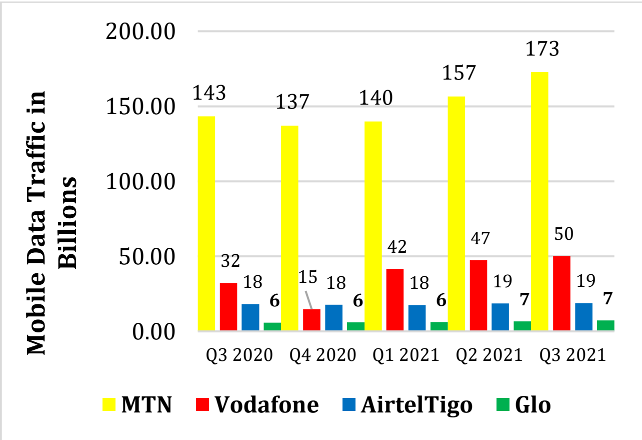
MTN generated the highest volume of internet traffic of 172.79 billion megabytes with a market share of 69.39%.

Vodafone followed with a traffic of 50.15 billion megabytes and a market share of 20.14%.

AirtelTigo also had 18.87 billion megabytes of data, recording a market share of 7.58%.

Glo recorded the least data usage, generating 7.20 billion megabytes with a market share of 2.89% (Figure 16) (Appendix, Table 13)

Figure 16: Mobile Internet Traffic (MB) per Operator



1.6 Mobile Telecommunications Service Tariffs

Quarter- on -quarter average tariffs for off net mobile decreased from 0.13 pesewas in Q2 2021 to 0.12 pesewas at the end of Q3 2021.

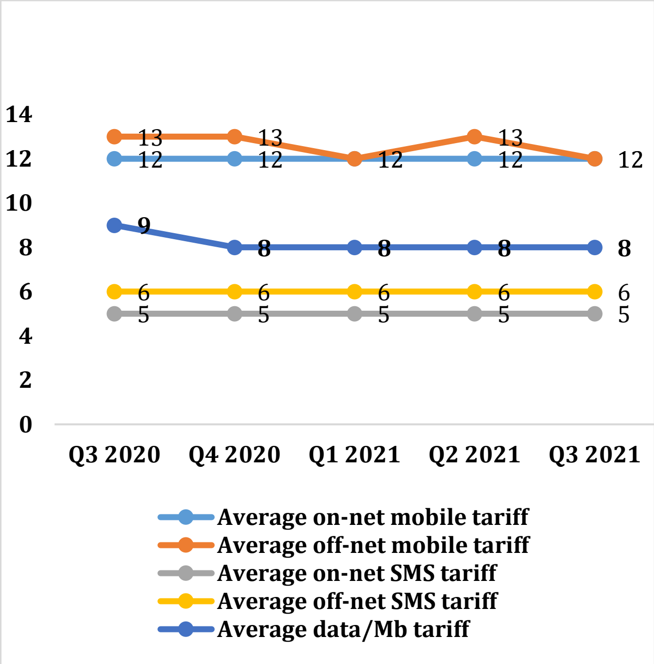
Average on net tariff mobile remained at 0.12 pesewas.

Average off net and on net SMS tariffs stood at 0.06 and 0.05 pesewas respectively.

The average data tariff for the quarter also maintained its price of 0.08 pesewas. (Figure 17) (Appendix, Table 14).

5 Mobile Internet usage per subscription is calculated by dividing the total average volume of internet traffic for the quarter by the total average mobile internet subscription for that quarter.

Figure 17:Average Mobile Tariffs per Service



2.0 BROADBAND WIRELESS ACCESS (BWA)

There are five (5) Broadband Wireless Access operators in Ghana namely; BLU Telecommunications**6**, Broadband Home (BBH), Busy Internet, Surfline and Telesol.

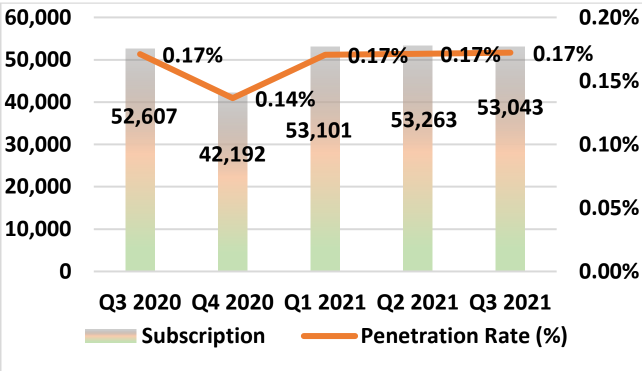
2.1 BWA Subscriptions and Penetration Rate

BWA subscriptions decreased from 53,263 in the second quarter of 2021 to 53,043 in the third quarter of 2021, representing a decline in growth by 0.41%.

Year-on-year subscriptions also grew by 0.83%, which was from 52,607 in the third quarter of 2020 to 53,043 at the end of the third quarter of 2021.

Penetration rate for broadband wireless access also remained at 0.17% in the previous quarter and the quarter under review. (Figure 18) (Appendix, Table 15).

Figure 18: BWA Subscription and Penetration Rate



2.1.1 Subscriptions per Broadband Wireless Access (BWA) Operator

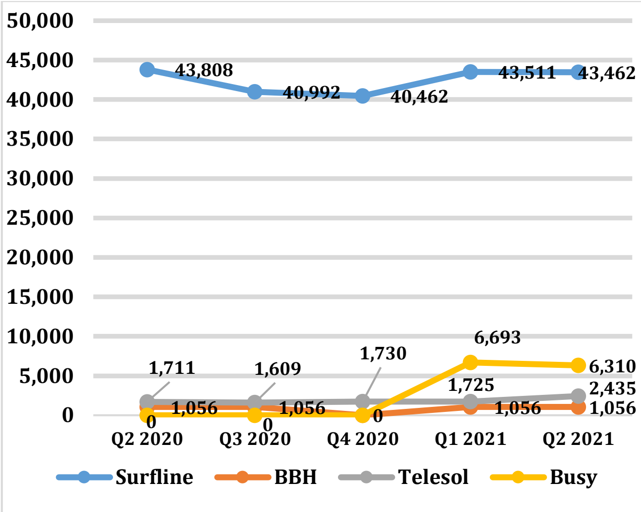
Surfline recorded 42,828 subscriptions at the end of the quarter under review representing 80.77% of the market share, as against 43,462 in the previous quarter.

Busy ended this quarter with a subscription of 6,094 and a market share of 11.49%.

Telesol recorded 3,045 subscriptions this quarter with a market share of 5.74%

BBH had a subscription of 1,056 and a market share of 1.99% at the end of the third quarter of 2021. (Figure 19) (Appendix, Table 16).

Figure 19: Subscriptions per Broadband Wireless Access (BWA) Operator

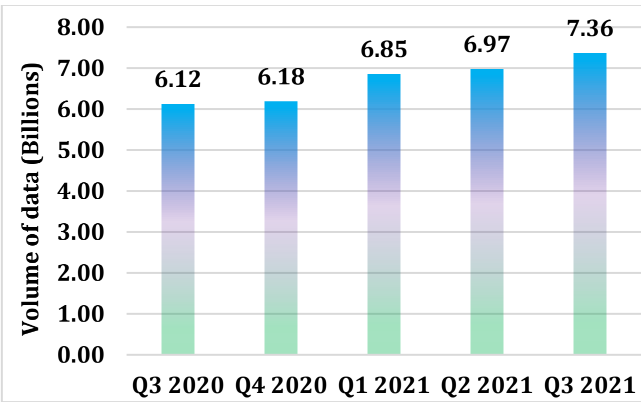


2.2 Broadband Wireless Access (BWA) Volume of Internet Traffic

The total volume of internet traffic generated by the BWAs rose from 6.97 billion megabytes at the end of Q2 2021 to 7.36 billion megabytes at the end of Q3 2021, indicating a growth of 5.56%.

Year-on-year internet traffic generated by the BWAs increased from 6.12 billion megabytes at the end of Q3 2020 to 7.36 billion megabytes at the end of Q3 2021, representing a growth of 19.99% (Figure 20) (Appendix A, Table 17).

Figure 20: BWA Internet Traffic in Megabyte (MB)



6 As at the time of preparation of the report, there was no available data for BLU Telecommunications.

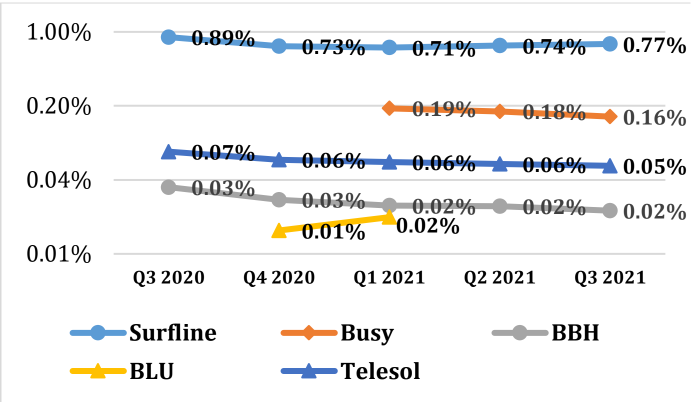
2.2.1 Volume of BWA Traffic per Operator

Surfline's total volume of internet traffic for the quarter under review was 5.64 billion MB, as against 5.18 billion MB in the previous quarter representing 76.68% of the total volume of traffic.

Busy had a total internet traffic of 1.17 billion MB at the end of the third quarter of 2021 with a market share of 15.84%. Telesol recorded 0.399 billion MB with a market share of 5.43% BBH ended Q3 2021 with 0.151 billion MB of volume of internet traffic and a market share of 2.05%

(Figure 21) (Appendix, Table 17).

Figure 20: BWA Traffic Market Share per Operator (MB)

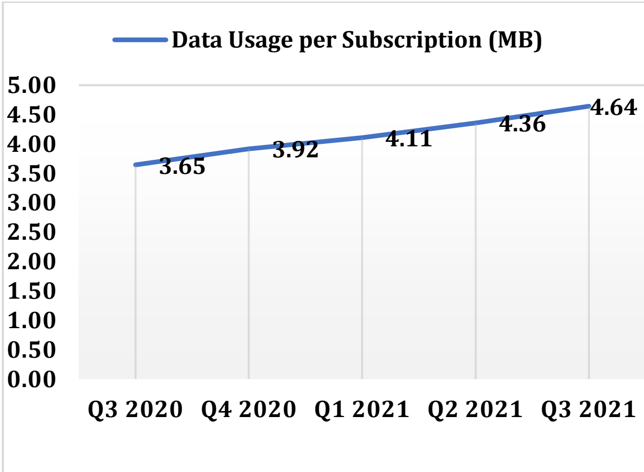


2.2.2 Average Monthly Internet Usage per BWA Subscription7

Average internet usage per BWA subscription increased to 4.64 thousand megabytes in the second quarter of 2021 from 4.36 thousand megabytes in the previous quarter.

Year-on-year internet usage per subscription also increased from 3.65 megabytes in the third quarter of 2020 to 4.64 megabytes at the end of the third quarter of 2021 (Figure 22) (Appendix, Table 18).

Figure 21: Average Internet Usage per BWA Subscription



7BWA data per subscriptions is calculated by dividing the total average volume of BWA's traffic for the quarter by the total average of BWA subscriptions for that quarter.

3.0 FIXED NETWORK

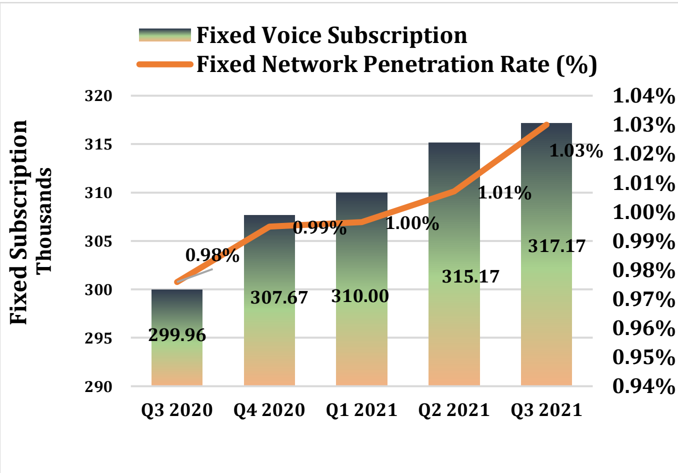
This section analyses the fixed telephone industry in Ghana. Three (3) operators namely Vodafone, AirtelTigo and MTN have been licensed by the NCA to provide this service.

3.1Fixed Voice Subscriptions and Penetration Rate

Total number of fixed line subscriptions increased from 315,167 in the second quarter of 2021 to 317,172 at the end of the third quarter of 2021. This shows a penetration rate of 1.03% and a 0.63% growth in subscriptions.

Year-on-year subscription increased from 299,959 in Q3 2020 to 317,172 at the end of Q3 2021, representing a growth rate of 5.35% (Figure 23) (Appendix, Table 19).

Figure 22: Fixed Network Voice Subscription and Penetration Rate

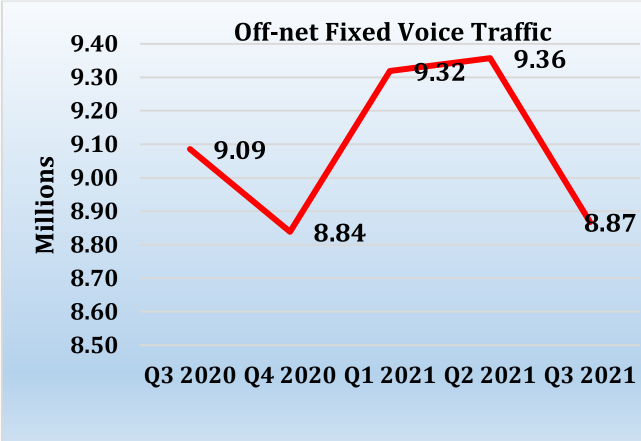


3.2 Fixed Voice Network Traffic

Total fixed voice traffic decreased by 5.23% in Q3 2021, from 9.36 million minutes in Q2 2021 to 8.87 million minutes.

Year-on-year total fixed voice traffic decreased by 2.39%, from 9.09 million minutes in Q3 2020 to 8.87 million minutes in Q3 2021. (Figure 24) (Appendix, Table 20).

Figure 23: Total Fixed Voice Traffic

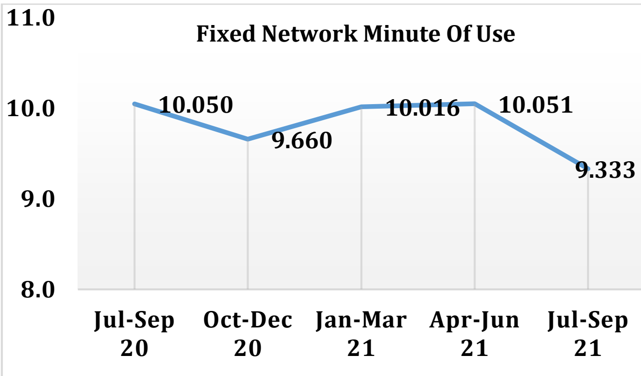


3.3 Fixed Voice Average Minute of Use[8]

Average fixed voice traffic per subscription decreased from 10.051 to 9.333 minutes at the end of the second quarter of 2021 (7.15%).

Year-on-year minutes of use per subscription decreased from 10.050 minutes in the third quarter of 2020 to 9.333 minutes at the end of the third quarter of 2021 (7.13%) (Figure 25) (Appendix A, Table 21).

Figure 24: Fixed Network Minute of Use



3.4 Fixed Data Subscriptions and Penetration

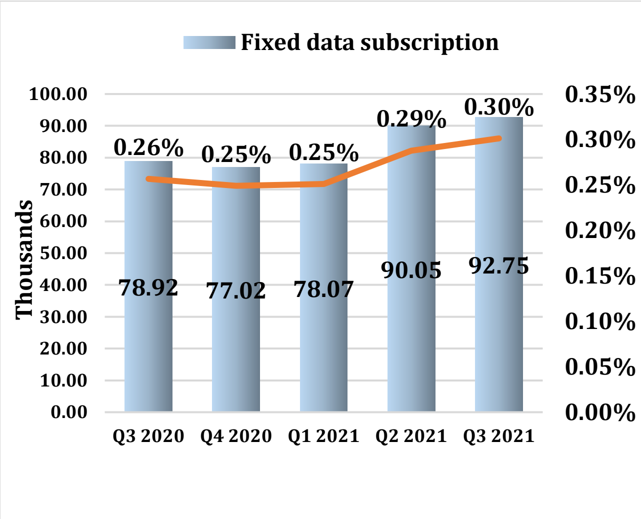
Fixed Data subscriptions went up from 90,052 in the previous quarter to 92,748 in the quarter under review, which represents a growth rate of 2.99%.

8 Fixed Network Minutes of use per subscriptions is calculated by dividing the total average volume of traffic for the quarter by the total average fixed subscriptions for that quarter.

At a growth rate of 17.52%, Year-on-year fixed data subscriptions increased from 78,924 in the preceding year to 92,748 at the end of the third quarter of 2021.

Fixed data penetration rate increased from 0.29% at the end of the second quarter of 2021 to 0.30% at the end of the third quarter of 2021. (Figure 26) (Appendix, Table 22).

Figure 25: Fixed Data Subscriptions and Penetration



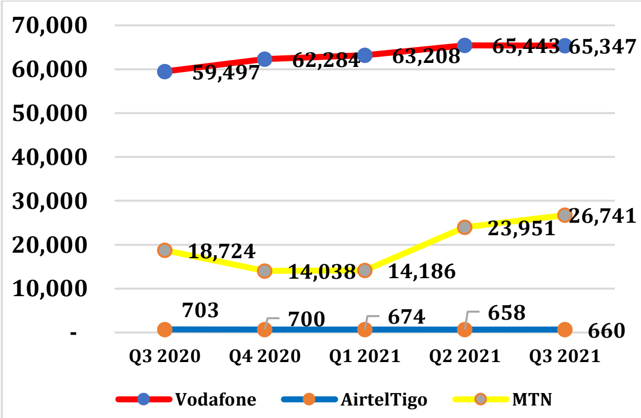
3.5 Fixed Data Subscriptions per Mobile Network Operator

Vodafone's subscriptions at the end of Q3 2021 was 65,347 representing 70.46% of the market share as against 65,443 in Q2 2021.

MTN's subscriptions at the end of Q3 2021 was 26,741 representing 28.83% of the market share.

AirtelTigo recorded 660 subscriptions at the end of Q3 2021 with a market share of 0.71%. (Figure 27) (Appendix, Table 23).

Figure 26: Fixed Data Subscription per Operator



4.0 BROADCASTING

4.1 Authorised Frequency Modulation (FM) Radio Station

The total number of authorised FM stations in Ghana stood at 659 at the end of Q3 2021. The total number of FM stations in operation was 488 in the quarter under review.

The Ashanti Region had the highest number of FM stations (95), representing 15.10% of the total number of authorised FM stations in the country. The Savannah Region had the least number of authorised FM Stations (11), representing 1.75% of the total authorised FM Stations in the country. (Figure 28) (Appendix A, Table 25).

Figure 27: Regional distribution of authorised FM stations as at end of Q3 2021

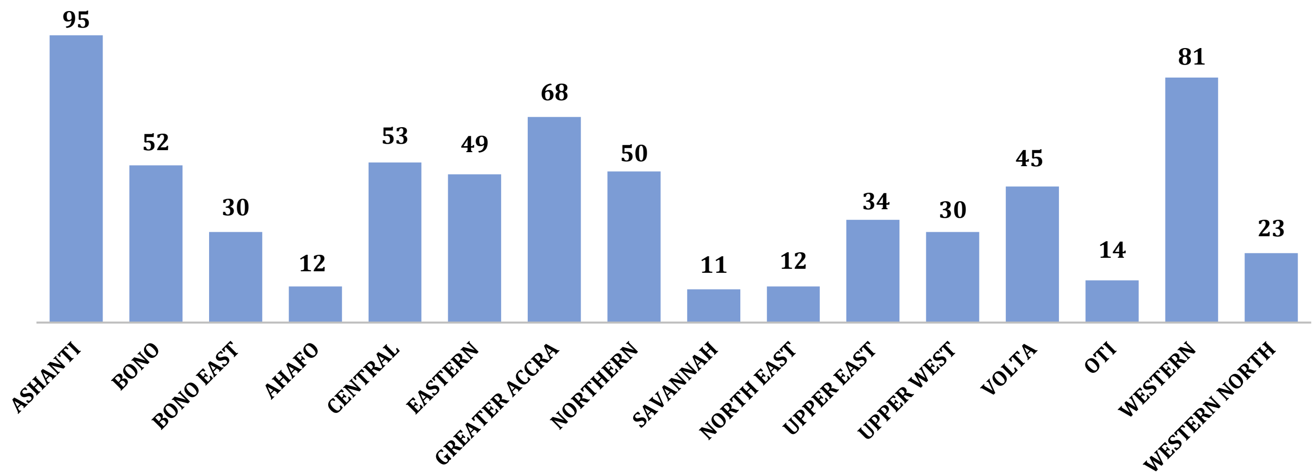


Figure 28: Regional distribution of On-air and Off-air FM stations as at end of Q3 2021

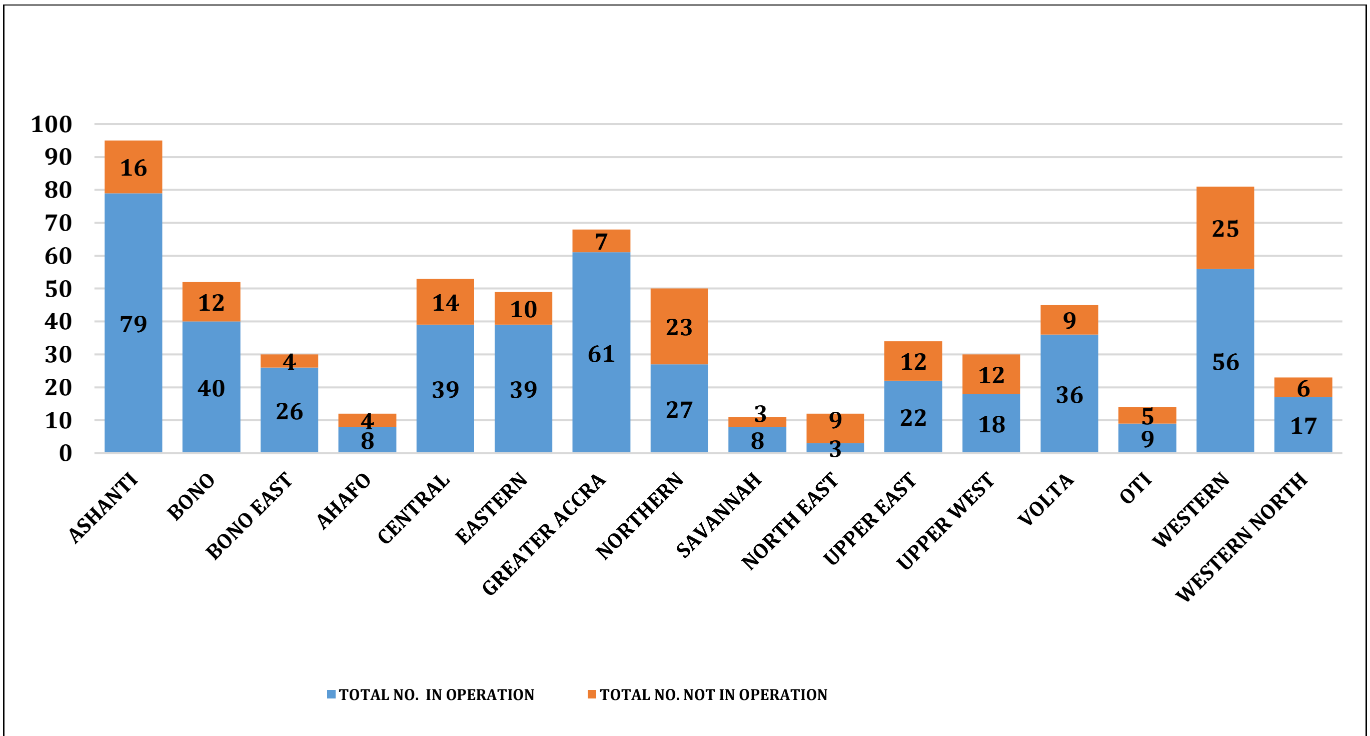
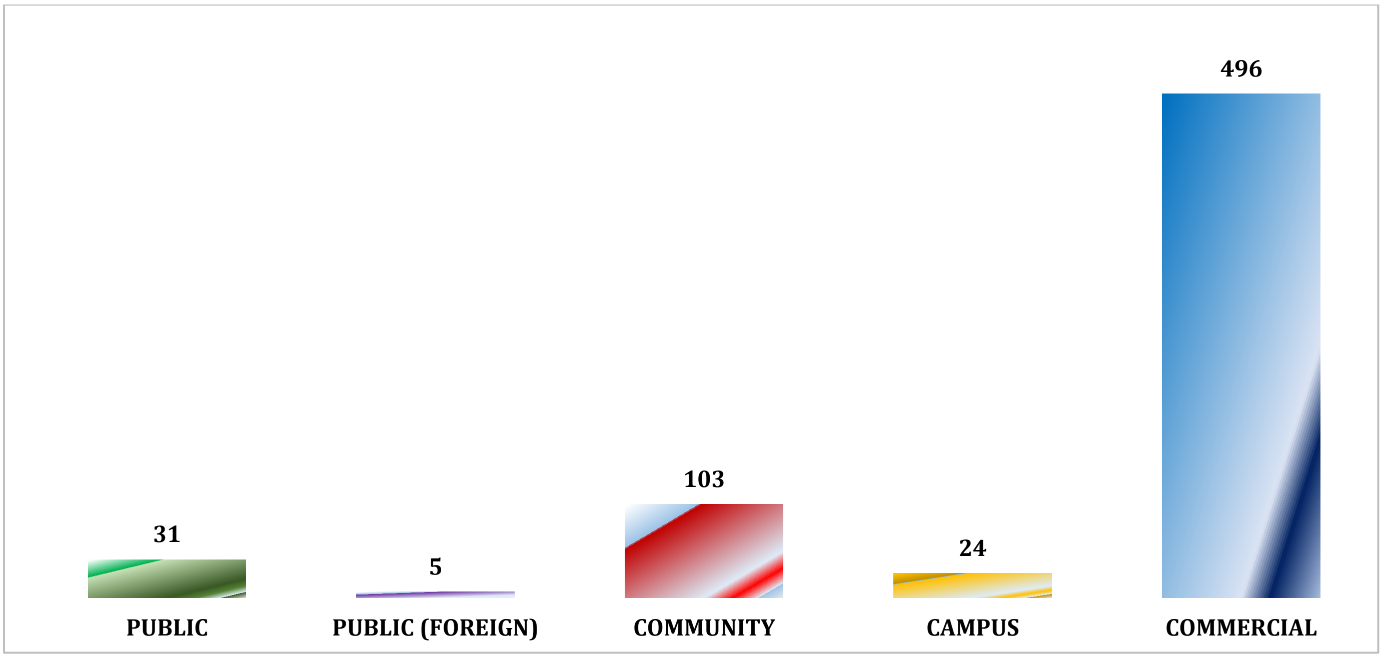


Figure 29: Purpose of Authorised Radio Stations as at Q3 2021



4.2 Authorised Television Stations

The total number of authorised TV stations in Ghana at the end of the third quarter of 2021 was 137 out of which 111 were operational during the quarter under review, representing 81.02% of the total number of authorised TV stations in the country (Figure 32) (Appendix A, Table 26).

Figure 30: Authorised TV Stations Q3 2021

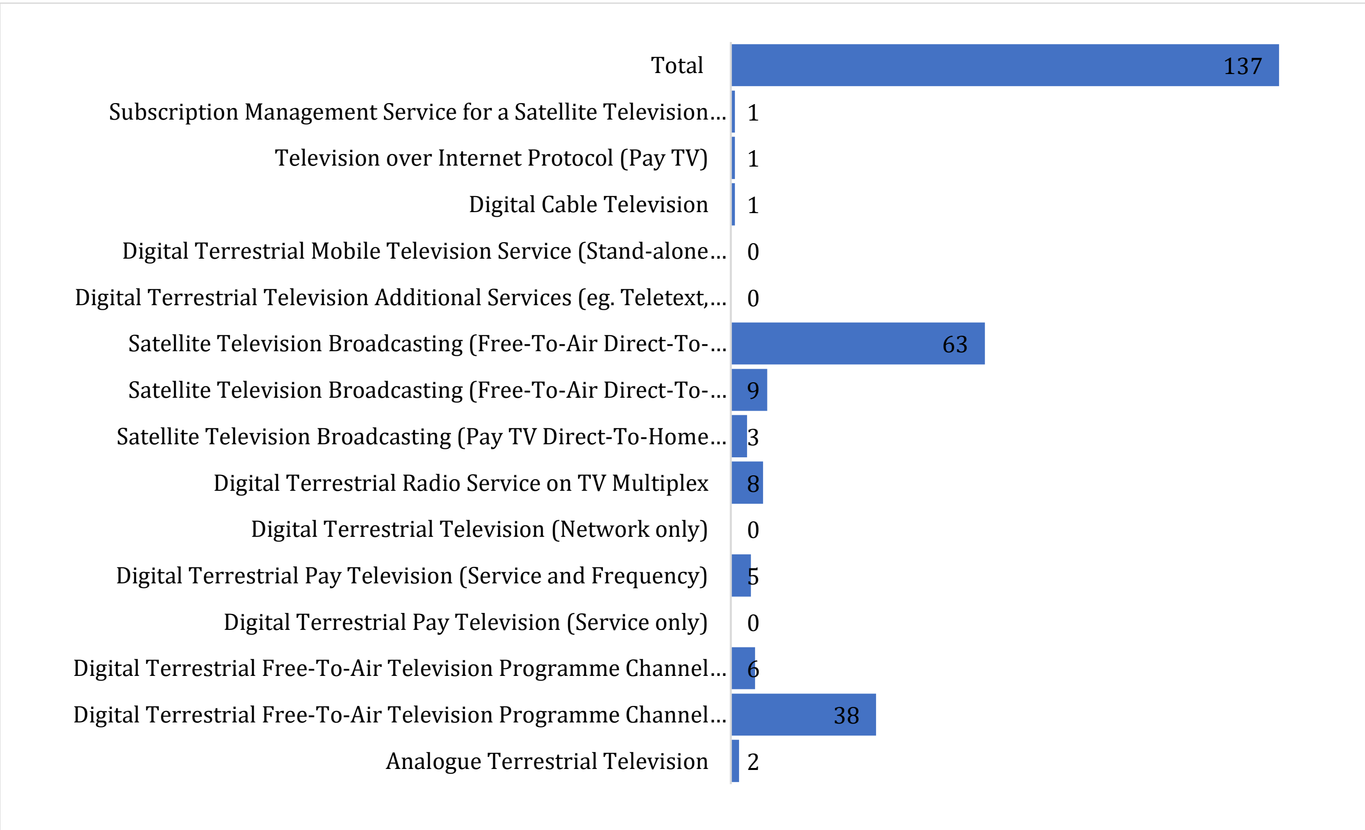
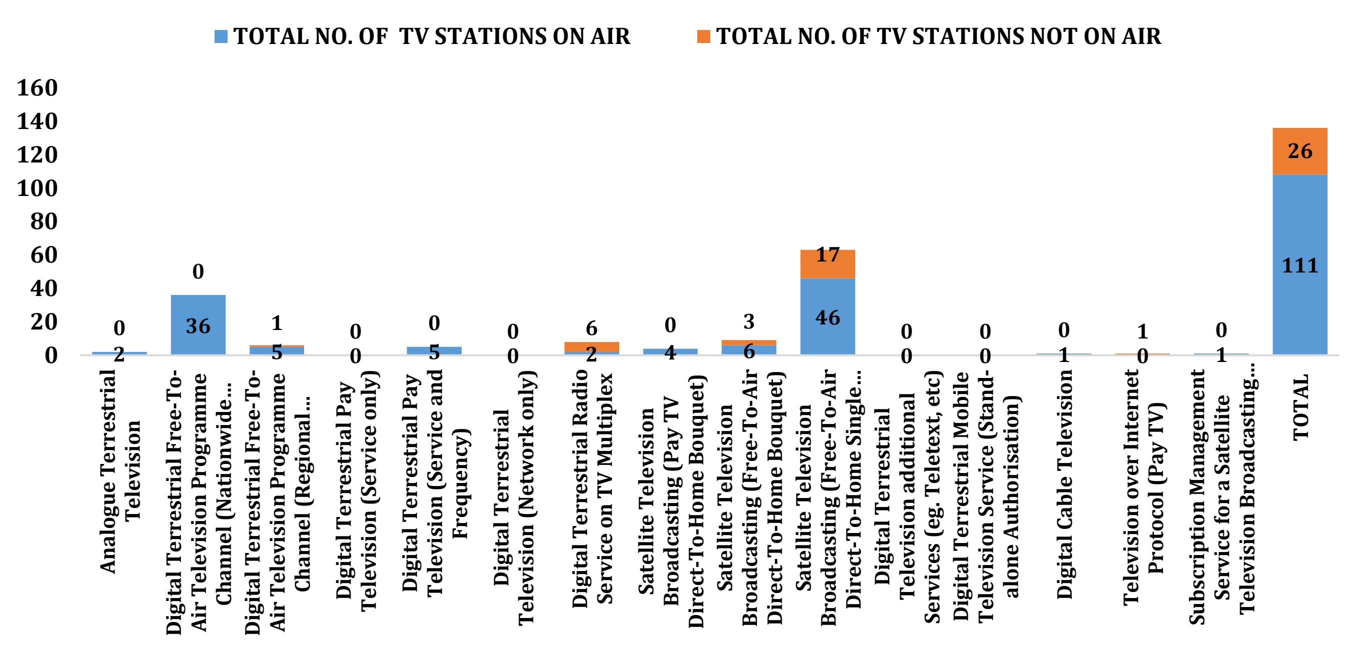


Figure 31: Distribution of Types of TV Services (On-Air and Off-Air TV Stations) as at end of Q3 2021



Appendix A (List of Tables)

Table 1: Mobile Voice Subscriptions and Penetration Rate

Subscription	**Q3 2020**	**Q4 2020**	**Q1 2021**	**Q2 2021**	**Q3 2021**
Mobile Subscription	40,352,913	40,461,609	41,418,710	41,715,259	41,777,633
Mobile Subscription Growth rate (%)	-0.31%	0.27%	2.37%	0.72%	0.15%
Net additions	-123,643.00	108,696.00	957,101.00	296,549.00	62,374.00
Net additions Growth Rate (%)	-92%	-188%	781%	-69%	-79%
Population[9]	30,737,870	30,922,666	31,108,574	31,295,599	30,792,608
Penetration Rate (%)	**131.28%**	**130.85%**	**133.14%**	**133.29%**	**135.67%**

Table 2: Mobile Voice Subscriptions and Market Share per Operator

Mobile Network Operator		**Q3 2020**	**Q4 2020**	**Q1 2021**	**Q2 2021**	**Q3 2021**
MTN	Subscriptions	23,722,910	23,144,302	23,392,300	23,504,397	23,618,300
	Market Share (%)	58.79%	57.20%	56.48%	56.34%	56.53%
Vodafone	Subscriptions	8,118,298	8,400,565	8,917,137	9,412,253	9,554,809
	Market Share (%)	20.12%	20.76%	21.53%	22.56%	22.87%
AirtelTigo	Subscriptions	7,749,026	8,135,618	8,324,512	7,984,134	7,719,165
	Market Share (%)	19.20%	20.11%	20.10%	19.14%	18.48%
Glo	Subscriptions	762,679	781,124	784,761	814,475	885,359
	Market Share (%)	1.89%	1.93%	1.89%	1.95%	2.12%
Total Industry Subscription		**40,352,913**	**40,461,609**	**41,418,710**	**41,715,259**	**41,777,633**

Table 3: Prepaid and Post-paid Voice Subscriptions and Market Share

Subscription	**Q3 2020**	**Q4 2020**	**Q1 2021**	**Q2 2021**	**Q3 2021**
Prepaid	39,589,962	40,173,414	41,134,101	41,342,136	41,485,279
Market Share	98.11%	99.29%	99.31%	99.11%	99.30%
Post-paid	762,951	288,195	284,609	373,123	292,354
Market Share	1.89%	0.71%	0.69%	0.89%	0.70%
Total mobile subscription	**40,352,913**	**40,461,609**	**41,418,710**	**41,715,259**	**41,777,633**

[9] The Ghana Statistical Service released the results of the 2021 Population and Housing Census in September 2021, which occasioned the change in population figures for Q3 2021.

Table 4: Mobile Off-net Traffic Distribution between Mobile and Fixed Network

Breakdown of Off-net Traffic	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Traffic (Mobile to Mobile)	1,866,455,132	1,919,526,571	1,916,850,431	1,885,009,496	1,912,874,245
Share (%)	99.42%	99.37	99.38%	99.37%	99.36%
Growth (%)	8.18%	2.84%	-0.14%	-1.66%	1.48%
Traffic (Mobile to Fixed)	10,961,513	12,239,493	11,879,043	11,913,424	12,247,440
Share (%)	0.58%	0.63%	0.62%	0.63%	0.64%
Growth (%)	5.25%	11.66%	-2.94%	0.29%	2.80%
Total Off-net Traffic	**1,877,416,645**	**1,931,766,009**	**1,928,729,474**	**1,896,922,920**	**1,925,121,685**

Table 5: Total Domestic Mobile Voice Traffic in Billions of Minutes

Traffic	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Traffic (Off-net)	1,877,416,645	1,931,766,009	1,928,729,474	1,896,922,920	1,925,121,685
Share (%)	7.44%	7.25%	7.07%	7.10%	6.98%
Growth (%)	8.16%	2.89%	-0.16%	-1.65%	1.49%
Traffic (On-net)	23,354,795,602	24,696,111,020	25,354,235,060	24,838,177,542	25,644,671,167
Share (%)	92.56%	92.75%	92.93%	92.90%	93.02%
Growth (%)	2.43%	5.74%	2.66%	-2.04%	3.25%
Total traffic	**25,232,212,246**	**26,627,877,029**	**27,282,964,534**	**26,735,100,463**	**27,569,792,852**

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

Traffic	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Total mobile voice traffic (Average)	8,410,737,415	8,875,959,010	9,094,321,511	8,911,700,154	9,189,930,951
Mobile voice subscription (Average)	40,473,681	40,120,522	41,198,050	41,795,710	41,485,243
Minutes of Use (MoU) per Subscription	207.81	221.23	220.75	213.22	221.52
MoU growth rate (%)	3.03%	6.46%	-0.22%	-3.41%	3.89%

Table 7: International Traffic

Traffic	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Incoming International Traffic	54,307,726	56,058,034	64,828,793	60,270,936	55,163,669
Growth (%)	-8.04%	3.22%	15.65%	-7.03%	-8.47%
Outgoing International Traffic	116,240,940	119,070,166	120,507,233	119,521,985	113,046,604
Growth (%)	-0.94%	2.43%	1.21%	-0.82%	-5.42%

Table 8: Total Number of SMS per Mobile Network Operator in Millions

Mobile Operators	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Off-net					
MTN	30,951,874	40,197,534	49,379,750	55,278,726	62,742,323
Vodafone	63,289,966	100,306,049	81,174,285	92,190,382	73,772,560
AirtelTigo	1,718,367	1,553,674	1,664,913	1,761,762	2,097,966
Glo	1,084,803	1,357,237	1,599,201	1,814,990	1,419,660
Total	**97,045,010**	**143,414,494**	**133,818,149**	**151,045,860**	**140,032,509**
On- net					
MTN	247,832,376	253,965,866	256,833,104	239,764,050	253,028,977
Vodafone	134,817,468	154,547,726	94,284,185	156,798,754	151,516,314
AirtelTigo	3,397,444	2,811,206	2,479,842	2,234,062	2,589,368
Glo	173,986	207,205	255,839	274,538	259,395
Total	**386,221,274**	**411,532,003**	**353,852,969**	**399,071,404**	**407,394,054**
Total					
MTN	278,784,250	294,163,400	306,212,854	295,042,776	315,771,300
Vodafone	198,107,434	254,853,775	175,458,470	248,989,136	225,288,874
AirtelTigo	5,115,811	4,364,880	4,144,755	3,995,824	4,687,334
Glo	1,258,789	1,564,442	1,855,040	2,089,528	1,679,055
Total	**483,266,284**	**554,946,497**	**487,671,118**	**550,117,264**	**547,426,563**

Table 9: Average SMS per Subscription

	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Total SMS (Average)	177,806,807	184,982,166	162,557,039	183,372,421	182,475,521
Mobile Subscription (Average)	40,473,681	40,120,522	41,198,050	41,795,710	41,485,243
Average SMS per Subscription	4.4	4.6	3.9	4.4	4.4

Table 10: Mobile Data Subscriptions (Prepaid/Postpaid)

Mobile Data Subscriptions		Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Prepaid	Subscriptions	25,173,301	26,130,249	22,711,711	22,608,751	23,041,438
	Market Share %)	97.52	98.72%	99.00%	98.93%	98.95%
Post-paid	Subscriptions	641,433	339,714	229,029	243,664	243,738
	Market Share %)	2.48	1.28	1.00%	1.07%	1.05%
Total mobile data subscriptions		**25,814,734**	**26,469,963**	**22,940,740**	**22,852,415**	**23,285,176**

Table 11: Mobile Data Traffic in Billions of Megabytes (MB)

Mobile Operator	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Mobile data usage (MB)	199,503,199,952	175,611,369,727	205,383,959,042	229,082,453,700	249,013,730,795

Table 12: Mobile Internet Usage per Subscription (MB)

Mobile Operator	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021
Average Mobile data usage (MB)	65,874,663,227	66,501,066,651	62,634,127,708	68,461,319,681	76,360,817,900
Average Total Subscription	25,242,452	25,625,826	26,209,072	24,013,079	22,826,343
Average Data Usage per Subscription (MB)	2609.7	2595.1	2389.8	2851.0	3345.3

Table 13: Mobile Data Traffic (MB) per Operator

Mobile Operator	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
MTN	143,363,912,915	137,170,247,517	139,889,378,482	156,551,111,192	172,790,095,331
	71.86%	78.11%	68.11%	68.34%	69.39%
Vodafone	32,215,967,959	14,720,575,836	41,765,769,242	47,425,832,605	50,148,377,173
	16.15%	8.38%	20.34%	20.70%	20.14%
AirtelTigo	18,099,179,067	17,745,451,865	17,545,739,422	18,534,563,652	18,872,129,145
	9.07%	10.10%	8.54%	8.09%	7.58%
Glo	5,824,140,011	5,975,094,509	6,183,071,896	6,570,946,251	7,203,129,146
	2.92%	3.40%	3.01%	2.87%	2.89%
Total Industry Traffic (MB)	**199,503,199,952**	**175,611,369,727**	**205,383,959,042**	**229,082,453,700**	**249,013,730,795**

Table 14: Average Mobile Tariff per Service (GHp)

Tariff	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Average on-net mobile tariff	0.12	0.12	0.12	0.12	0.12
Average off-net mobile tariff	0.13	0.13	0.12	0.13	0.12
Average on-net SMS tariff	0.05	0.05	0.05	0.05	0.05
Average off-net SMS tariff	0.06	0.06	0.06	0.06	0.06
Average data/Mb tariff	0.09	0.08	0.08	0.08	0.08

Table 15: BWA Data Subscriptions and Penetration

BWA Operator	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Subscription	52,607	42,192	53,101	53,263	53,043
Growth rate (%)	12.95%	-3.36%	25.86%	0.31%	-0.41%
Net Additions	6,032	-1,465	10909	162	-220
Population	30,737,870	30,922,666	31,108,574	31,108,574	30,792,608
Penetration Rate (%)	0.17%	0.14%	0.17%	0.17%	0.17%

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

BWA Operator	Subscription and Market Share	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Surfline	Subscription	40,992	40,462	43,511	43,462	42,848
	Market share (%)	77.92%	95.90%	81.94%	81.60%	80.78%
		8,950		6,693	6,310	6,094
Busy		17.01%		12.60%	11.85%	11.49%
	Subscription	1,069	1,730	1,725	2,435	3,045
Telesol	Market share (%)	3.06%	4.10%	3.25%	4.57%	5.74%
	Subscription	1,056	-	1,056	1,056	1,056
BBH	Market share (%)	2.01%	-	1.99%	1.98%	1.99%
BLU	Subscription	-	-	116		
	Market share (%)	-	-	0.22%		
Industry Total		**52,607**	**42,192**	**53,101**	**53,263**	**53,043**

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

BWA Operator		Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Surfline	Data usage (MB)	4,355,618,160	4,539,650,270	4,875,666,810	5,182,843,180	5,643,384,650
	Market share (%)	70.87%	73.47%	71.13%	74.33%	76.68%
Busy	Data usage (MB)	1,263,185,787		1,297,511,257	1,237,829,479	1,165,766,895
	Market share (%)	20.55%		19.15%	17.75%	15.84%
BBH	Data usage (MB)	166,554,120	160,073,400	156,318,030	157,627,020	150,607,300
	Market share (%)	2.71%	2.59%	2.28%	2.26%	2.05%
BLU	Data usage (MB)	-	82,193,014	121,838,581		
	Market share (%)	-	1.33%	1.78%		
Telesol	Data usage (MB)	360,497,460	383,119,904	403,392,124	394,015,521	399,911,382
	Market share (%)	5.87%	6.20%	5.88%	5.65%	5.43%
Industry Total (MB)		**6,145,855,527**	**6,178,537,375**	**6,854,726,802**	**6,972,315,200**	**7,359,670,228**

Table 18: Internet Usage per BWA Subscriptions (MB)

BWA Operator	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Volume of Data Traffic (Average)	2,048,618,496	2,059,512,832	2,258,868,421	2,324,105,067	2,453,223,409
Subscription (Average)	47,815	41,873	54,968	53,313	52,843
Data Usage per Subscription (MB)	42,844.98	49,184.75	41,094.49	43,593.86	46,424.76

Table 19: Fixed Network Voice Subscriptions and penetration

Fixed Operator	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Vodafone	294,157	299,802	303,749	307,585	309,461
	98.07%	97.44%	97.98%	97.59%	97.57%
AirtelTigo	5,776	6,389	3,565	3,489	3,415
	1.93%	2.08%	1.15%	1.11%	1.08%
MTN	26	1,477	2,687	4,093	4,296
	0.01%	0.48%	0.87%	1.30%	1.35%
Total industry subscription	299,959	307,668	310,001	315,167	317,172
Population	30,737,870	30,922,666	31,108,574	31,295,599	30,792,608
Fixed Network Penetration Rate (%)	0.98%	0.99%	1.00%	1.01%	1.03%

Table 20: Fixed Network Volume of Traffic in Minutes

Traffic	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
On-net Fixed voice traffic	-	-	-	-	-
Off-net fixed voice traffic	9,085,387	8,838,739	9,318,844	9,357,301	8,868,159
Total Fixed Voice Traffic	9,085,387	8,838,739	9,318,844	9,357,301	8,868,159

Table 21: Fixed Network Minute of Use per Subscriptions

Traffic (Average)	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Total Fixed Voice Traffic	3,028,462	2,946,246	3,106,281	3,119,100	2,956,313
Subscription (Average)	301,354	304,998	310,119	310,312	316,775
Minutes of Use per Subscription (MoU)	10.0	9.7	10.0	10.1	9.3
Growth Rate	11.14%	-3.88%	3.69%	0.35%	-7.15%

Table 22: Fixed Broadband Data Subscriptions and Penetration

Fixed network operator	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021
Vodafone	59,497	62,284	63,208	65,443	65,347
	75.39%	80.87%	80.97%	72.67%	70.46%
Airtel	703	700	674	658	660
	0.89%	0.91%	0.86%	0.73%	0.71%
MTN	18,724	14,038	14,186	23,951	26,741
	23.72%	18.23%	18.17%	26.60%	28.83%
Total fixed data subscription	78,924	77,022	78,068	90,052	92,748
Population	30,737,870	30,922,666	31,108,574	31,295,599	30,792,608
Fixed Data Penetration Rate (%)	0.26%	0.25%	0.25%	0.29%	0.30%

Table 23: Regional Distribution of FM Stations by Purpose as at the end of Q3 2021

Name of Regions	Public	Public (Foreign)	Community	Campus	Commercial
Ashanti	2	1	12	4	76
Bono	1	-	3	2	46
Bono East	2	-	4	-	24
Ahafo	-	-	1	-	11
Central	2	-	11	3	37
Eastern	2	-	13	1	33
Greater Accra	2	3	9	4	50
Northern	3	-	7	2	38
Savannah	3	-	4	-	4
North East	1	-	4	-	7
Upper East	2	-	9	3	20
Upper West	2	-	11	2	15
Volta	3	-	4	1	37
Oti	1	-	3	-	10
Western	2	1	8	2	68
Western North	3	-	-	-	20
Total	**31**	**5**	**103**	**24**	**496**

Table 24: Regional Distribution of FM Stations as at the end of Q3 2021

Name Of Regions	Authorized FM Stations	FM Stations In Operation
Ashanti	95	79
Bono	52	40
Bono East	30	26
Ahafo	12	8
Central	53	39
Eastern	49	39
Greater Accra	68	61
Northern	50	27
Savannah	11	8
North East	12	3
Upper East	34	22
Upper West	30	18
Volta	45	36
Oti	14	9
Western	81	56
Western North	23	17
Total	**659**	**488**

Table 25: Authorised TV Stations as at the end of Q3 2021

Type of Television Service	Authorised TV Stations		No. of TV Stations in Operation (Q3 2021)	No. of TV Stations not in Operation (Q3 2021)
	End of Q2 2021	End of Q3 2021		
Analogue Terrestrial Television	2	2	2	0
Digital Terrestrial Free-To-Air Television Programme Channel (Nationwide Coverage)	36	38	36	0
Digital Terrestrial Free-To-Air Television Programme Channel (Regional Coverage)	6	6	6	0
Digital Terrestrial Pay Television (Service only)	0	0	0	0
Digital Terrestrial Pay Television (Service and Frequency)	5	5	5	0
Digital Terrestrial Television (Network only)	0	0	0	0
Digital Terrestrial Radio Service on TV Multiplex	8	8	2	6
Satellite Television Broadcasting (Pay TV Direct-To-Home Bouquet)	3	3	3	0

Satellite Television Broadcasting (Free-To-Air Direct-To-Home Bouquet)	9	9	6	3
Satellite Television Broadcasting (Free-To-Air Direct-To-Home Single Channel)	63	63	48	15
Digital Terrestrial Television Additional Services (e.g. Teletext, etc.)	0	0	0	0
Digital Terrestrial Mobile Television Service (Stand-alone Authorisation)	0	0	0	0
Digital Cable Television	1	1	1	0
Television over Internet Protocol (Pay TV)	1	1	1	0
Subscription Management Service for a Satellite Television Broadcasting (Pay TV Direct-To-Home Bouquet)	1	1	0	1
Total	**135**	**137**	**111**	**26**

Source: NCA, 2021

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

- ### Accra Office

National Communications Authority
1st Rangoon Close,
Switchback Road, Cantonment, Accra
P. O. Box CT 1568,
Cantonment, Accra
Tel: +233 (0) 553 369862, (0) 553 432215
E-mail: complaints.accra@nca.org.gh

- ### Bolgatanga Office

National Communications Authority,
Zorbisi Zaare Residential Area in Bolgatanga Municipality
Private Mail Bag, Bolgatanga,
Upper East Region
Tel: +233 (0) 3820 21141
E-mail: complaints.bolgatanga@nca.org.gh

- ### Ho Office

National Communications Authority,
Plot No. 75, Stadium Road, Kabore Junction
P. O. Box HP1576, Ho, Volta Region
Tel: +233 (0) 3620 26339
E-Mail: complaints.ho@nca.org.gh

- ### Koforidua Office

National Communications Authority,
Block C along the Galloway Road
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,
Fuller Road, 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

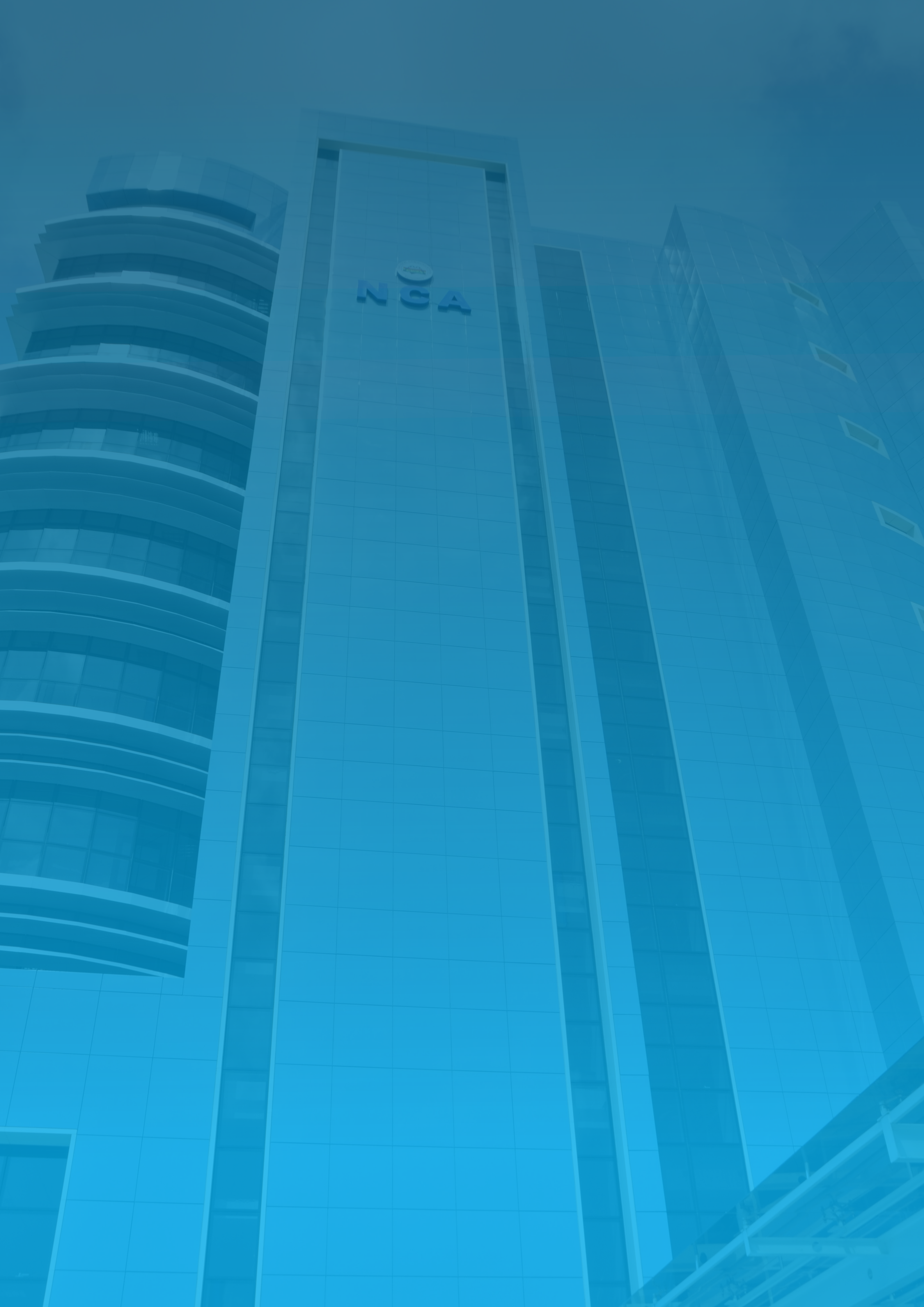
National Communications Authority,
House No 83, North Nkwabeng
P. O. Box SY125, Sunyani, Brong Ahafo Region
Tel: +233 (0) 3520 27564
E-Mail: complaints.sunyani@nca.org.gh

- ### Takoradi Office

National Communications Authority,
Bakado, 3kms away from the Prisons
(R.S.,K. Barnes Ct, Sekondi - Takoradi
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
Plot No. 3 & 4, Tamale
P. O. Box TL 1590, Tamale,
Northern Region, Ghana
Tel: + 233 (0) 37 202 8105 / 37 020 8104
Fax: +233 (0) 37 202 8104
E-Mail: complaints.tamale@nca.org.gh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