QUARTERLY STATISTICAL BULLETIN ON COMMUNICATIONS IN GHANA

Volume 6 Issue 1

NATIONAL COMMUNICATIONS AUTHORITY

FIRST QUARTER

JANUARY - MARCH, 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".

[1] MTN, Vodafone, AirtelTigo, Glo, Surfline, BBH, Telesol 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	139	100
FM Stations	629	459

B1. Total Subscriptions

SUBSCRIPTION	QUARTER-ON-QUARTER			YEAR-ON-YEAR			Units
	Q4 2020	Q1 2021	*Growth (%)*	Q1 2020	Q1 2021	*Growth (%)*	
Mobile Voice Subscription	40.46	41.42	*2.37%*	41.96	41.42	*-1.29%*	Million
Fixed Voice Subscription	307.67	310.00	*0.76%*	295.81	310.00	*4.80%*	Thousand
Mobile Data Subscription	26.47	22.94	*-13.34%*	25.63	22.94	*-10.50%*	Million
Fixed Data Subscription	77.02	78.07	*1.36%*	75.14	78.07	*3.90%*	Thousand
Broadband Wireless Access	42.19	53.10	*25.86%*	47.22	53.10	*12.45%*	Thousand

B2. Voice, Data and SMS Traffic

TRAFFIC	QUARTER-ON-QUARTER			YEAR-ON-YEAR			Units
	Q4 2020	Q1 2021	*Growth (%)*	Q1 2020	Q1 2021	*Growth (%)*	
Mobile Voice Traffic (Domestic)	26.63	27.28	*2.44%*	22.97	27.28	*18.76%*	Billion minutes
Fixed Voice Traffic	8.84	9.32	*5.43%*	10.30	9.32	*-9.51%*	Million minutes
Incoming International Traffic (Direct to Network Only)	56.06	64.83	*15.64%*	51.47	64.83	*25.96%*	Million minutes
Outgoing International Traffic	119.07	120.51	*1.21%*	122.78	120.51	*-1.85%*	Million minutes
Mobile Data Traffic (MB)	175.61	205.38	*16.95%*	157.69	205.38	*30.24%*	Billion MB
BWA Data Traffic (MB)	6.18	6.85	*10.84%*	3.63	6.85	*88.71%*	Billion MB
SMS Count	554.95	487.67	*-12.12%*	501.50	487.67	*-2.76%*	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		
	Q4 2020	Q1 2021	*Growth (%)*	Q1 2020	Q1 2021	*Growth (%)*
Mobile Voice Subscription	130.85	133.14	*1.75%*	138.15	133.14	*-3.63%*
Fixed Voice Subscription	0.99	1.00	*1.01%*	0.97	1.00	*3.09%*
Mobile Data Subscription	85.60	73.74	*-13.86%*	84.39	73.74	*-12.62%*
Fixed Data Subscription	0.25	0.25	*0.00%*	0.25	0.25	*0.00%*
Broadband Wireless Access	0.14	0.17	*21.43%*	0.16	0.17	*6.25%*

C1. Broadcasting Sector

FM/TV AUTHORISATION & OPERATIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q4 2020	Q1 2021	*Growth (%)*	Q1 2020	Q1 2021	*Growth (%)*
FM Authorisation	630	629	*-0.16%*	543	629	*15.84%*
FM Station Operating	459	465	*1.29%*	403	465	*13..33%*
TV Authorisations	143	136	*-5.15%*	144	136	*-5.88%*
TV Stations Operating	115	110	*-4.55%*	101	110	*8.18%*

C2. Categories of Authorised FM Radio Stations

CATEGORIES OF FM RADIO STATIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q4 2020	Q1 2021	*Growth (%)*	Q1 2020	Q1 2021	*Growth (%)*
PUBLIC	31	31	*0.00%*	31	31	*0.00%*
PUBLIC FOREIGN	5	5	*0.00%*	5	5	*0.00%*
CAMPUS	23	23	*0.00%*	21	23	*9.52%*
COMMUNITY	96	96	*0.00%*	79	96	*21.52%*
COMMERCIAL	475	474	*-0.21%*	405	474	*17.04%*

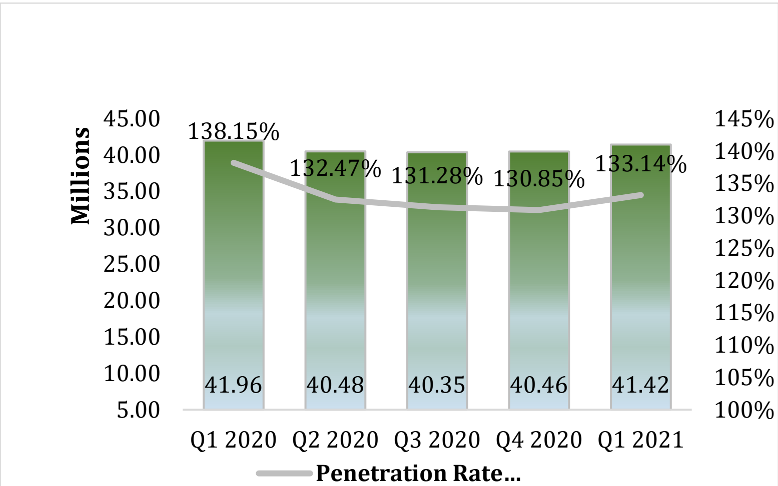
1.0 Mobile Network

This section provides information 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 and mobile data subscriptions. There are four service providers licensed by the National Communications Authority (NCA) to provide mobile telecoms services in Ghana namely AirtelTigo, Glo, MTN and Vodafone.

Examining net additions to mobile subscription provides further insight into the growth of the industry. Net additions are the outcome of subscriber acquiring additional mobile wireless devices, such a tablets, phones as well as subscriber particularly people purchasing mobile wireless service for the first time. Total net additions to mobile subscription recorded a growth of 780.53% in the quarter under review from 108,696 in the fourth quarter at 957,101.

1.1 Mobile Voice Subscriptions and Penetration Rate[3]

Figure 1: Mobile Voice Subscription and Penetration **Rate**



Mobile Voice subscriptions increased from 40.46 million at the end of Q4 2020 to 41.42 million at the end of Q1 2021, representing a growth of 2.37%.

Year-on-year subscriptions decreased from 41.96 million at the end of Q1 2020 to 41.42 million at the end of Q1 2021, recording a negative growth of 1.29%.

The penetration rate as at the end of the first quarter of 2021 was 133.14% as compared to 130.85% recorded in the fourth quarter of 2020, indicating a growth of 1.75% (Figure 1) (Appendix, Table 1).

[3]The 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 2010 Population Census figure 24,658,823 published by Ghana Statistical Service (GSS) with 0.2% projected monthly growth rate. The High Penetration Rate is partly attributed to people owning more than one SIM card.

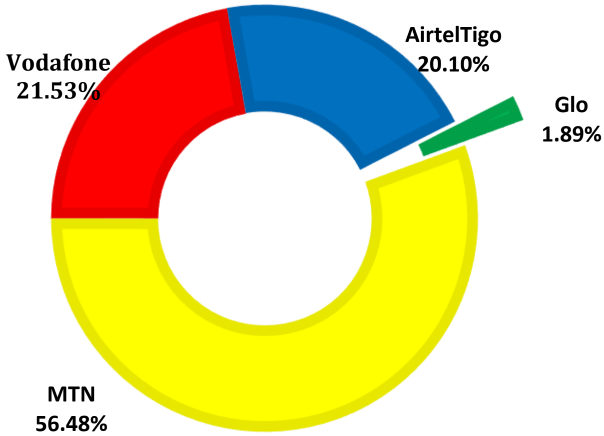
1.1.1 Voice Subscription Market Share per Operator

At the end of Q1 2021, MTN had 56.48% of the market with 23.39 million subscriptions, followed by Vodafone with 8.92 million subscriptions (21.53%).

AirtelTigo is the third largest mobile network operator by subscription with a market share of 20.10% and a subscriber base of 8.32 million.

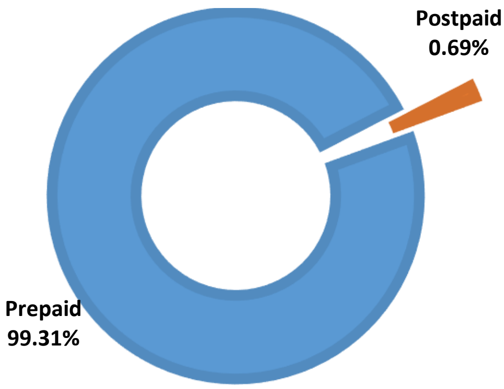
Glo recorded 0.78 million subscriptions with a market share of 1.89% (Figure 2) (Appendix, Table 2).

Figure 2: Market Share per Operator



1.1.2 Prepaid and Postpaid Mobile Voice Subscriptions

Figure 3: Prepaid and Postpaid Mobile Voice Subscriptions



Mobile voice subscription for prepaid subscribers is 41.13 million representing a market share of 99.31% whilst postpaid stood at 0.69% with a subscription of 0.28 million (Figure 3) (Appendix, Table 3).

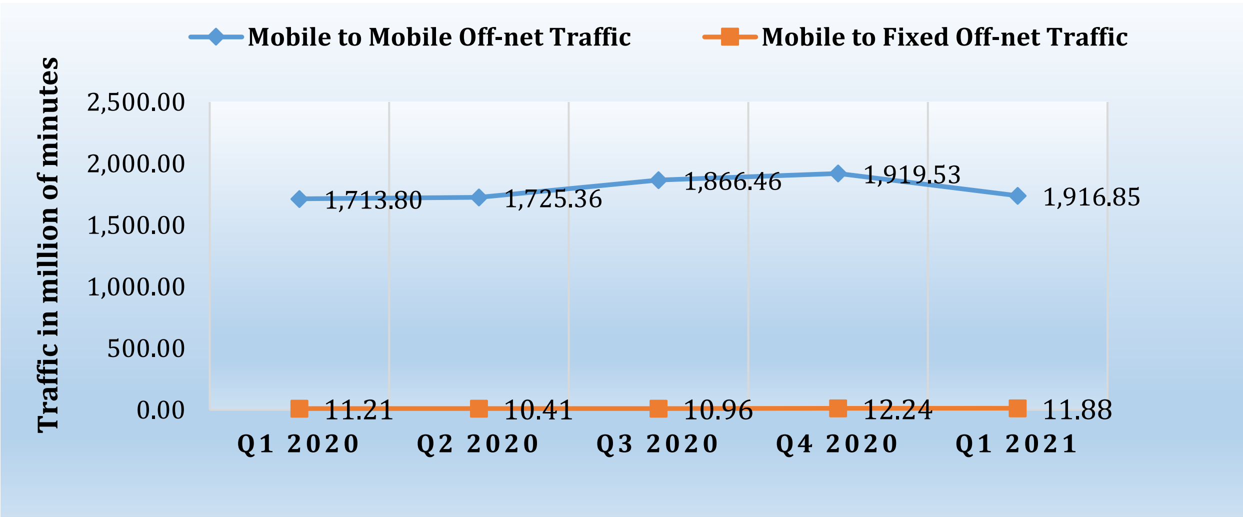
1.2 Off-net Mobile Voice Traffic (Domestic)

Mobile-to-mobile off-net traffic decreased from 1.919 billion minutes at the end of Q4 2020 to 1.916 billion minutes at the end of Q1 2021 representing a decline in growth by 0.14%.

Year-on-year mobile-to-mobile off-net traffic increased from 1.714 billion minutes at the end of Q1 2020 to 1.916 billion minutes at the end of Q1 2021, representing a growth of 11.85%.

Quarter-on-quarter mobile to fixed off-net traffic decreased from 12.24 million minutes to 11.88 million minutes representing a negative growth of 2.94%. Year-on-year mobile-to-fixed off-net traffic decreased from 11.21 million minutes at the end of Q1 2020 to 11.88 million minutes at the end of Q1 2021, representing 5.97% growth (Figure 4) (Appendix, Table 4).

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



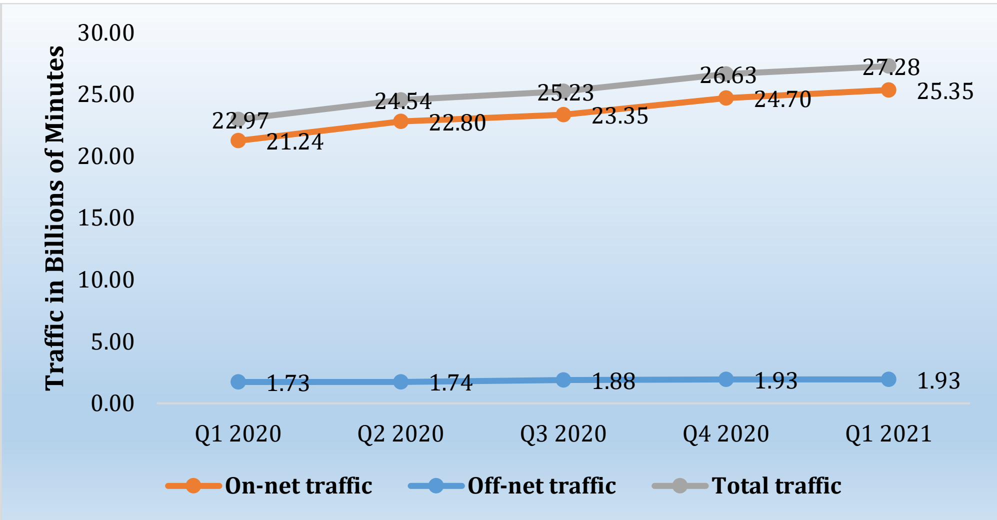
1.2.1 Total Domestic Mobile Voice Traffic

Total domestic mobile voice traffic recorded a rise from 26.63 billion minutes in Q4 2020 to 27.28 billion minutes in Q1 of 2021, representing 2.46% growth. Year-on-year mobile voice traffic also increased from 22.97 billion minutes at the end of the first quarter of 2020 to 27.28 billion minutes in the first quarter of 2021, representing a growth rate of 18.79%

Off-net traffic decreased from 1.931 billion minutes at the end of Q4 2020 to 1.928 billion minutes at the end of Q1 2021, representing a decline in growth of 0.16%. Year-on-year off-net traffic increased by 11.81%, from 1.725 billion minutes in Q1 2020 to 1.928 billion minutes at the end of Q1 2021.

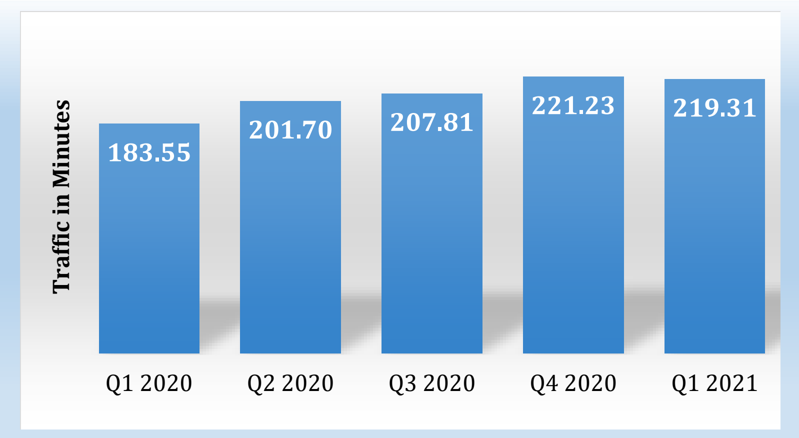
On-net traffic increased from 24.70 billion minutes in the previous quarter to 25.35 billion minutes during the quarter under review, representing a growth rate of 2.66%. Year-on-year on-net traffic also grew from 21.24 billion minutes in Q1 2020 to 25.35 billion minutes at the end of Q1 2021 representing 19.35% 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]

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



Quarter-on-quarter average minutes of use per subscription declined from 221.23 minutes in Q4 2020 to 219.31 minutes (-0.87%) in Q1 2021.

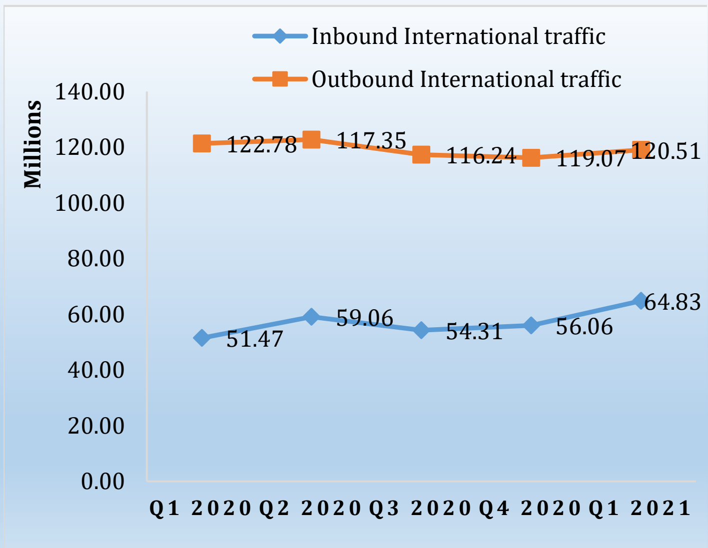
Year-on-year minutes of use per subscription grew from 183.55 minutes in Q1 2020 to 219.31 minutes in Q1 2021, representing 19.48% growth (figure 6) (Appendix, Table 6).

1.3 International Traffic

During the quarter under review, inbound international traffic increased from 56.06 million minutes to 64.83 million minutes, representing an increase of 15.64%. Year-on-year inbound international traffic increased from 51.47 million minutes to 64.83 million minutes representing a decrease in growth by 25.96%.

Outbound international traffic increased from 119.07 million minutes in Q4 2020 to 120.51 million minutes at the end of Q1 2021, representing an increase of 1.21%. Year- on –year outbound international traffic declined from 122.78 million minutes to 120.51 million minutes, indicating a decrease of 1.85% (Figure 7) (Appendix, Table 7).

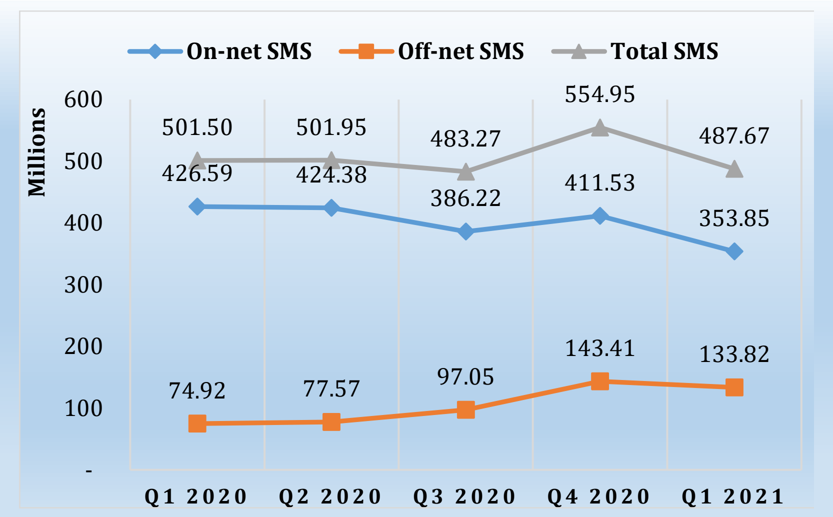
Figure 7: International Traffic in Minutes (Millions)



[4] 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.

1.4 Short Messages Service (SMS)

Figure 8: Total Number of SMS



The total number of short messages service (SMS) sent at the end of Q1 2021 was 487.67 million as compared to 554.95 million in the preceding quarter, recording a 12.12% decrease.

Year-on-year SMS counts went down from 501.50 million in Q1 2020 to 487.67 million at the end Q1 2021, representing a decrease of 2.76% (figure 8) (Appendix, Table 8).

1.4.1 SMS Counts per Mobile Network Operator/Market Share

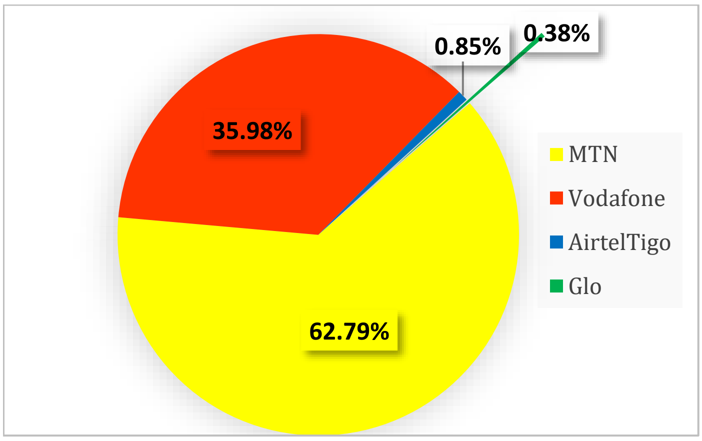
The volume of SMS traffic originating from MTN was 306.21 million at the end of Q1 2021; representing a market share of 62.79% of the total, SMS count.

The volume of SMS traffic from Vodafone was 175.46 million, representing a market share of 35.98% of the total SMS count.

AirtelTigo had an SMS count of 4.14 million, representing 0.85% of the market share of the total SMS count.

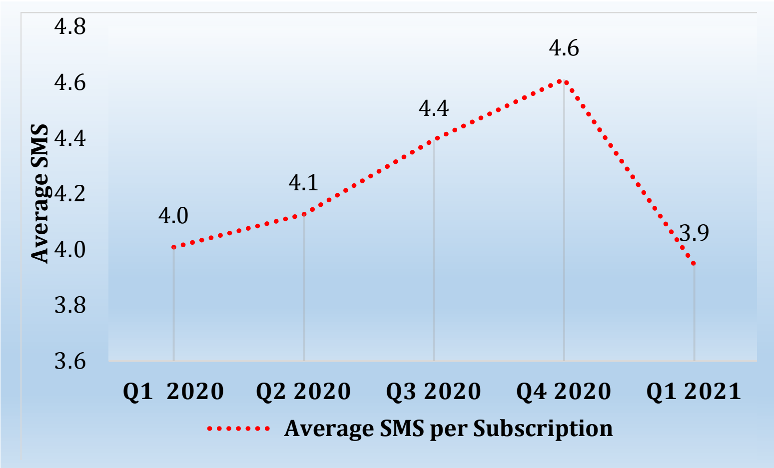
Glo generated 1.86 million SMS count recording a share of 0.38% (Figure 9) (Appendix, Table 8).

Figure 9: Average SMS per Mobile Network Operator



1.4.2 Average SMS per subscription

Figure 10: Average SMS per Subscription

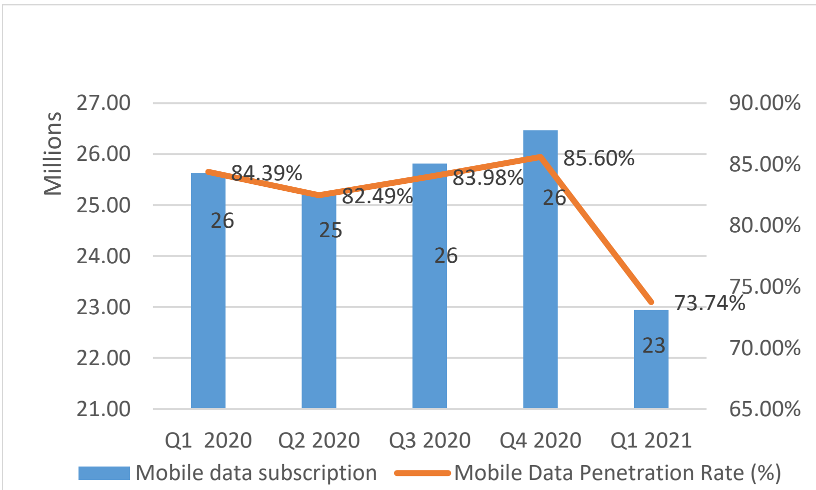


Quarter-on-quarter average SMS sent per subscription at the end of Q1 2021 was about 4 SMS, indicating a decrease of 14.42% as compared to the end of Q4 2020, which was 5.

Year-on-year average SMS volume per subscription decreased from approximately 4.0 at the end of Q1 2020 to 3.9 at the end of Q1 2021, recording a decrease of 1.55% (Figure 10) (Appendix, Table 9).

1.5 Mobile Data Subscriptions and Penetration Rate (%)

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

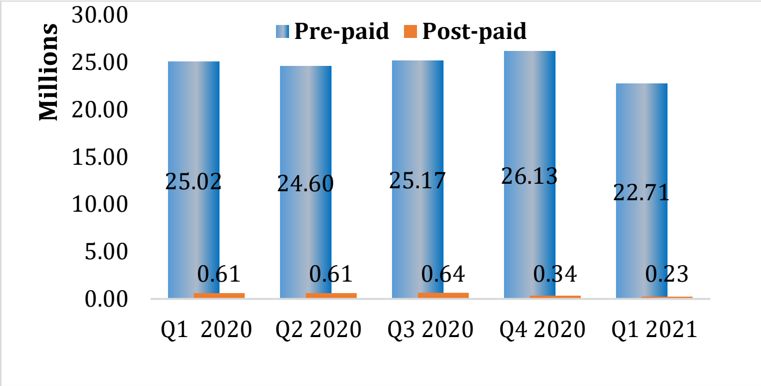


At the end of Q1 2021, mobile data subscriptions decreased by 13.34% from 26.47 million at the end of Q4 2020 to 22.94 million.

Year-on-year subscriptions decreased by 10.50%, from 25.63 million at the end of Q1 2020 to 22.94 million at the end of Q1 2021 (Figure 11) (Appendix, Table 10).

1.5.1 Mobile Data Pre-paid and Post-paid Subscriptions

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



Mobile data pre-paid subscriptions decreased from 26.13 million in the fourth quarter of 2020 to 22.71 million subscriptions at the end of the first quarter of 2021, representing 99% of the total mobile data.

Mobile data post-paid subscriptions also decreased from 0.34 million in the fourth quarter of 2020 to 0.23 million subscriptions representing 1% of the total mobile data at the end of Q1 2021 (Figure: 12) (Appendix, Table 10).

1.5.2 Mobile Data Subscriptions per Mobile Network Operator /Market Share

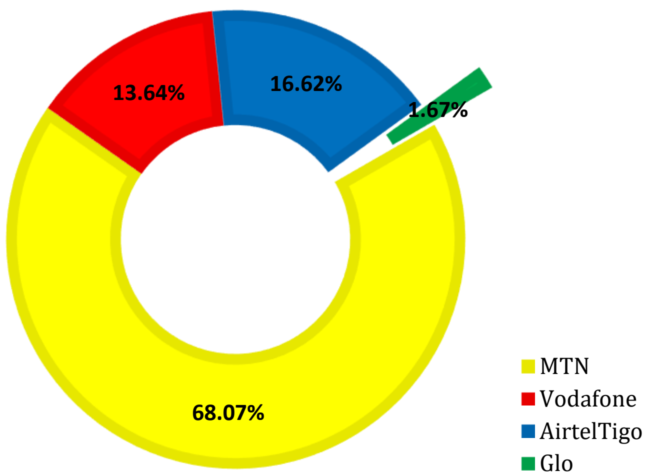
MTN recorded 15.62 million subscriptions with a market share of 68.07%.

Vodafone also recorded 3.13 million subscriptions with a market share of 13.64%.

AirtelTigo had 3.81 million in mobile data subscriptions with a market share of 16.62%.

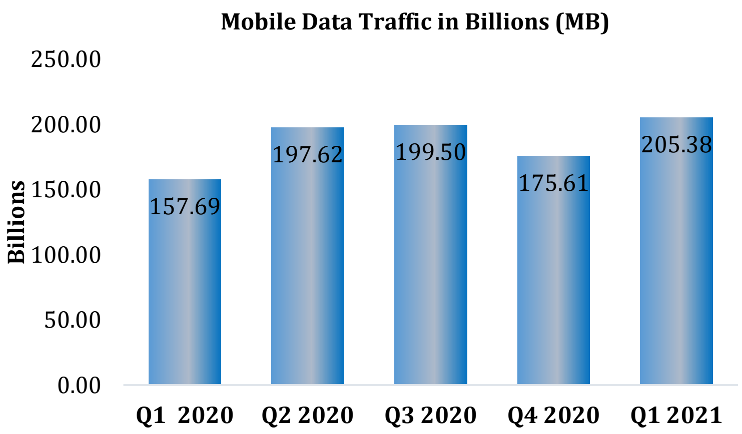
Glo ended the first quarter of 2021 with a total data subscription of 0.38 million and a market share of 1.67% (Figure 13).

Figure 13: Market Share per Operator



1.6 Mobile Data Traffic in Billions of Megabytes (MB)

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



At the end of Q1 2021, internet traffic generated by the mobile network operators was 205.38 billion megabytes of data, recording an increase in growth by 16.95% as compared to 175.61 billion megabytes of data at the end Q4 2020.

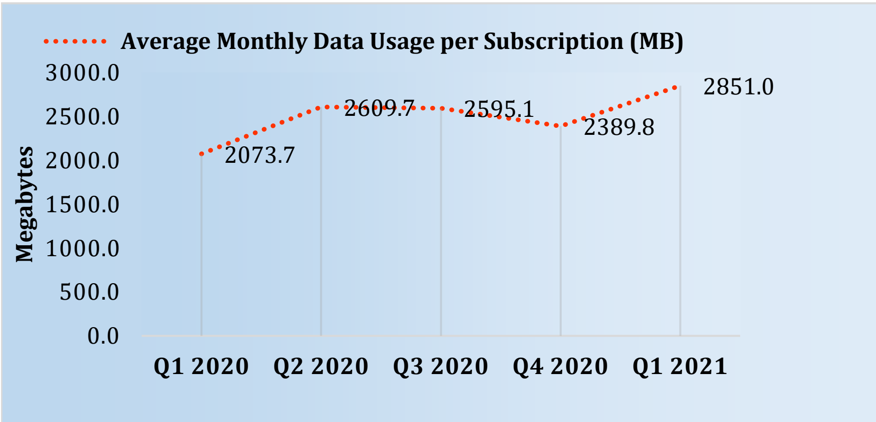
Year-on-year internet traffic increased from 157.69 billion megabytes at the end of Q1 2020 to 205.38 billion megabytes at the end of Q1 2021, representing an increase of 30.24% (Figure 14) (Appendix, Table 11).

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

The average mobile internet usage per subscription increased from 2389.8 megabytes at the end of Q4 2020 to 2851.0 megabytes at the end of Q1 2021 recording a growth of 19.30%.

Year-on- year average data usage per subscription increased from 2073.7 at the end of Q1 2020 to 2851.0 at the end of Q1 2021, recording a growth of 37.49% (Figure 15) (Appendix, Table 12).

Figure 15: Mobile Data Usage per Subscription (MB)



[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.

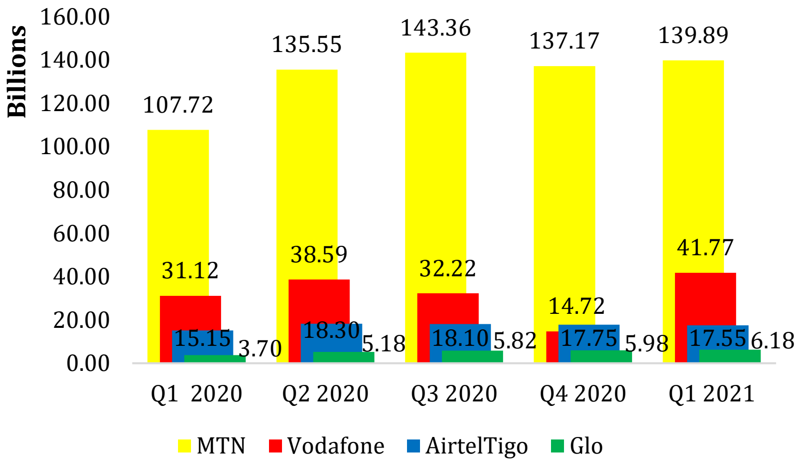
1.6.2 Mobile Internet Traffic (MB) per Mobile Network Operator

MTN generated the highest volume of internet traffic of 139.89 billion megabytes with a market share of 68.11%, followed by Vodafone with a traffic of 41.77 billion megabytes and a market share of 20.24%.

AirtelTigo also had 17.55 billion megabytes of data, recording a market share of 8.54%.

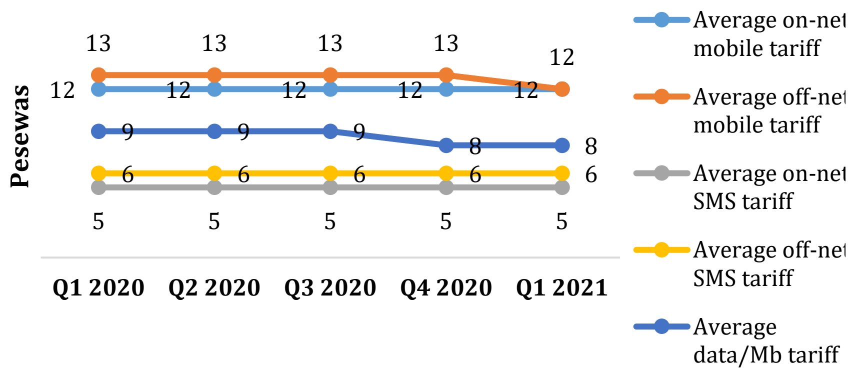
Glo recorded the least data usage, generating 6.18 billion megabytes with a market share of 3.01% (Figure 16) (Appendix, Table 13)

Figure 16: Mobile Internet Traffic (MB) per Operator



1.7 Mobile Telecommunications Service Tariffs

Figure 17: Average Mobile Tariffs per Service



Quarter- on -quarter average tariffs for SMS and mobile voice have not changed. The quarter-on-quarter average tariffs for data have also not changed.

The industry average tariff for year-on-year on net mobile tariff stood at 0.12 pesewas whereas off net mobile tariff decreased from 0.13 to 0.12 pesewas.

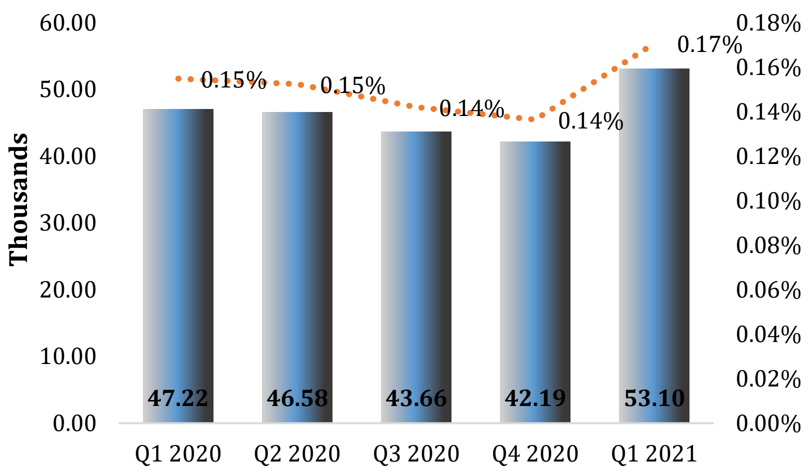
The average data tariff for year-on-year reduced by a pesewa to 0.08 pesewas per megabyte. The tariff for SMS however remained unchanged (0.06 pesewas). (Figure 17) (Appendix, Table 14).

2.0 BROADBAND WIRELESS ACCESS (BWA)

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

2.1 BWA Subscriptions and Penetration Rate

Figure 18: BWA Subscription and Penetration Rate



BWA subscriptions increased from 42.19 in the fourth quarter of 2020 to 53.10 in the first quarter of 2021, representing an increase in growth by 25.86%.

Year-on-year subscriptions also increased from 47.22 in the first quarter of 2020 to 53.10 at the end of the first quarter of 2021, recording a growth 12.47%.

Penetration rate for broadband wireless access also increased from 0.14% in the previous quarter to 0.17% in the quarter under review. (Figure 18) (Appendix, Table 15).

2.1.1 Subscriptions per Broadband Wireless Access (BWA) Operator

Surfline recorded 43.51 subscriptions at the end of the quarter under review, representing 81.94% of market share.

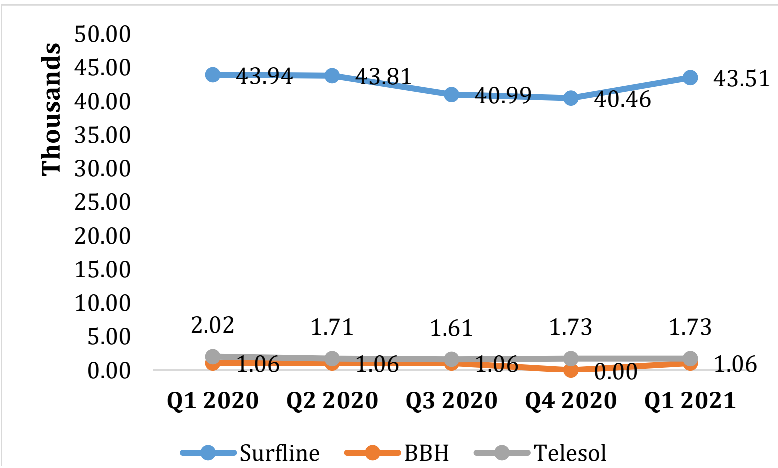
Busy ended this quarter with a subscription of 6,693 and a market share of 12.60%.

Telesol recorded 1,725 subscriptions this quarter with a market share of 3.25%

BBH had a subscription of 1,056 and a market share of 1.99% at the end of the first quarter of 2021.

BLU at the end of the quarter had a market share of 0.22% with a subscription of 116 (Figure 19) (Appendix, Table 16).

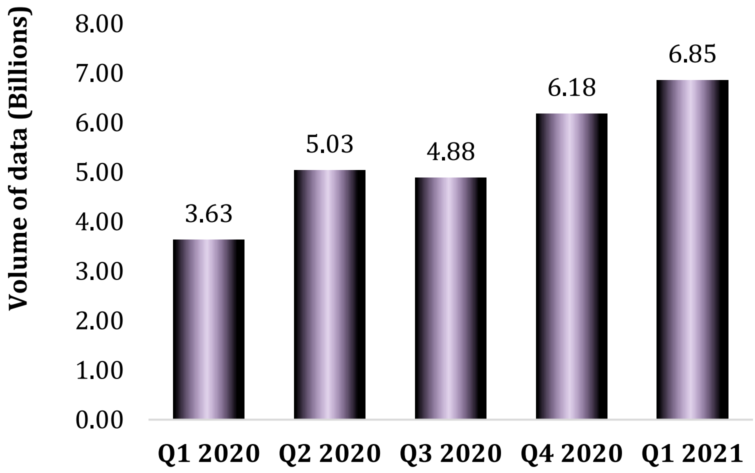
Figure 19: Subscriptions per Broadband Wireless Access (BWA) Operator



[6] As at the time of preparation of the report, only Q1 data was available for Busy Internet and BLU.

2.2 Broadband Wireless Access (BWA) Volume of Internet Traffic

Figure 20: BWA Internet Traffic in Megabyte (MB)



The total volume of internet traffic generated by the BWAs increased from 6.18 billion megabytes at the end of Q4 2020 to 6.85 billion megabytes at the end of Q1 2021, indicating an increase of 10.94%.

Year-on-year internet traffic increased from 3.63 billion megabytes at the end of Q1 2020 to 6.85 billion megabytes at the end of Q1 2021, representing a growth of 88.88% (Figure 20) (Appendix A, Table 17).

2.2.1 Volume of BWA Traffic per Operator

Surfline's total volume of internet traffic for the quarter under review was 4.88 billion MB, representing 71.13% of the total volume of traffic.

Busy had a total internet traffic of 1.31 billion MB with a market share of 18.93%.

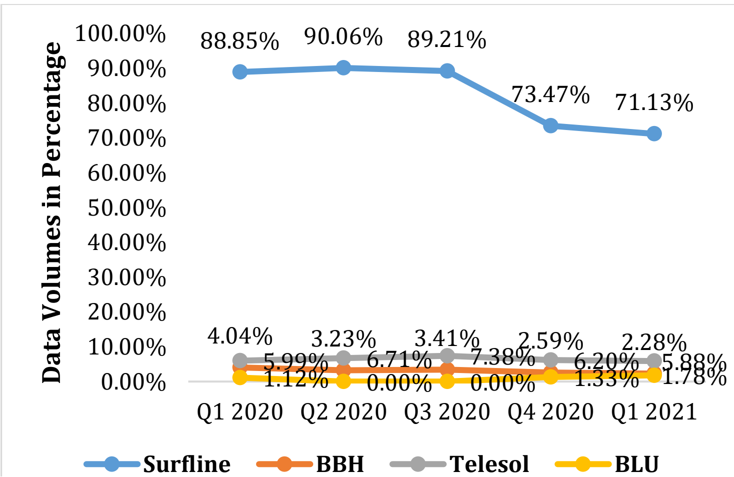
Telesol recorded 0.403 billion MB with a market share of 5.88%

BBH ended the Q1 2021 with 0.156 billion MB of volume of internet traffic and a market share of 2.28%

BLU also recorded a total of 0.123 billion MB volume of internet traffic and a market share of 1.78%

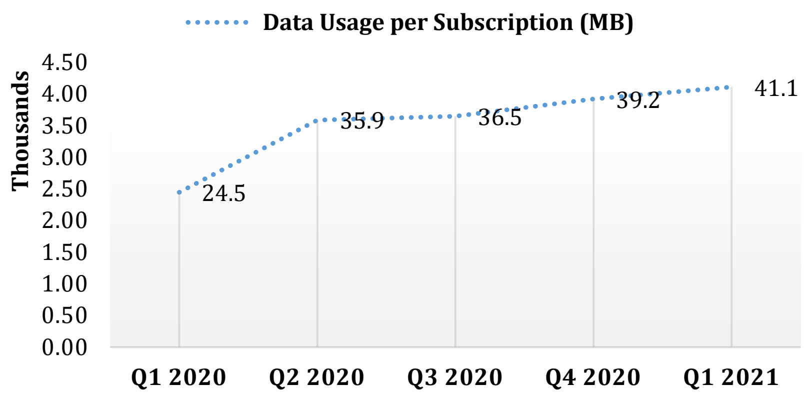
(Figure 21) (Appendix, Table 17).

Figure 21: BWA Traffic Market Share per Operator (MB)



2.2.2 Average Monthly Internet Usage per BWA Subscription[7]

Figure 22: Average Internet Usage per BWA Subscription



Average internet usage per BWA subscription increased to 41.1 thousand megabytes in the first quarter of 2021 from 39.2 thousand megabytes in the previous quarter.

Year-on-year internet usage per subscription also increased from 24.5 megabytes in the first quarter of 2020 to 41.1 megabytes at the end of the first quarter of 2021 (Figure 22) (Appendix, Table 18).

[7] BWA 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

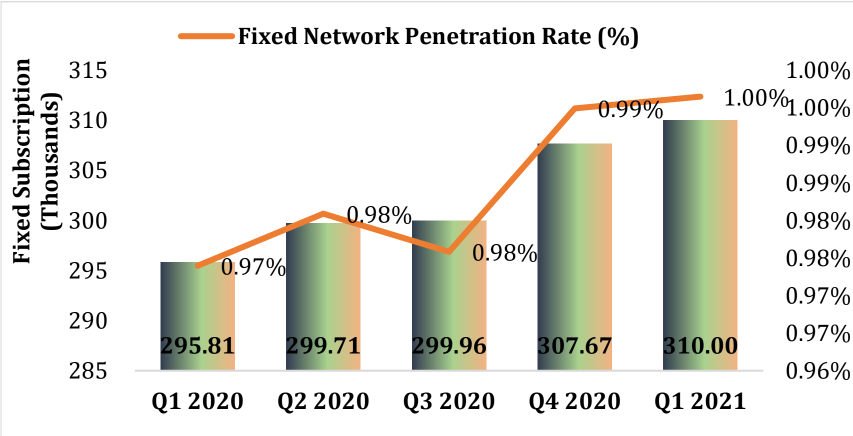
This section analyses the fixed telephone industry in Ghana. Three (3) operators namely Vodafone, AirtelTigo and MTN have been licensed by the NCA to provide this service.

3.1Fixed Voice Subscriptions and Penetration Rate

Total number of fixed line subscriptions increased from 307,668 in the fourth quarter of 2020 to 310,001 at the end of the first quarter of 2021. This shows a penetration rate of 1.00% and a 0.76% growth in subscriptions.

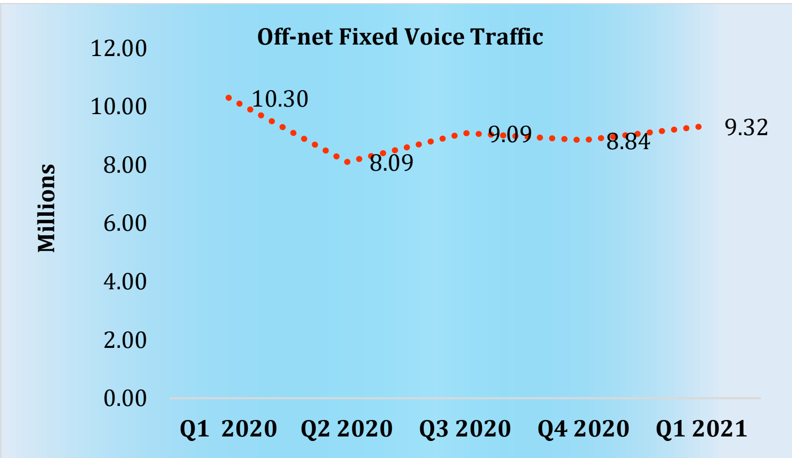
Year-on-year subscription increased from 295,814 in Q1 2020 to 310,001 at the end of Q1 2021, representing a growth of 4.80% (Figure 23) (Appendix, Table 19).

Figure 23: Fixed Network Voice Subscription and Penetration Rate



3.2 Fixed Voice Network Traffic

Figure 24: Total Fixed Voice Traffic



Total fixed voice traffic increased by 5.43% during the quarter under review, from 8.84 million minutes in Q4 2020 to 9.32 million minutes.

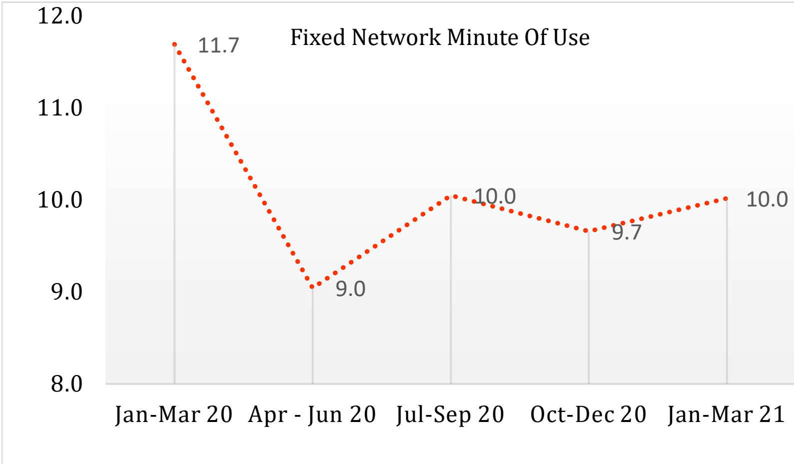
Year-on-year total fixed voice traffic decreased by 9.49%, from 10.30 million minutes in Q1 2020 to 9.32 million minutes (Figure 24) (Appendix, Table 20).

3.3 Fixed Voice Average Minute of Use[8]

Average fixed voice traffic per subscription increased from 9.7 to 10.0 minutes at the end of the first quarter of 2021 (3.69%).

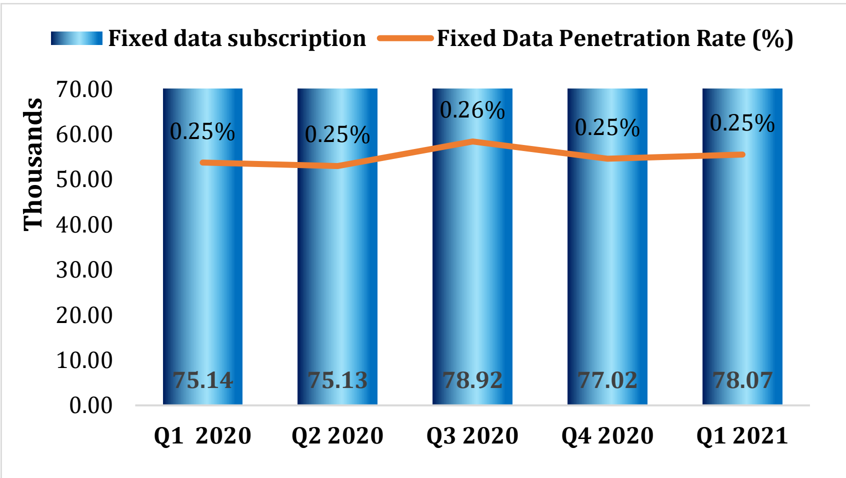
Year-on-year minutes of use per subscription declined from 11.7 minutes in the first quarter of 2020 to 10.0 minutes at the end of the first quarter of 2021 (14.33%) (Figure 25) (Appendix A, Table 21).

Figure 25: Fixed Network Minute of Use



3.4 Fixed Data Subscriptions and Penetration

Figure 26: Fixed Data Subscriptions and Penetration



Fixed Data subscriptions increased from 77,022 in the previous quarter to 78,068 in the quarter under review recording a growth of 1.36%.

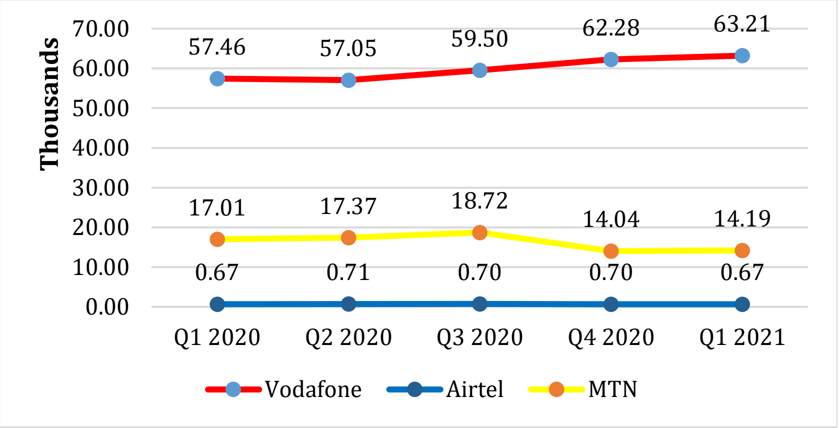
Year-on-year fixed data subscriptions increased from 75,137 in the preceding year to 78,068 at the end of the first quarter of 2021, recording a growth of 3.90%.

Fixed data penetration stood at 0.25% at the end of the first quarter of 2021. (Figure 26) (Appendix, Table 22).

[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.

3.5 Fixed Data Subscriptions per Mobile Network Operator

Figure 27: Fixed Data Subscription per Operator



Vodafone's subscriptions at the end of the first quarter of 2021 was 63,208 representing 80.97% of the market share.

MTN's subscriptions at the end of the first quarter of 2021 was 14,186 representing 18.17% of the market share.

AirtelTigo recorded 674 subscriptions at the end of Q1 2021 with a market share of 0.86%. (Figure 27) (Appendix, Table 23).

4.0 BROADCASTING

4.1 Authorised Frequency Modulation (FM) Radio Station

The total number of authorised FM stations in Ghana as at the end of the first quarter of 2021 was 629, indicating a decrease by one FM station from 630 in the previous quarter. The total number of operational FM stations is still at 459 in the quarter under review.

The Ashanti Region had the highest number of FM stations (92), representing 14.63% of the total number of authorised FM stations in the country. The North East Region recorded the least number of authorised FM Stations, with 9 stations, representing 1.43% of the total authorised FM Stations in the country. (Figure 28) (Appendix A, Table 25).

Figure 28: Regional distribution of authorised FM stations as at end of Q1 2021

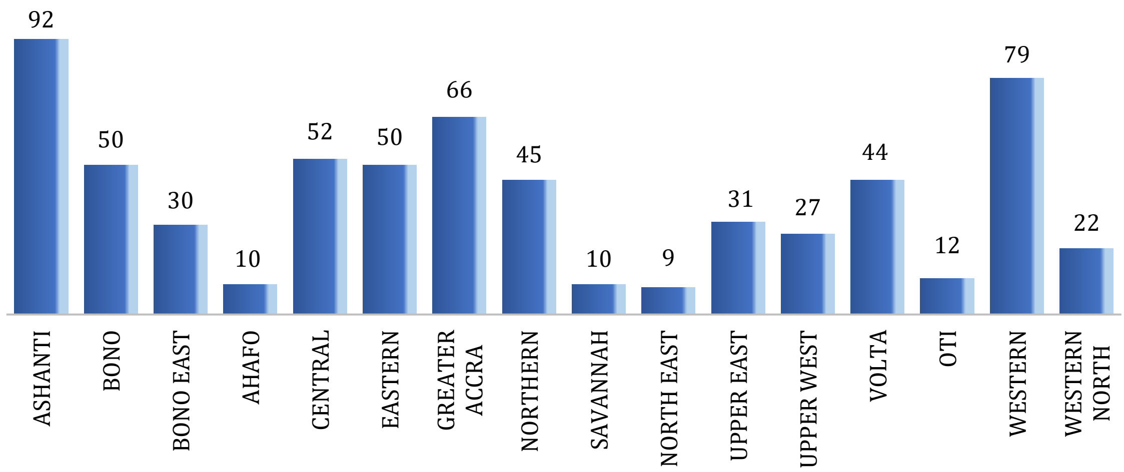


Figure 29: Regional distribution of On-air and Off-air FM stations as at end of Q1 2021

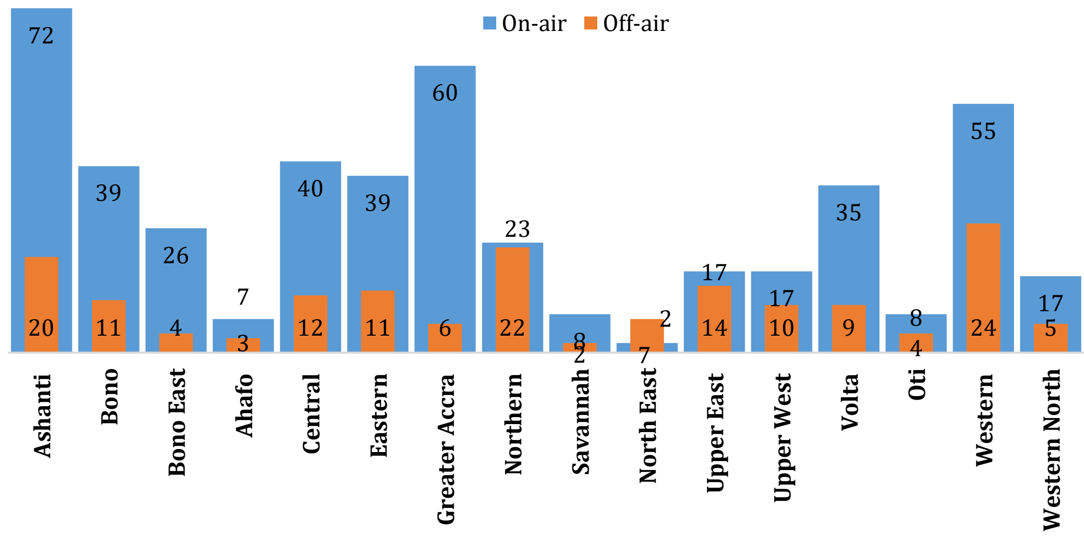
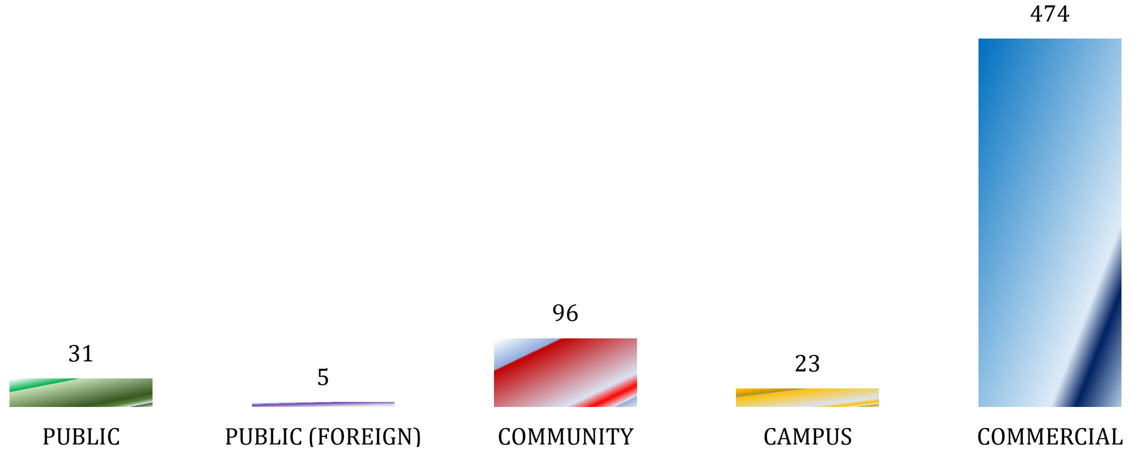


Figure 30: Purpose of Authorised Radio Stations as at Q1 2021



4.2 Authorised Television Stations

The total number of authorised TV stations in Ghana at the end of the first quarter of 2021 was 136, indicating a decrease of 4.90% compared to the previous quarter. (Figure 31) (Appendix A, Table 26).

A total of 110 TV stations were operational during the quarter under review, representing 80.88% of the total number of authorised TV stations in the country (Figure 32) (Appendix A, Table 26).

Figure 31: Authorised TV Stations Q1 2021

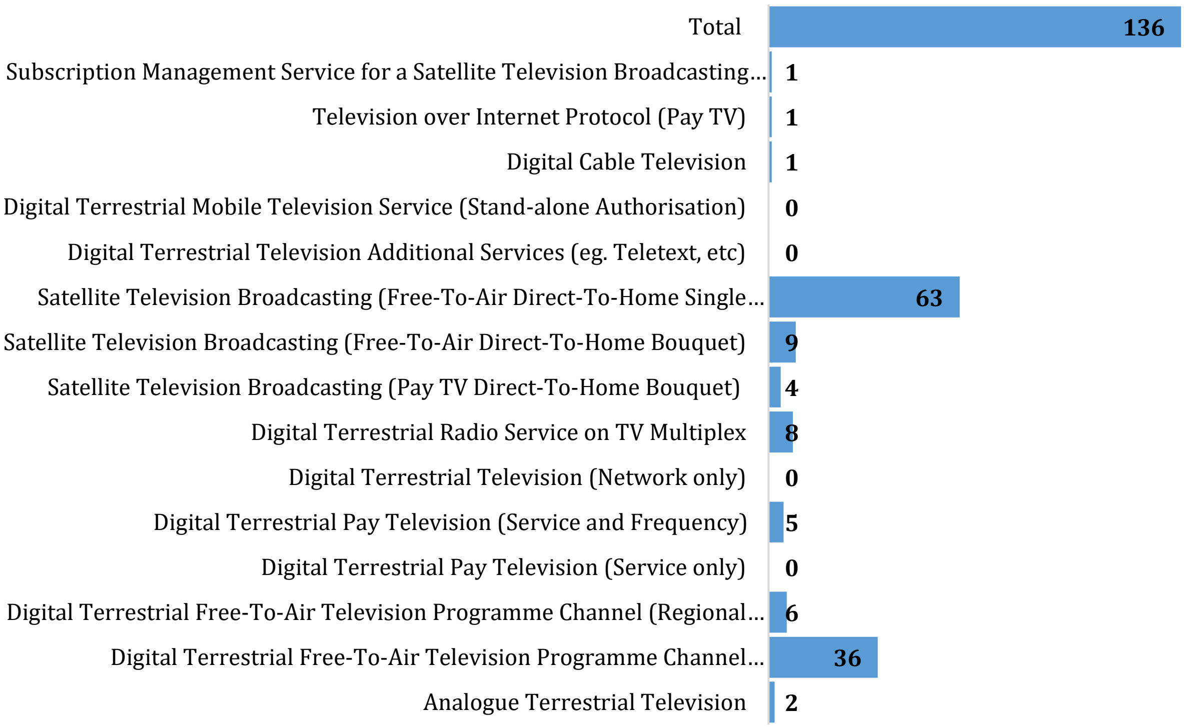
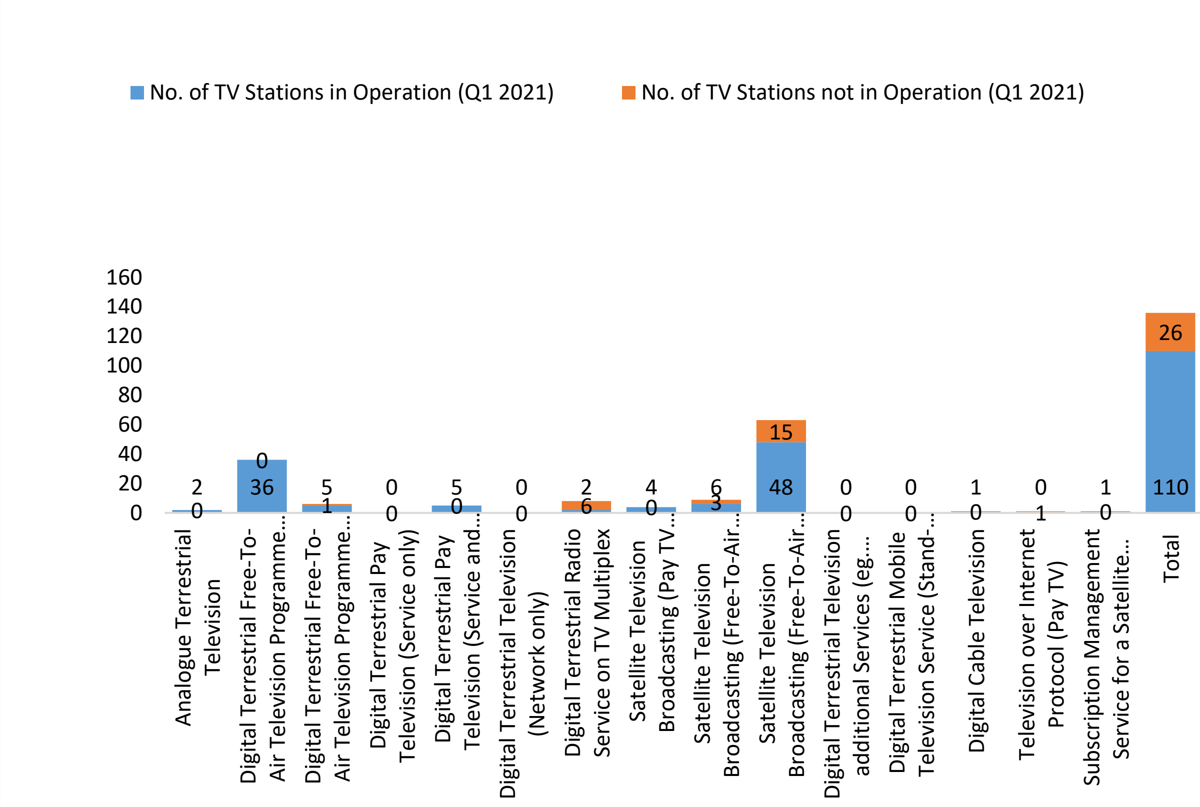


Figure 32: Distribution of Types of TV Services (On-Air and Off-Air TV Stations) as at end of Q1 2021



Appendix A (List of Tables)

Table 1: Mobile Voice Subscriptions and Penetration Rate

Subscription	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Mobile Subscription	41,959,298	40,476,556	40,352,913	40,461,609	41,418,710
Mobile Subscription Growth rate (%)	2.70%	-3.53%	-0.31%	0.27%	2.37%
Net additions	1,102,221	-1,482,742	-123,643.00	108,696.00	957,101.00
Net additions Growth Rate (%)	177.73%	-235%	-92%	-188%	781%
Population[9]	30,371,584	30,554,178	30,737,870	30,922,666	31,108,574
Penetration Rate (%)	**138.15%**	**132.47%**	**131.28%**	**130.85%**	**133.14%**

Table 2: Mobile Voice Subscriptions and Market Share per Operator

Mobile Network Operator		Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
MTN	Subscriptions	23,945,672	23,277,698	23,722,910	23,144,302	23,392,300
	Market Share (%)	57.07%	57.51%	58.79%	57.20%	56.48%
Vodafone	Subscriptions	8,787,464	8,585,484	8,118,298	8,400,565	8,917,137
	Market Share (%)	20.94%	21.21%	20.12%	20.76%	21.53%
AirtelTigo	Subscriptions	8,498,008	7,866,500	7,749,026	8,135,618	8,324,512
	Market Share (%)	20.25%	19.43%	19.20%	20.11%	20.10%
Glo	Subscriptions	728,154	746,874	762,679	781,124	784,761
	Market Share (%)	1.74%	1.85%	1.89%	1.93%	1.89%
Total Industry Subscription		**41,959,298**	**40,476,556**	**40,352,913**	**40,461,609**	**41,418,710**

[9] Population of Ghana was estimated based on the 2010 Population Census figure 24,658,823 published by Ghana Statistical Service (GSS) with 0.2% projected monthly growth rate.

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

Subscription	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Prepaid	41,287,248	39,747,560	39,589,962	40,173,414	41,134,101
Market Share	98.40%	98.20%	98.11%	99.29%	99.31%
Post-paid	672,050	728,996	762,951	288,195	284,609
Market Share	1.60%	1.80%	1.89%	0.71%	0.69%
Total mobile subscription	**41,959,298**	**40,476,556**	**40,352,913**	**40,461,609**	**41,418,710**

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

Breakdown of Off-net Traffic	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Traffic	1,713,795,345	1,725,360,859	1,866,455,132	1,919,526,571	1,916,850,431
Share (%)	99.35%	99.40%	99.42%	99.37	99.38%
Growth (%)	-5.30%	0.67%	8.18%	2.84%	-0.14%
Traffic	11,209,671	10,414,394	10,961,513	12,239,493	11,879,043
Share (%)	0.65%	0.60%	0.58%	0.63%	0.62%
Growth (%)	-3.72%	-7.09%	5.25%	11.66%	-2.94%
Total Off-net Traffic	**1,725,005,017**	**1,735,775,253**	**1,877,416,645**	**1,931,766,009**	**1,928,729,474**

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

Traffic	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Traffic (Off-net)	1,725,005,017	1,735,775,253	1,877,416,645	1,931,766,009	1,928,729,474
Share (%)	7.51%	7.07%	7.44%	7.25%	7.07%
Growth (%)	-5.29%	0.62%	8.16%	2.89%	-0.16%
Traffic (On-net)	21,243,213,654	22,800,072,201	23,354,795,602	24,696,111,020	25,354,235,060
Share (%)	92.49%	92.93%	92.56%	92.75%	92.93%
Growth (%)	7.89%	7.33%	2.43%	5.74%	2.66%
Total traffic	**22,968,218,671**	**24,535,847,454**	**25,232,212,246**	**26,627,877,029**	**27,282,964,534**

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

Traffic	Jan-Mar 20	Apr-Jun 20	Jul-Sep 20	Oct-Dec 20	Jan-Mar 21
Total mobile voice traffic (Average)	7,656,072,890	8,178,615,818	8,410,737,415	8,875,959,010	9,034,992,058
Mobile voice subscription (Average)	41,710,048	40,547,599	40,473,681	40,120,522	41,198,050
Minutes of Use (MoU) per Subscription	183.55	201.70	207.81	221.23	219.31
MoU growth rate (%)	3.35%	9.89%	3.03%	6.46%	-0.87%

Table 7: International Traffic

Traffic	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Incoming International Traffic	51,473,267	59,056,445	54,307,726	56,058,034	64,828,793
Growth (%)	-9.40%	14.73%	-8.04%	3.22%	15.65%
Outgoing International Traffic	122,784,014	117,349,645	116,240,940	119,070,166	120,507,233
Growth (%)	1.18%	-4.43%	-0.94%	2.43%	1.21%

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

Mobile Operators	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Off-net					
MTN	26,738,362	25,239,001	30,951,874	40,197,534	49,379,750
Vodafone	46,047,085	49,753,675	63,289,966	100,306,049	81,174,285
AirtelTigo	1,876,630	1,676,701	1,718,367	1,553,674	1,664,913
Glo	257,432	898,516	1,084,803	1,357,237	1,599,201
Total	**74,919,509**	**77,567,893**	**97,045,010**	**143,414,494**	**133,818,149**
On- net					
MTN	271,939,194	287,142,138	247,832,376	253,965,866	256,833,104
Vodafone	150,323,428	133,299,083	134,817,468	154,547,726	94,284,185
AirtelTigo	4,296,095	3,794,801	3,397,444	2,811,206	2,479,842
Glo	26,331	141,095	173,986	207,205	255,839
Total	**426,585,048**	**424,377,116**	**386,221,274**	**411,532,003**	**353,852,969**
Total					
MTN	298,677,555	312,381,139	278,784,250	294,163,400	306,212,854
Vodafone	196,370,513	185,008,652	198,107,434	254,853,775	175,458,470
AirtelTigo	6,172,444	5,471,401	5,115,811	4,364,880	4,144,755
Glo	680,990	1,039,611	1,258,789	1,564,442	1,855,040
Total	**501,504,557**	**501,945,009**	**483,266,284**	**554,946,497**	**487,671,118**

Table 9: Average SMS per Subscription

	Jan-Mar 20	Apr-Jun 20	Jul-Sep 20	Oct-Dec 19	Jan-Mar 21
Total SMS (Average)	167,168,186	167,315,003	177,806,807	184,982,166	162,557,039
Mobile Subscription (Average)	41,710,048	40,547,599	40,473,681	40,120,522	41,198,050
Average SMS per Subscription	4.0	4.1	4.4	4.6	3.9

Table 10: Mobile Data Subscriptions (Prepaid/Postpaid)

Mobile Data Subscriptions		**Q1 2020**	**Q2 2020**	**Q3 2020**	**Q4 2020**	**Q1 2021**
Prepaid	Subscriptions	25,021,986	24,595,169	25,173,301	26,130,249	22,711,711
	Market Share (%)	97.63	97.59	97.52	98.72%	99.00%
Post-paid	Subscriptions	608,454	608,125	641,433	339,714	229,029
	Market Share (%)	1.62	2.41	2.48	1.28	1.00%
Total mobile data subscriptions		**25,630,440**	**25,203,294**	**25,814,734**	**26,469,963**	**22,940,740**

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

Mobile Operator	**Q1 2020**	**Q2 2020**	**Q3 2020**	**Q4 2020**	**Q1 2021**
Mobile data usage (MB)	157,693,533,779	197,623,989,682	199,503,199,952	175,611,369,727	205,383,959,042

Table 12: Mobile Internet Usage per Subscription (MB)

Mobile Operator	**Jan-Mar 2020**	**Apr-Jun 20**	**Jul-Sep 20**	**Oct-Dec 20**	**Jan-Mar 2021**
Average Mobile data usage (MB)	52,564,511,260	65,874,663,227	66,501,066,651	62,634,127,708	68,461,319,681
Average Total Subscription	25,348,558	25,242,452	25,625,826	26,209,072	24,013,079
Average Data Usage per Subscription (MB)	2073.7	2609.7	2595.1	2389.8	2851.0

Table 13: Mobile Data Traffic (MB) per Operator

Mobile Operator	**Q1 2020**	**Q2 2020**	**Q3 2020**	**Q4 2020**	**Q1 2021**
MTN	107,722,839,616	135,550,242,371	143,363,912,915	137,170,247,517	139,889,378,482
	68.31%	68.59%	71.86%	78.11%	68.11%
Vodafone	31,118,840,152	38,594,683,077	32,215,967,959	14,720,575,836	41,765,769,242
	19.73%	19.53%	16.15%	8.38%	20.34%
AirtelTigo	15,153,701,450	18,295,463,956	18,099,179,067	17,745,451,865	17,545,739,422
	9.61%	9.26%	9.07%	10.10%	8.54%
Glo	3,698,152,561	5,183,600,278	5,824,140,011	5,975,094,509	6,183,071,896
	2.35%	2.62%	2.92%	3.40%	3.01%
Total Industry Traffic (MB)	**157,693,533,779**	**197,623,989,682**	**199,503,199,952**	**175,611,369,727**	**205,383,959,042**

Table 14: Average Mobile Tariff per Service (GHp)

Tariff	**Q1 2020**	**Q2 2020**	**Q3 2020**	**Q4 2020**	**Q1 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	0.13	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	0.09	0.09	0.08	0.08

Table 15: BWA Data Subscriptions and Penetration

BWA Operator	**Q1 2020**	**Q2 2020**	**Q3 2020**	**Q4 2020**	**Q1 2021**
Subscription	47,215	46,575	43,657	42,192	53,101
Growth rate (%)	2.53%	-0.94%	-6.27%	-3.36%	25.86%
Net Additions	1165	-444	-2,918	-1,465	10909
Population	30,371,584	30,554,178	30,737,870	30,922,666	31,108,574
Penetration Rate (%)	0.16%	0.15%	0.14%	0.14%	0.17%

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

BWA operator	Subscription and Market Share	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Surfline	Subscription	43,939	43,808	40,992	40,462	43,511
	Market share (%)	93.06%	94.06%	93.90%	95.90%	81.94%
Telesol	Subscription	2,024	1,711	1,069	1,730	1,725
	Market share (%)	4.29%	3.67%	3.69%	4.10%	3.25%
BBH	Subscription	1,056	1,056	1,056	-	1,056
	Market share (%)	2.24%	2.27%	2.42%	-	1.99%
BLU	Subscription	196	-	-	-	116
	Market share (%)	0.42%	-	-	-	0.22%
Industry Total		**47,215**	**46,575**	**43,657**	**42,192**	**53,101**

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

BWA operator		Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Surfline	Data usage (MB)	3,224,680,819	4,534,304,590	4,355,618,160	4,539,650,270	4,875,666,810
	Market share (%)	88.85%	90.06%	89.21%	73.47%	71.13%
BBH	Data usage (MB)	146,550,970	162,793,380	166,554,120	160,073,400	156,318,030
	Market share (%)	4.04%	3.23%	3.41%	2.59%	2.28%
BLU	Data usage (MB)	40,655,523	-	-	82,193,014	121,838,581
	Market share (%)	1.12%	-	-	1.33%	1.78%
Telesol	Data usage (MB)	217,301,940	337,791,640	360,497,460	383,119,904	403,392,124
	Market share (%)	5.99%	6.71%	7.38%	6.20%	5.88%
Industry Total (MB)		**3,629,189,252**	**5,034,889,610**	**4,882,669,740**	**6,178,537,375**	**6,854,726,802**

Table 18: Internet Usage per BWA Subscriptions (MB)

BWA Operator	Jan-Mar 20	Apr-Jun 20	Jul-Sep 20	Oct-Dec 20	Jan-Mar 21
Volume of data traffic(Average)	1,137,368,205	1,678,296,064	1,627,556,864	1,640,923,136	2,258,868,421
Subscription (Average)	46513	46,760	44,651	41,873	54,968
Data Usage per Subscription (MB)	24,452.9	35,891.45	36,450.35	39,188.10	41,094.49

Table 19: Fixed Network Voice Subscriptions and penetration

Fixed Operator	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Vodafone	289,106	292,661	294,157	299,802	303,749
	97.73%	97.65%	98.07%	97.44%	97.98%
AirtelTigo	6,669	7,032	5,776	6,389	3,565
	2.25%	2.35%	1.93%	2.08%	1.15%
MTN	39	21	26	1477	2687
	0.01%	0.01%	0.01%	0.48%	0.87%
Total industry subscription	295,814	299,714	299,959	307,668	310,001
Population	30,371,584	30,554,178	30,737,870	30,922,666	31,108,574
Fixed Network Penetration Rate (%)	0.97%	0.98%	0.98%	0.99%	1.00%

Table 20: Fixed Network Volume of Traffic in Minutes

Traffic	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
On-net Fixed voice traffic	-	-	-	-	
Off-net fixed voice traffic	10,296,410	8,093,500	9,085,387	8,838,739	9,318,844
Total Fixed Voice Traffic	10,296,410	8,093,500	9,085,387	8,838,739	9,318,844

Table 21: Fixed Network Minute of Use per Subscriptions

Traffic (Average)	Jan-Mar 2020	Apr-Jun 20	Jul-Sep 20	Oct-Dec 20	Jan-Mar 2021
Total Fixed Voice Traffic	3,432,137	2,697,833	3,028,462	2,946,246	3,106,281
Subscription (Average)	293,536	298,359	301,354	304,998	310,119
Minutes of Use per Subscription (MoU)	11.7	9.0	10.0	9.7	10.0
Growth Rate	-2.51%	-22.67%	11.14%	-3.88%	3.69%

Table 22: Fixed Broadband Data Subscriptions and Penetration

Fixed network operator	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Vodafone	57,458	57,053	59,497	62,284	63,208
	76.47%	75.94%	75.39%	80.87%	80.97%
Airtel	673	706	703	700	674
	0.90%	0.94%	0.89%	0.91%	0.86%
MTN	17,006	17,373	18,724	14,038	14,186
	22.63%	23.12%	23.72%	18.23%	18.17%
Total fixed data subscription	75,137	75,132	78,924	77,022	78,068
Population	30,371,584	30,554,178	30,737,870	30,922,666	31,108,574
Fixed Data penetration rate (%)	0.25%	0.25%	0.26%	0.25%	0.25%

Table 23: Fixed Network Data Subscriptions per Operator

Fixed network operator	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
Vodafone	57,458	57,053	59,497	62,284	63,208
	76.47%	75.94%	75.39%	80.87%	80.97%
AirtelTigo	673	706	703	700	674
	0.90%	0.94%	0.89%	0.91%	0.86%
MTN	17,006	17,373	18,724	14,038	14,186
	22.63%	23.12%	23.72%	18.23%	18.17%

Table 24: Regional Distribution of FM Stations by Purpose

Name of Regions	Public	Public (Foreign)	Community	Campus	Commercial
Ashanti	2	1	12	3	74
Bono	1	-	3	2	44
Bono East	2	-	4	-	24
Ahafo	-	-	1	-	9
Central	2	-	10	3	37
Eastern	2	-	11	1	36
Greater Accra	2	3	8	4	49
Northern	3	-	7	2	33
Savannah	3	-	4	-	3
North East	1	-	4	-	4
Upper East	2	-	9	3	17
Upper West	2	-	8	2	15
Volta	3	-	4	1	36
Oti	1	-	3	-	8
Western	2	1	8	2	66
Western North	3	-	0	-	19
Total	**31**	**5**	**96**	**23**	**474**

Table 25: Regional Distribution of FM Stations as at the end of Q1 2021

Name Of Regions	Authorized FM Stations	FM Stations In Operation
Ashanti	92	72
Bono	50	39
Bono East	30	26
Ahafo	10	7
Central	52	40
Eastern	50	39
Greater Accra	66	60
Northern	45	23
Savannah	10	8
North East	9	2
Upper East	31	17
Upper West	27	17
Volta	44	35
Oti	12	8
Western	79	55
Western North	22	17
Total	**629**	**465**

Type of Television Service	**Authorised TV stations**		**No. of TV Stations in Operation (Q1 2021)**	**No. of TV Stations not in Operation (Q1 2021)**
	End of Q4 2020	**End of Q1 2021**		
Analogue Terrestrial Television	2	2	2	0
Digital Terrestrial Free-To-Air Television Programme Channel (Nationwide Coverage)	36	36	36	0
Digital Terrestrial Free-To-Air Television Programme Channel (Regional Coverage)	6	6	5	1
Digital Terrestrial Pay Television (Service only)	1	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)	4	4	4	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)	69	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	0	1
Subscription Management Service for a Satellite Television Broadcasting (Pay TV Direct-To-Home Bouquet)	1	1	1	0
Total	**143**	**136**	**110**	**26**

Source: NCA, 2020

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

- ### 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

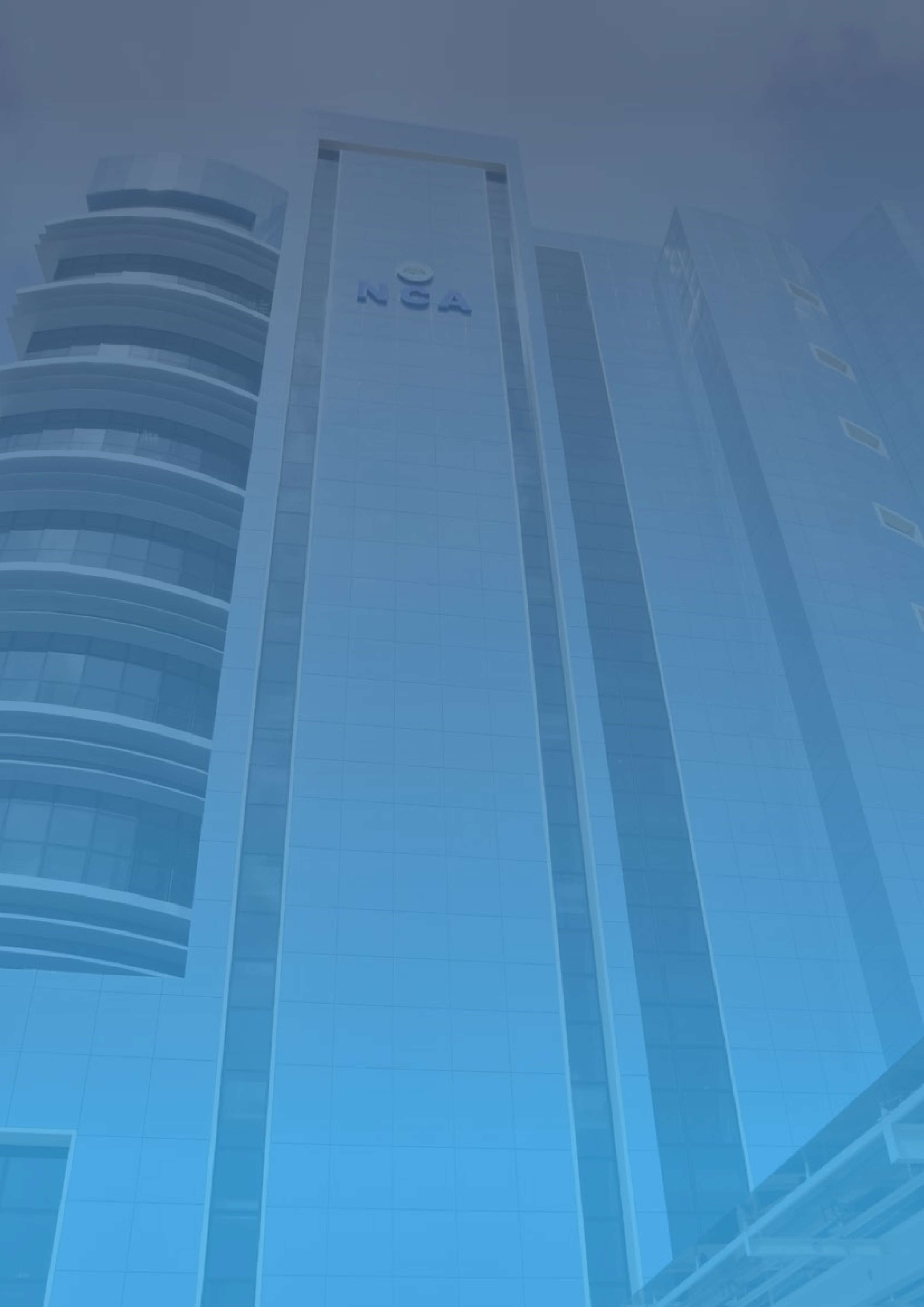
National Communications Authority,
House No 83, North Nkwabeng
P. O. Box SY125, Sunyani, Brong Ahafo Region
Tel: +233 (0) 3520 27564
E-Mail: complaints.sunyani@nca.org.gh

- ### 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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