QUARTERLY STATISTICAL BULLETIN ON COMMUNICATIONS IN GHANA

Volume 5 Issue 3

NATIONAL COMMUNICATIONS AUTHORITY

THIRD QUARTER

JULY - SEPTEMBER, 2020

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 Ghanaian 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, Telsol 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

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	145	102
FM Stations	604	446

B1. Total Subscriptions

SUBSCRIPTION	QUARTER-ON-QUARTER			YEAR-ON-YEAR			Units
	Q2 2020	Q3 2020	*Growth (%)*	Q3 2019	Q3 2020	*Growth (%)*	
Mobile Voice Subscription	40.477	40.353	*-0.31%*	40.460	40.353	*-0.26%*	Million
Fixed Voice Subscription	299.7	299.9	*0.07%*	285.9	299.9	*4.90%*	Thousand
Mobile Data Subscription	25.20	25.81	*2.42%*	27.58	25.81	*-6.86%*	Million
Fixed Data Subscription	75.13	78.92	*5.04%*	59.40	78.92	*32.86%*	Thousand
Broadband Wireless Access	46.56	43.12	*-7.43%*	49.36	43.12	*-12.64%*	Thousand

B2. Voice, Data and SMS Traffic

TRAFFIC	QUARTER-ON-QUARTER			YEAR-ON-YEAR			Units
	Q2 2020	Q3 2020	*Growth (%)*	Q3 2019	Q3 2020	*Growth (%)*	
Mobile Voice Traffic (Domestic)	24.54	25.23	*2.81%*	20.80	25.23	*21.30%*	Billion
Fixed Voice Traffic	7.19	9.09	*12.36%*	15.79	9.09	*-42.43%*	Million
Incoming International Traffic (Direct to Network Only)	59.06	54.31	*-8.04%*	61.02	54.31	*-11.00%*	Million
Outgoing International Traffic	117.35	116.24	*-0.95%*	128.32	116.24	*-9.41%*	Million
Mobile Data Traffic (MB)	197.62	199.50	*0.95%*	89.86	199.50	*122.01%*	Billion MB
BWA Data Traffic (MB)	5.03	4.88	*-3.02%*	4.11	4.88	*18.69%*	Billion MB
SMS Count	501.9	483.3	*-3.72%*	700.6	483.3	*-31.02%*	Million

B3. Penetration Rate (%)

PENETRATION RATE (%)	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q2 2020	Q3 2020	*Growth (%)*	Q3 2019	Q3 2020	*Growth (%)*
Mobile Voice Subscription	132.47	131.28	*-0.90%*	134.82	131.28	*-2.63%*
Fixed Voice Subscription	0.98	0.98	*0.00%*	0.95	0.98	*3.16%*
Mobile Data Subscription	82.49	83.98	*1.81%*	91.90	83.98	*-8.62%*
Fixed Data Subscription	0.25	0.26	*4.00%*	0.20	0.26	*30.00%*
Broadband Wireless Access	0.15	0.14	*-6.67%*	0.16	0.14	*-12.50%*

C1. Broadcasting Sector

FM/TV AUTHORISATION & OPERATIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q2 2020	Q3 2020	*Growth (%)*	Q3 2019	Q3 2020	*Growth (%)*
FM Authorisation	575	604	*5.04%*	477	604	*26.62%*
FM Station Operating	428	446	*4.21%*	380	446	*17.37%*
TV Authorisations	146	145	*-0.68%*	139	145	*4.32%*
TV Stations Operating	103	102	*-0.97%*	96	102	*6.25%*

C2. Categories of Authorised FM Radio Stations

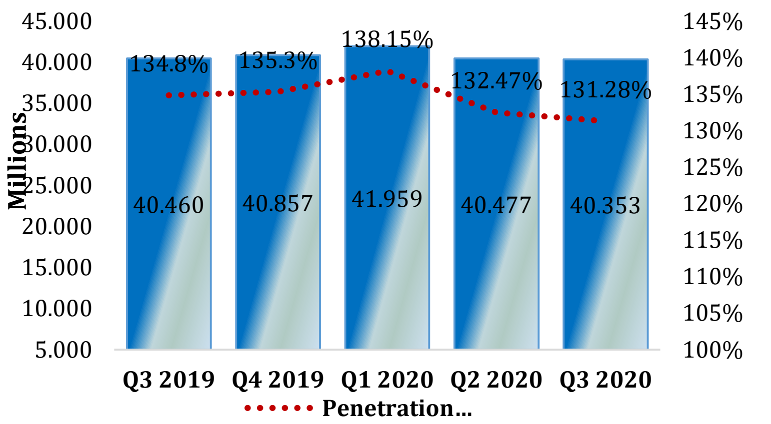
CATEGORIES OF FM RADIO STATIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q2 2020	Q3 2020	*Growth (%)*	Q3 2019	Q3 2020	*Growth (%)*
PUBLIC	31	31	*0.00%*	31	31	*0.00%*
PUBLIC FOREIGN	5	5	*0.00%*	5	5	*0.00%*
CAMPUS	21	22	*4.76%*	21	22	*4.76%*
COMMUNITY	81	87	*7.41%*	73	87	*19.18%*
COMMERCIAL	437	459	*5.03%*	347	459	*32.28%*

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[2], Glo, MTN and Vodafone.

1.1 Mobile Voice Subscriptions and Penetration Rate[3]

Figure 1: Mobile Voice Subscription and Penetration Rate



Mobile Voice subscriptions decreased from 40.477 million at the end of Q2 2020 to 40.353 million at the end of Q3 2020, representing a decline of 0.31%.

Year-on-year subscriptions decreased from 40.460 million at the end of Q3 2019 to 40.353 million at the end of Q3 2020, recording a negative growth of 0.26%.

The penetration rate as at the end of the third quarter of 2020 was 131.28% as compared to 132.47% recorded in the second quarter of 2020, indicating a decline of 0.90% (Figure 1) (Appendix A, Table 1).

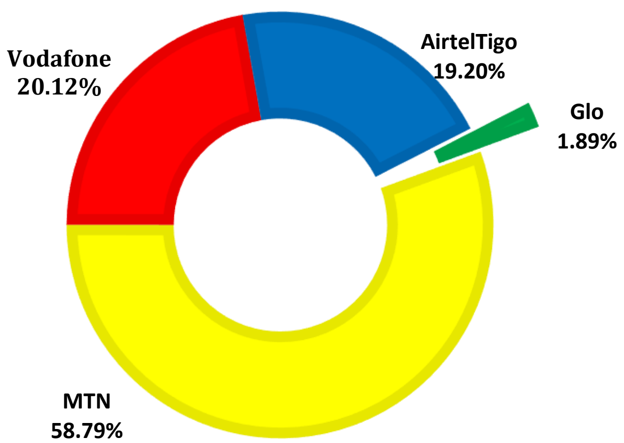
1.1.1 Market Share per Operator

At the end of Q3 2020, MTN had 58.79% of the market with 23.72 million subscriptions, followed by Vodafone with 8.12 million subscriptions (20.12%).

AirtelTigo is the third largest mobile network operator by subscription with a market share of 19.20% and subscriber base of 7.75 million.

Glo recorded 0.76 million subscriptions with a market share of 1.89% (Figure 2) (Appendix A, Table 2).

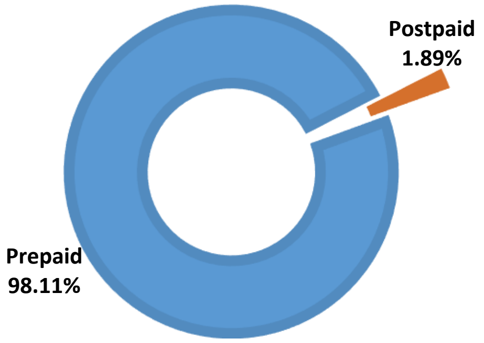
Figure 2: Market Share per Operator



[2] Airtel Ghana and Tigo merged in 2018.
[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.

1.1.2 Prepaid and Postpaid Mobile Voice Subscriptions

Figure 3: Prepaid and Postpaid Mobile Voice Subscriptions



The mobile voice subscription for prepaid subscribers is 39.60 million representing a market share of 98.11% whilst postpaid stood at 1.89% with a subscription of 0.76 million (Figure 3) (Appendix A, Table 3).

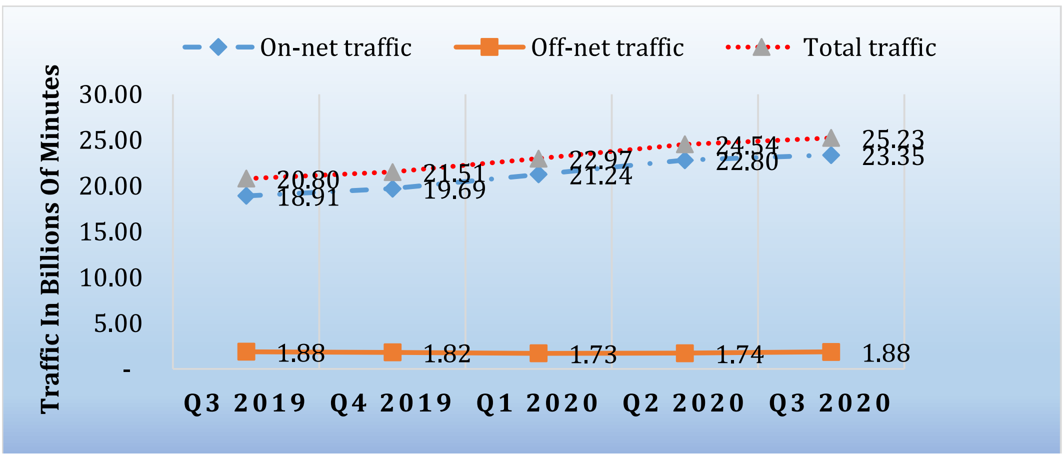
1.2 Mobile Voice Traffic (Domestic)

Off-net traffic increased from 1.74 billion minutes at the end of Q2 2020 to 1.88 billion minutes at the end of Q3 2020, representing a growth of 8.16%. Year-on-year off-net traffic increased by 0.004%, from 1.885 billion minutes in Q3 2019 to 1.880 billion minutes at the end of Q3 2020.

On-net traffic increased from 22.80 billion minutes in the previous quarter to 23.35 billion minutes during the quarter under review, representing a growth rate of 2.43%. Year-on-year on-net traffic also grew from 18.91 billion minutes in Q3 2019 to 23.35 billion minutes at the end of Q3 2020 representing 23.48% in growth rate.

Total domestic mobile voice traffic recorded a rise from 24.54 billion minutes in the previous quarter to 25.23 billion minutes in Q3 of 2020, representing 2.84% growth. Year-on-year mobile voice traffic also increased from 20.80 billion minutes at the end of the third quarter of 2019 to 25.23 billion minutes in the third quarter of 2020, representing a growth rate of 21.32% (Figure 4) (Appendix A, Table 4).

Figure 4: Mobile Voice Traffic (Domestic) in Billions of Minutes



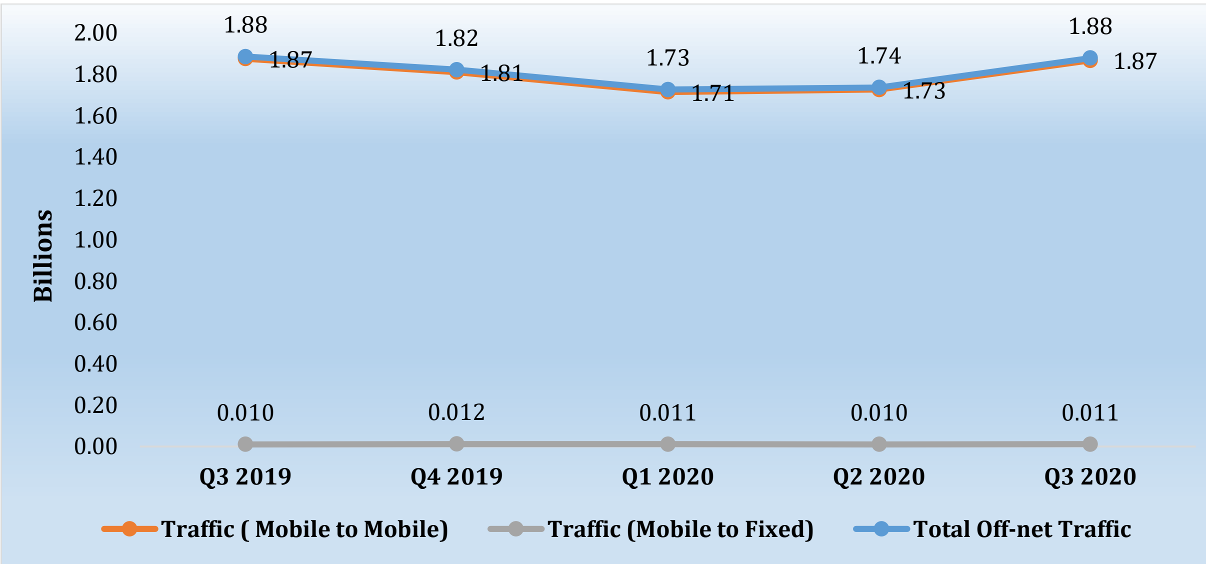
1.2.1 Mobile Off-net Traffic Distribution between Mobile and Fixed Networks

Mobile-to-mobile off-net traffic increased from 1.73 billion minutes at the end of Q2 2020 to 1.87 billion minutes at the end of Q3 2020 representing 8.18% growth.

Year-on-year mobile-to-mobile off-net traffic decreased from 1.87 billion minutes at the end of Q3 2019 to 1.87 billion minutes at the end of Q3 2020, representing a decrease of 0.43% in growth.

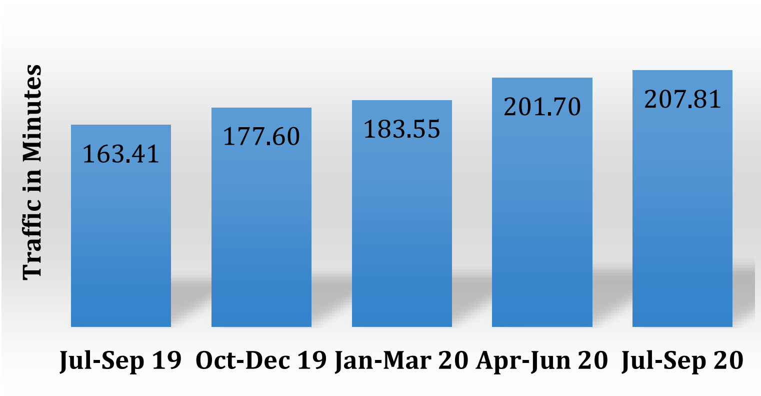
Mobile to fixed off-net traffic increased from 10.41 million minutes to 10.96 million minutes representing 5.25% growth quarter-on-quarter. Year-on-year mobile-to-fixed off-net traffic increased from 10.39 million minutes at the end of Q3 2019 to 10.96 million minutes at the end of Q3 2020, representing 5.47% growth (Figure 5) (Appendix A, Table 5).

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



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 rose from 201.70 minutes in Q2 2020 to 207.81 minutes (3.03%) in Q3 2020.

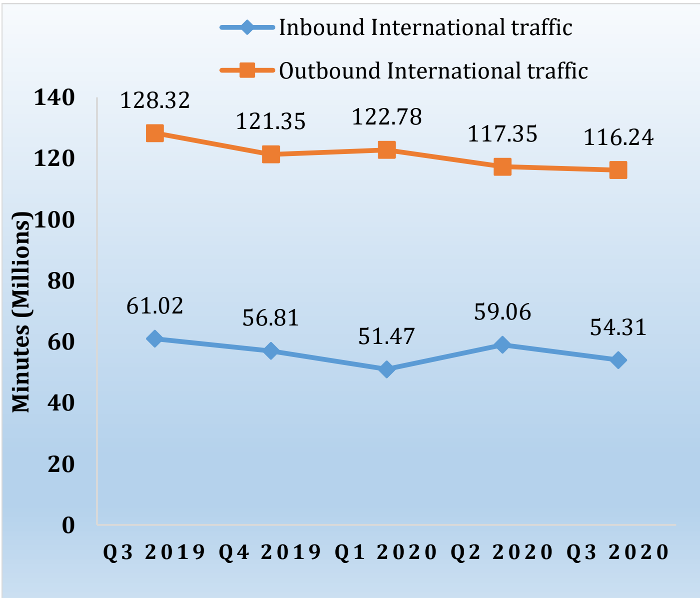
Year-on-year minutes of use per subscription grew from 163.41 minutes in Q3 2019 to 207.81 minutes in Q3 2020, representing 27.17% growth (figure 6) (Appendix A, Table 6).

1.3 International Traffic

During the quarter under review, inbound international traffic decreased from 59.06 million minutes to 54.31 million minutes, representing a decline of 8.04%. Year-on-year inbound international traffic decreased from 61.02 million minutes to 54.31 million minutes representing a decrease in growth by 11.00%.

Outbound international traffic decreased from 117.35 million minutes in Q2 2020 to 116.24 million minutes at the end of Q3 2020, representing a decrease of 0.95%. Year- on –year outbound international traffic declined from 128.32 million minutes to 116.24 million minutes, indicating a decrease of 9.41% (Figure 7) (Appendix A, Table 7).

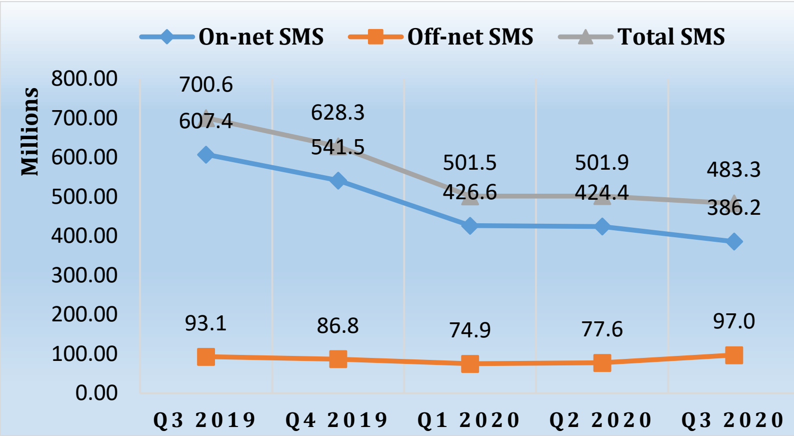
Figure 7: International Traffic in Minutes (Millions)



[4] Minutes of use per subscriptions is calculated by dividing the total average volume of traffic for the quarter with 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 Q3 2020 was 483.3 million as compared to 501.9 million in the preceding quarter, recording 3.72% decrease.

Year-on-year SMS counts went down from 700.6 million in Q3 2019 to 483.3 million at the end Q3 2020, representing a decrease of 31.02% (figure 8) (Appendix A, Table 8).

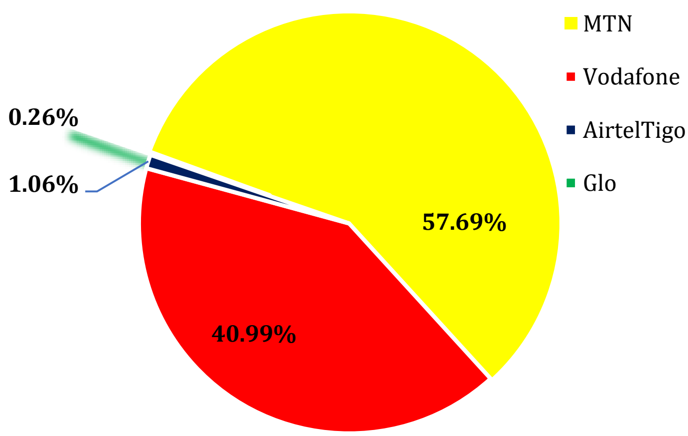
1.4.1 SMS Counts per Mobile Network Operator/Market Share

The volume of SMS traffic originating from MTN was 278.78 million at the end of Q3 2020; representing a market share of 57.69% of the total, SMS count.

The volume of SMS traffic from Vodafone was 198.11 million, representing a market share of 40.99% of the total SMS count.

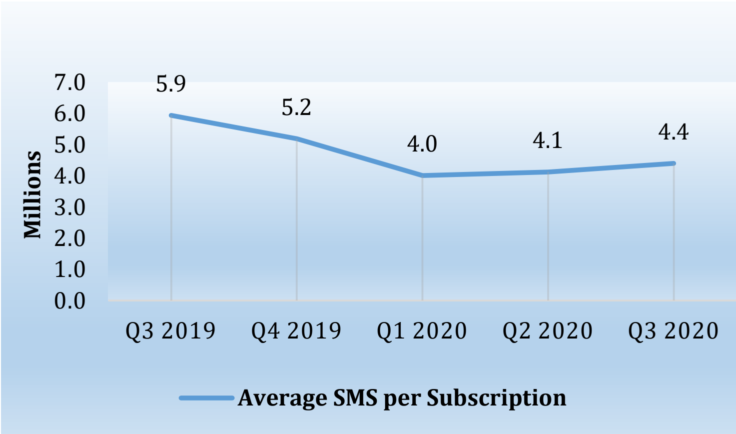
AirtelTigo had an SMS count of 5.12 million, representing 1.06% of the market share of the total SMS count. Glo generated 1.26 million SMS count recording a share of 0.26% (Figure 9) (Appendix A, Table 8).

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 Q3 2020 was about 4.4 SMS, indicating an increase of 6.68% as compared to the end of Q2 2020, which was 4.1.

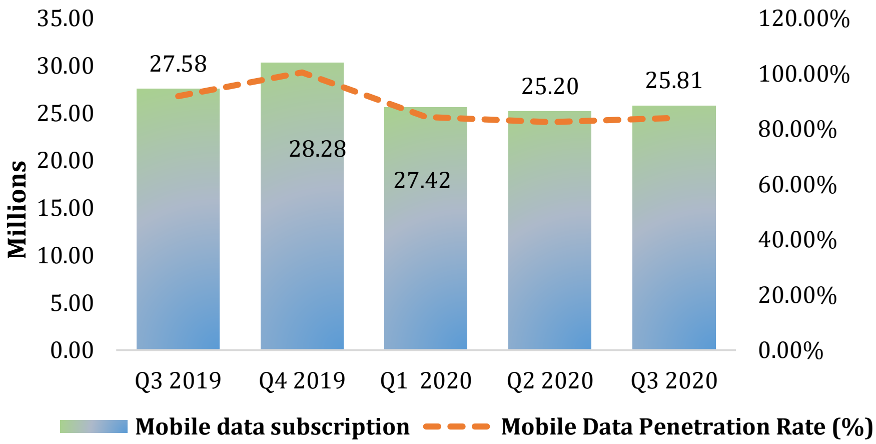
Year-on-year average SMS volume per subscription decreased from approximately 5.9 at the end of Q3 2019 to approximately 4.4 at the end of Q3 2020, recording a decrease of 25.92% (Figure 10) (Appendix A, Table 9).

1.5 Mobile Data Subscriptions and Penetration Rate (%)

At the end of Q3 2020, mobile data subscriptions increased by 2.42% from 25.20 million at the end of Q2 2020 to 25.81 million.

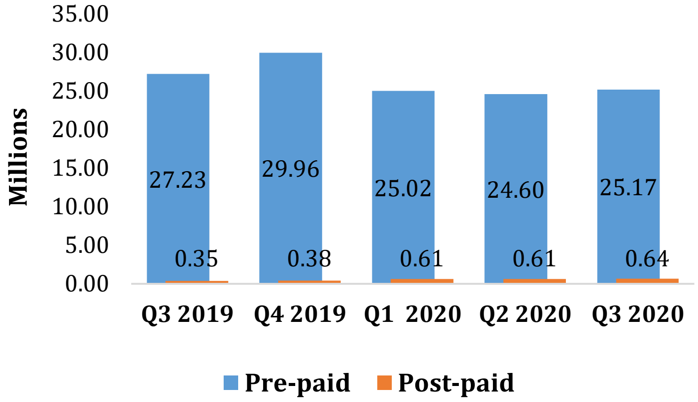
Year-on-year subscriptions decreased by 6.86%, from 27.58 million at the end of Q3 2019 to 25.81 million at the end of Q3 2020 (Figure 11) (Appendix A, Table 10).

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



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 increased from 24.60 million in the second quarter of 2020 to 25.17 million subscriptions at the end of the third quarter of 2020, representing 97.52% of the market share.

Post-paid subscriptions recorded a market share of 2.48% with a subscription of 0.64 million at the end of Q3 2020 (Figure: 12) (Appendix A, Table 10).

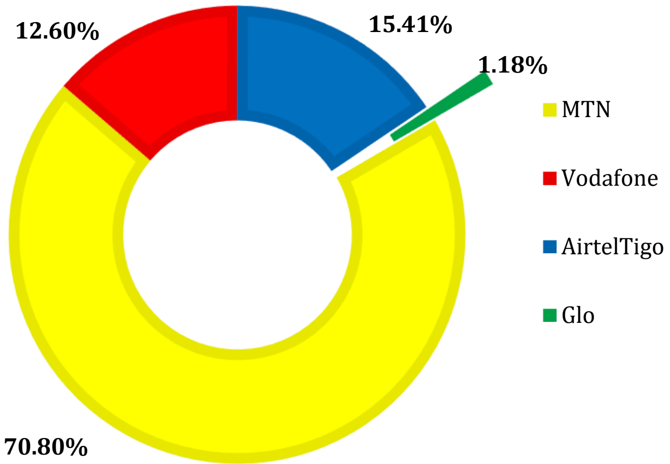
1.5.2 Mobile Data Subscriptions per Mobile Network Operator

MTN recorded 18.28 million subscriptions with a market share of 70.80%.

Vodafone also recorded 3.25 million subscriptions with a market share of 12.60%.

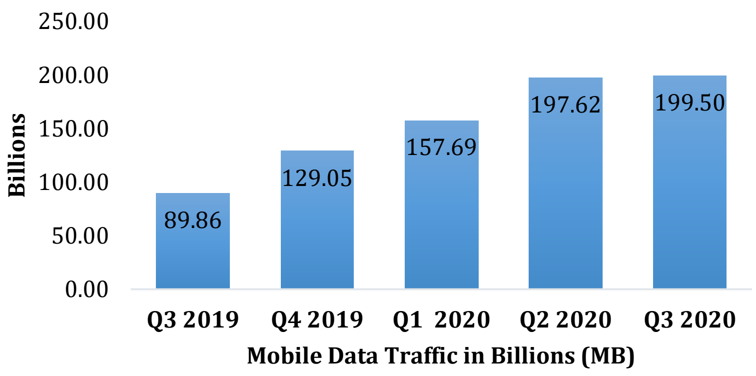
AirtelTigo registered 3.98 million in mobile data subscriptions with a market share of 15.41%.

Glo ended the third quarter of 2020 with a total data subscription of 0.304 million and a market share of 1.18% (Figure 13).



1.6 Mobile Data Traffic in Billions of Megabytes (MB)

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

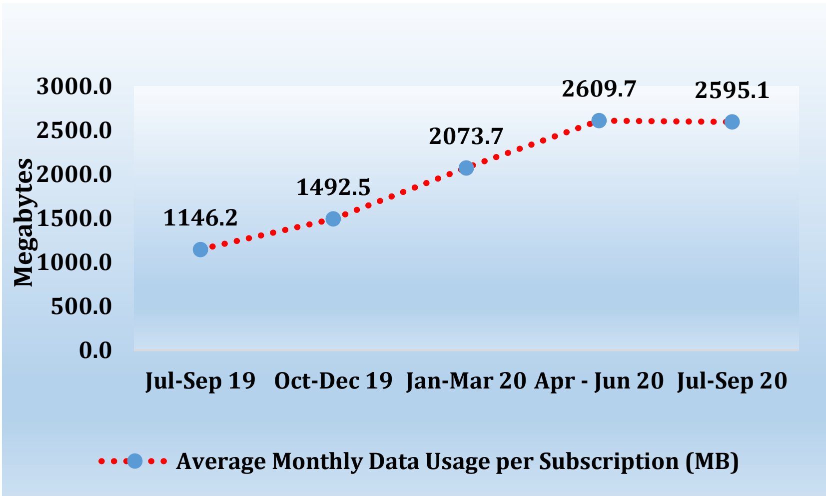


At the end of Q3 2020, internet traffic generated by the mobile network operators was 199.50 billion megabytes of data, recording a growth rate of 0.95% as compared to 197.62 billion megabytes of data at the end Q2 2020.

Year-on-year internet traffic increased from 89.86 billion megabytes at the end of Q3 2019 to 199.50 billion megabytes at the end of Q3 2020, representing an increase of 122.01% (Figure 14) (Appendix A, Table 11).

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

Figure 15:Mobile Data Usage per Subscription (MB)



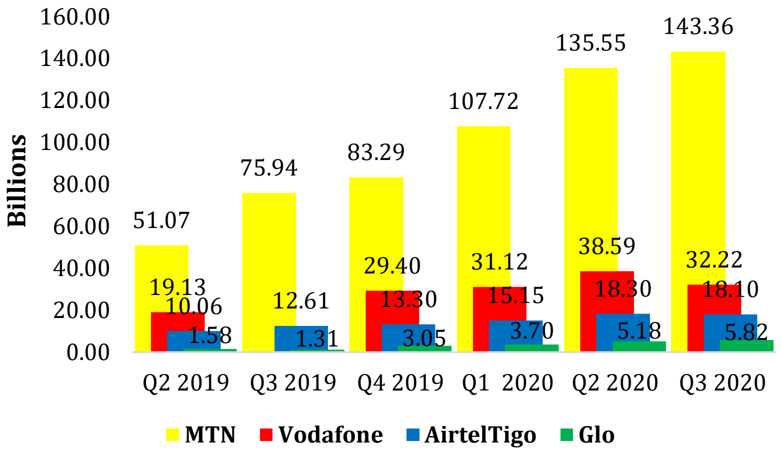
The average mobile internet usage per subscription decreased from 2609.7 megabytes at the end of Q2 2020 to 2595.1 megabytes at the end of Q3 2020 recording a decrease in growth rate by 0.56%.

Year-on- year average data usage per subscription increased from 1146.2 at the end of Q3 2019 to 2595.1 at the end of Q3 2020, recording a growth of 126.42% (Figure 15) (Appendix A, Table 12).

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

1.6.2 Mobile Internet Traffic (MB) per Mobile Network Operator

Figure 16: Mobile Internet Traffic (MB) per Operator



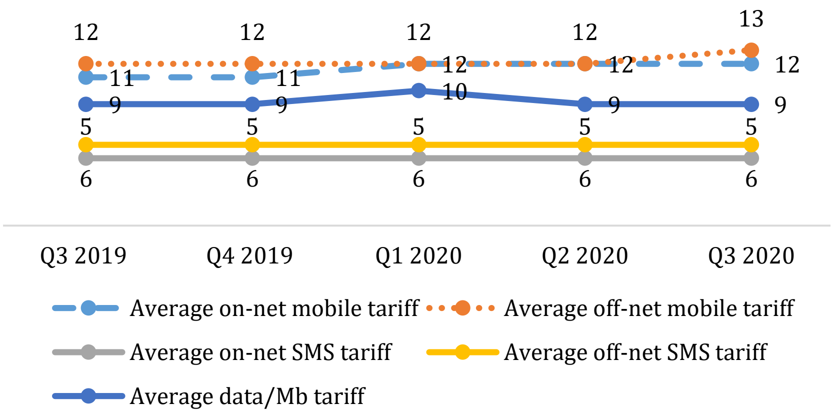
MTN generated the highest volume of internet traffic of 143.36 billion megabytes with a market share of 71.86%, followed by Vodafone with a traffic of 32.22 billion megabytes and a market share of 16.15%.

AirtelTigo also registered 18.10 billion megabytes of data, recording a market share of 9.07%.

Glo recorded the least data usage, generating 5.82 billion megabytes with a market share of 2.92% (Figure 16) (Appendix A, Table 13)

1.7 Mobile Telecommunications Service Tariffs

Figure 17: Average Mobile Tariffs per Service



Quarter- on -quarter average tariffs for SMS, on net and off-net mobile have not changed. The quarter- on-quarter data tariff also remain unchanged.

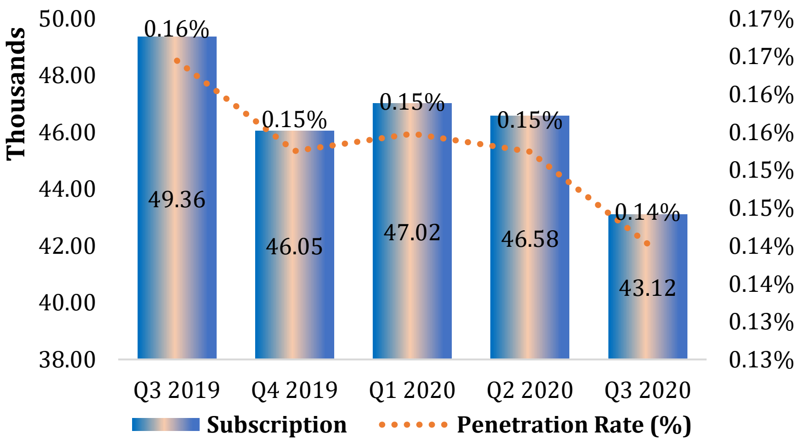
The industry average tariff for year-on-year on net and off net mobile tariff increased from 0.11 to 0.12 pesewas and 0.12 to 0.13 respectively. The average data tariff stood at 0.09 pesewas per megabyte (Figure 17) (Appendix A, Table 14).

2.0 BROADBAND WIRELESS ACCESS (BWA)

There are five (5) Broadband Wireless Access operators in Ghana namely; BLU Telecommunications, Broadband Home (BBH), Busy Internet, Surfline and Telesol. This quarter's report covers data from BBH, Surfline and Telesol.

2.1 BWA Subscriptions and Penetration Rate

Figure 18: BWA Subscription and Penetration Rate



BWA subscriptions decreased from 46.58 in the second quarter of 2020 to 43.12 in the third quarter of 2020, representing a decline of 7.43%.

Year-on-year subscriptions also decreased from 49.36 in the third quarter of 2019 to 43.12 at the end of the third quarter of 2020, recording a 12.64% decrease.

Penetration rate for broadband wireless access declined from 0.15% in the previous quarter to 0.14% (Figure 18) (Appendix A, Table 15).

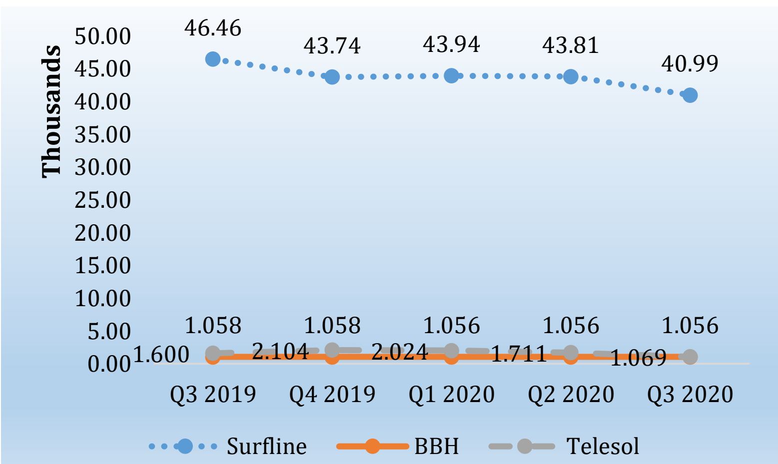
2.1.1 Subscriptions per Broadband Wireless Access (BWA) Operator

Surfline recorded a decrease in subscriptions from 43.81 at the end of Q2 2020 to 40.99 at the end of the quarter under review, representing a decrease of 6.43% and a market share of 95.07%.

Telesol recorded 1.069 subscriptions this quarter with decrease in growth by 37.52% and a market share of 2.48%.

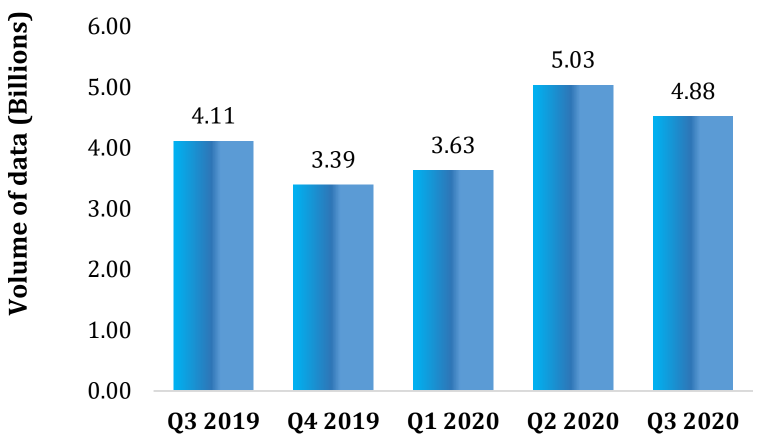
BBH recorded 1.056 subscriptions at the end of Q3 2020 with a market share of 2.45%. (Figure 19) (Appendix A, Table 16).

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



2.2 Broadband Wireless Access (BWA) Volume of Internet Traffic

Figure 20: BWA Internet Traffic in Megabyte (MB)

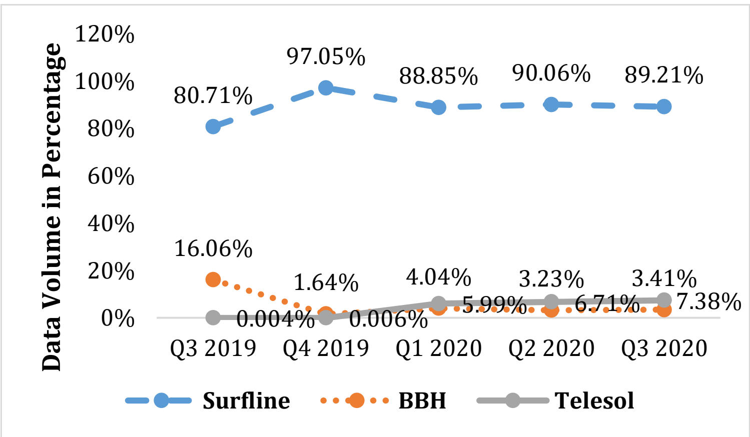


The total volume of internet traffic generated by the BWAs decreased from 5.03 billion megabytes at the end of Q2 2020 to 4.88 billion megabytes at the end of Q3 2020, indicating a decline of 3.02%.

Year-on-year internet traffic increased from 4.11 billion megabytes at the end of Q3 2019 to 4.88 billion megabytes at the end of Q3 2020, representing a growth of 18.69% (Figure 20) (Appendix A, Table 17).

2.2.1 Volume of Broadband Wireless Access Traffic per Operator

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

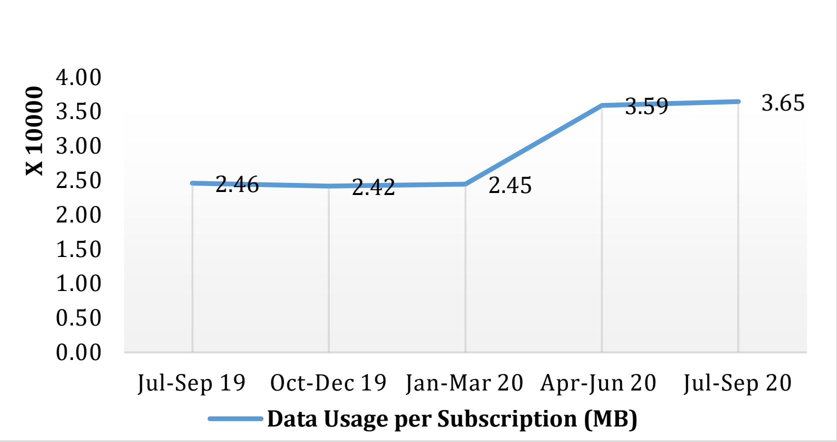


Surfline's total volume of internet traffic for the quarter under review was 4.36 billion MB, representing 89.21% of the total volume of traffic.

BBH recorded 0.167 billion MB of internet traffic, representing 3.41% of the market and Telesol recorded 0.360 billion MB with a market share 7.38% (Figure 21) (Appendix A, Table 17).

2.2.2 Average Monthly Internet Usage per BWA Subscription[6]

Figure 22: Average Internet Usage per BWA Subscription



Average internet usage per BWA subscription increased to 36,450.35 megabytes in the third quarter of 2020 from 35,891.45 megabytes in the previous quarter.

Year-on-year internet usage per subscription also increased from 24,588.40 megabytes in the third quarter of 2019 to 36,450.35 megabytes at the end of the third quarter of 2020 (Figure 22) (Appendix A, Table 18).

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

3.0 FIXED NETWORK

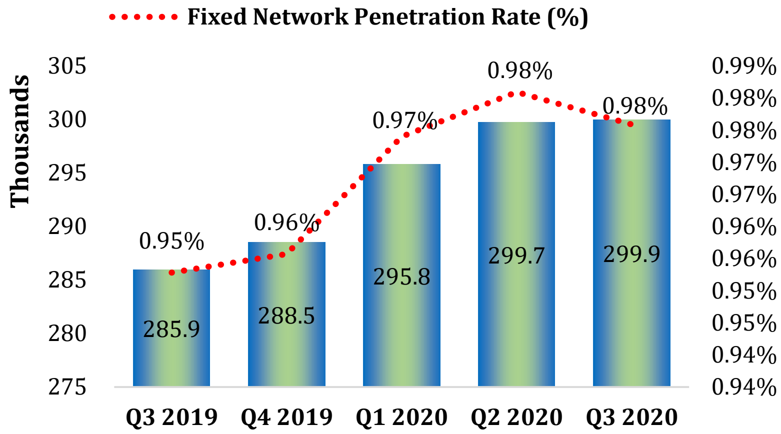
This section analyses the fixed telephone industry in Ghana. Three (3) operators namely Vodafone, AirtelTigo and MTN have been licensed by the NCA to provide this service.

3.1Fixed Voice Subscriptions and Penetration Rate

Total number of fixed line subscriptions increased from 299.7 in the second quarter of 2020 to 299.9 at the end of the third quarter of 2020. This shows a penetration rate of 0.98% and a growth in subscriptions by 0.07%.

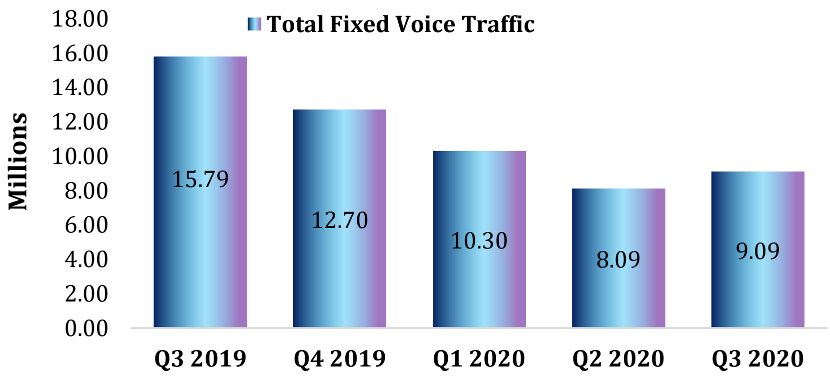
Year-on-year subscription increased from 285.9 in Q3 2019 to 299.9 at the end of Q3 2020, representing a growth of 4.90% (Figure 23) (Appendix A, Table 19).

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 12.26% during the quarter under review, from 8.09 million minutes to 9.09 million minutes.

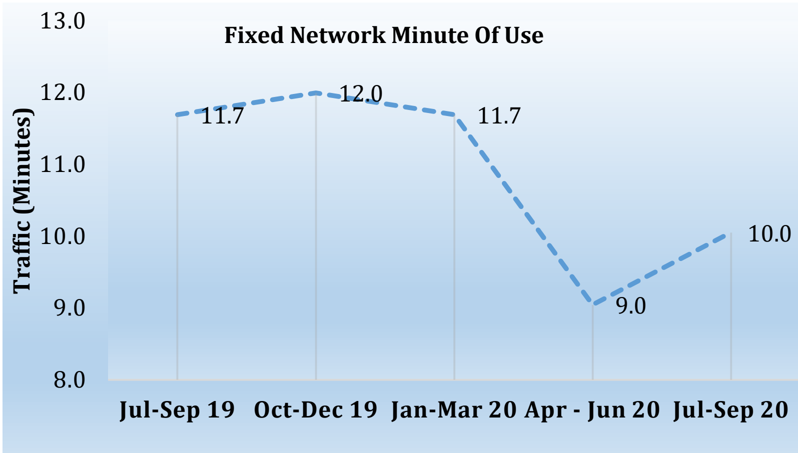
Year-on-year total fixed voice traffic decreased by 42.45%, from 15.79 million minutes to 9.09 million minutes (Figure 24) (Appendix A, Table 20).

3.3 Fixed Voice Average Minute of Use[7]

Average fixed voice traffic per subscription increased from 9.0 to 10.0 minutes at the end of the third quarter of 2020 (11.14%).

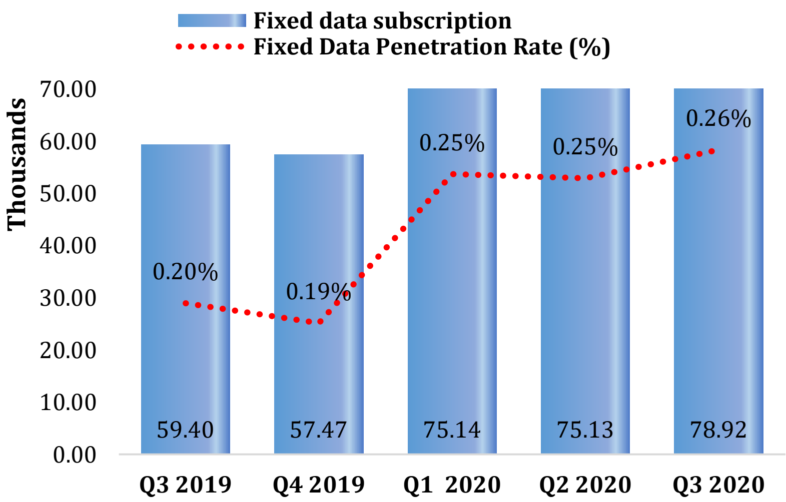
Year-on-year minutes of use per subscription declined from 11.7 minutes in the third quarter of 2019 to 10.0 minutes at the end of the third quarter of 2020 (14.05%) (Figure 25) (Appendix A, Table 21).

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 75.13 in the previous quarter to 78.92 in the quarter under review recording a growth of 5.04%.

Year-on-year fixed data subscriptions increased from 59.40 in the preceding year to 78.92 at the end of the third quarter of 2020, recording a growth of 32.86%.

Fixed data penetration rate stood at 0.26% at the end of the third quarter of 2020 (Figure 26) (Appendix A, Table 22).

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

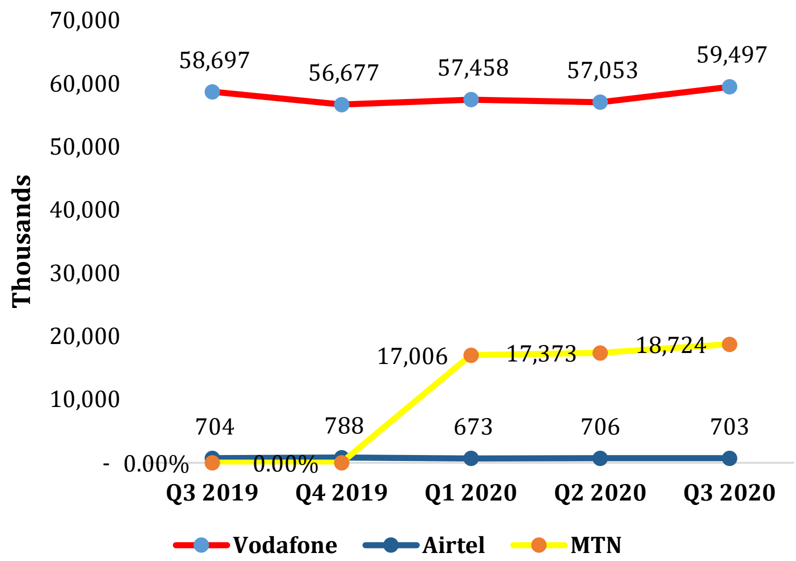
3.5 Fixed Data Subscriptions per Mobile Network Operator

Vodafone's subscriptions at the end of the third quarter of 2020 was 59,497 representing 75.39% of the market share. Its quarter-on-quarter and year-on-year subscriptions decreased by 4.28% and 1.36% respectively.

MTN's subscriptions at the end of the third quarter of 2020 was 18,724 representing 23.72% of the market share.

AirtelTigo recorded 703 subscriptions at the end of Q3 2020 with a market share of 0.89%. Year-on-year subscriptions declined by 0.14% from 704 to 703 (Figure 27) (Appendix A, Table 23).

Figure 27: 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 as at the end of the third quarter of 2020 was 604, indicating an increase from 575 in the previous quarter. The total number of operational FM stations increased from 428 to 446 in the quarter under review.

The Ashanti Region had the highest number of FM stations (87), representing 14.40% of the total number of authorised FM stations in the country. The Ahafo and North East Regions recorded the least number of authorised FM Stations, with 9 stations, representing 1.49% each (Figure 28) (Appendix A, Table 24).

Figure 28: Regional distribution of authorised FM stations as at end of Q3 2020

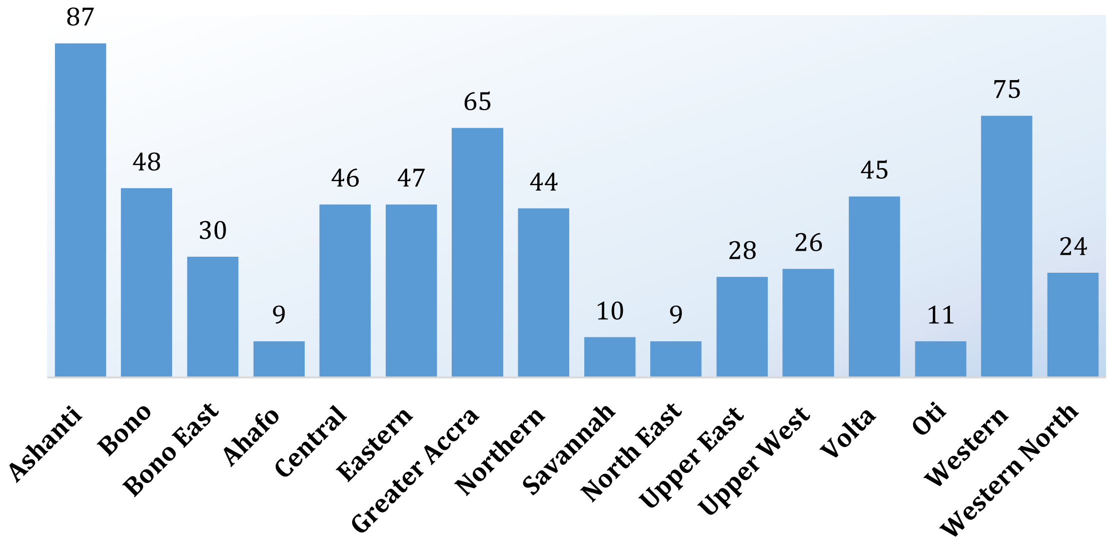


Figure 29: Regional distribution of On-air and Off-air FM stations as at end of Q3 2020

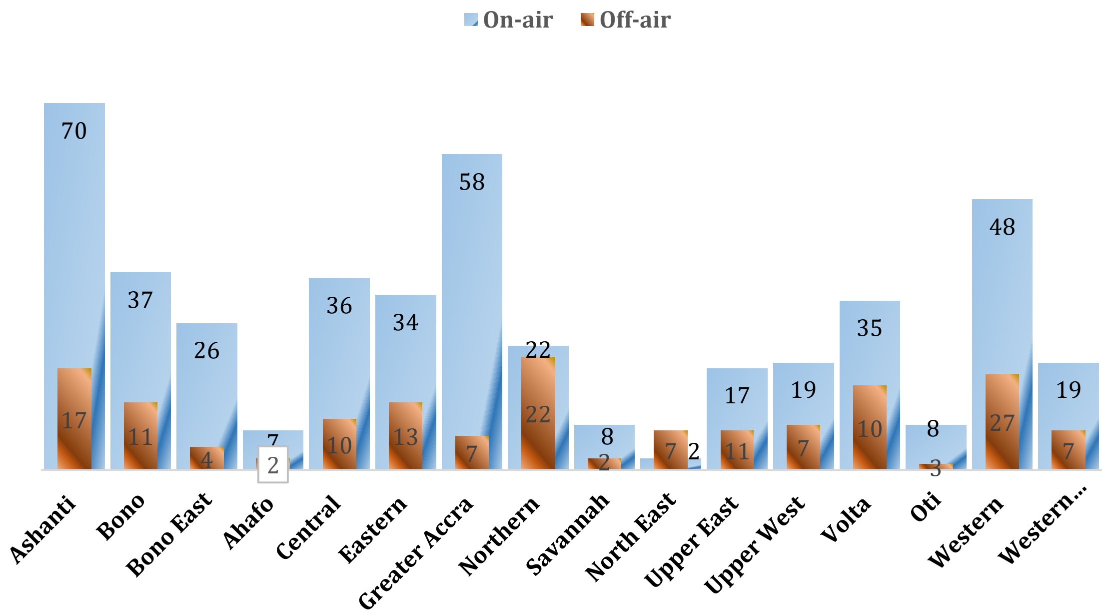
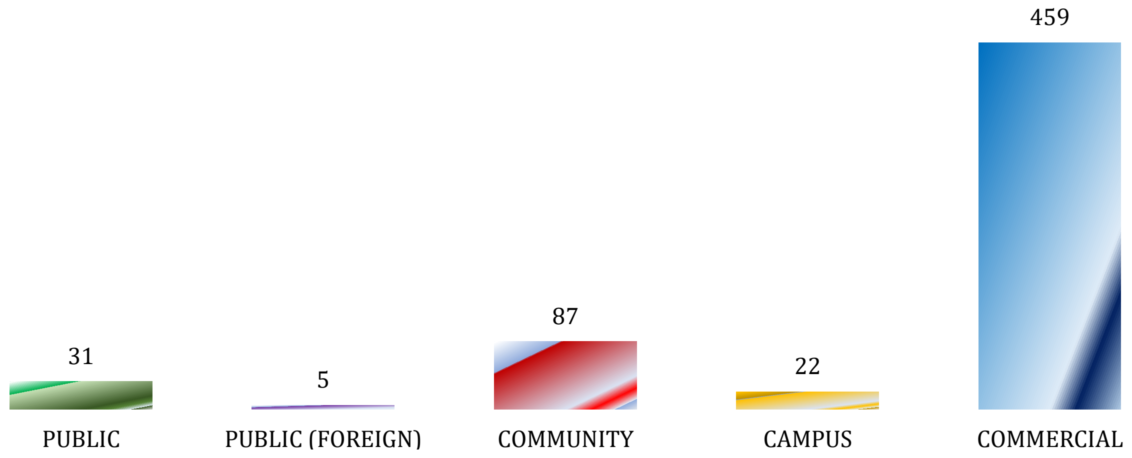


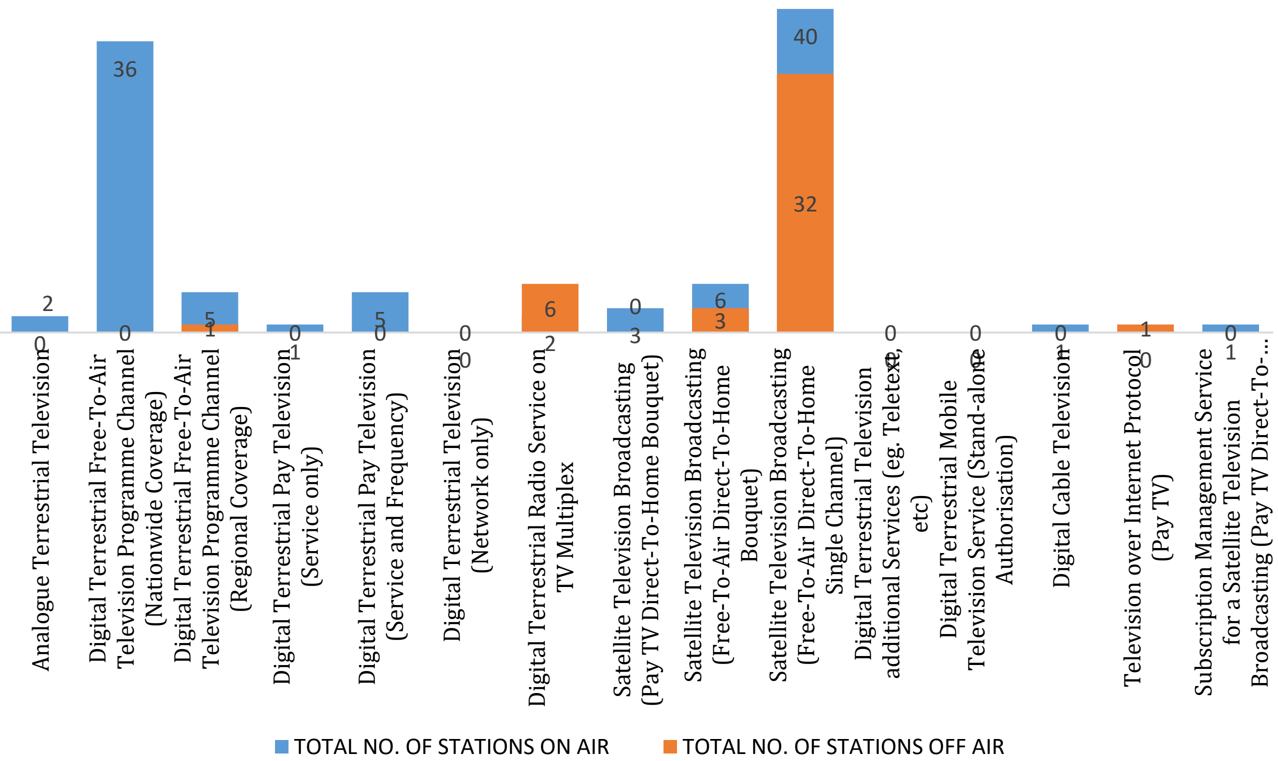
Figure 30: Purpose of Authorised Radio Stations as at Q3 2020



4.2 Authorised Television Stations

The total number of authorised TV stations in Ghana at the end of the third quarter of 2020 was 145, out of which 102 were operational (Figure 31) (Appendix A, Table 26).

Figure 31: Distribution of On-Air and Off-Air TV Stations as at end of Q3 2020



Appendix A (List of Tables)

Table 1: Mobile Voice Subscriptions and Penetration Rate

Subscription	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Mobile Subscription	40,460,203	40,857,077	41,959,298	40,476,556	40,352,913
Mobile Subscription Growth rate (%)	-1.59%	0.98%	2.70%	-3.53%	-0.31%
Net additions	-652,928	396,874	1,102,221	-1,482,742	-123,643.00
Net additions Growth Rate (%)	-33.47%	-160.78%	177.73%	-235%	-92%
Population[8]	30,009,663	30,190,081	30,371,584	30,554,178	30,737,870
Penetration Rate (%)	134.80%	135.30%	138.15%	132.47%	131.28%

Table 2: Mobile Voice Subscriptions and Market Share per Operator

Mobile Network Operator		Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
MTN	Subscriptions	21,569,033	22,555,848	23,945,672	23,277,698	23,722,910
	Market Share (%)	53.31%	55.21%	57.07%	57.51%	58.79%
Vodafone	Subscriptions	9,407,144	9,122,403	8,787,464	8,585,484	8,118,298
	Market Share (%)	23.25%	22.33%	20.94%	21.21%	20.12%
AirtelTigo	Subscriptions	8,764,093	8,453,053	8,498,008	7,866,500	7,749,026
	Market Share (%)	21.66%	20.69%	20.25%	19.43%	19.20%
Glo	Subscriptions	719,933	725,773	728,154	746,874	762,679
	Market Share (%)	1.78%	1.78%	1.74%	1.85%	1.89%
Total Industry Subscription		**40,460,203**	**40,857,077**	**41,959,298**	**40,476,556**	**40,352,913**

[8] 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	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Prepaid	39,861,332	40,216,604	41,287,248	39,747,560	39,589,962
Market Share	98.52%	98.43%	98.40%	98.20%	98.11%
Post-paid	598,871	640,473	672,050	728,996	762,951
Market Share	1.48%	1.57%	1.60%	1.80%	1.89%
Total mobile subscription	**40,460,203**	**40,857,077**	**41,959,298**	**40,476,556**	**40,352,913**

Table 4: Mobile Voice Traffic (Domestic) in Billions of Minutes

Traffic	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Traffic(Off-net)	1,884,872,036	1,821,302,871	1,725,005,017	1,735,775,253	1,877,416,645
Share (%)	9.06%	8.47%	7.51%	7.07%	7.44%
Growth (%)	5.79%	-3.37%	-5.29%	0.62%	8.16%
Traffic(On-net)	18,913,483,330	19,689,209,019	21,243,213,654	22,800,072,201	23,354,795,602
Share (%)	90.94%	91.53%	92.49%	92.93%	92.56%
Growth (%)	6.70%	4.10%	7.89%	7.33%	2.43%
Total traffic	**20,798,355,366**	**21,510,511,890**	**22,968,218,671**	**24,535,847,454**	**25,232,212,246**

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

Breakdown of Off-net Traffic	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Mobile to Mobile					
Traffic	1,874,456,752	1,809,660,639	1,713,795,345	1,725,360,859	1,866,455,132
Share (%)	99.45%	99.36%	99.35%	99.40%	99.42%
Growth (%)	5.80%	-3.46%	-5.30%	0.60%	8.18%

Mobile to Fixed					
Traffic	10,393,342	11,642,232	11,209,671	10,414,394	10,961,513
Share (%)	0.55%	0.64%	0.65%	0.60%	0.58%
Growth (%)	3.45%	12.02%	-3.72%	-7.09%	5.25%
Total Off-net Traffic	**1,884,850,094**	**1,821,302,871**	**1,725,005,017**	**1,735,775,253**	**1,877,416,645**

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

Traffic	Jul-Sep 19	Oct-Dec 19	Jan-Mar 20	Apr-Jun 20	Jul-Sep 20
Total mobile voice traffic	6,655,447,392	7,170,170,630	7,656,072,890	8,178,615,818	8,410,737,415
Average Mobile Voice Subscription	40,727,647	40,372,522	41,710,048	40,547,599	40,473,681
Minutes of Use (MoU) per Subscription	163.41	177.60	183.55	201.70	207.81
MoU growth rate (%)	3.59%	8.68%	3.35%	9.89%	3.03%

Table 7: International Traffic

Traffic	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Incoming International Traffic	61,018,472	56,814,366	51,473,267	59,056,445	54,307,726
Growth (%)	-35.70%	-6.89%	-9.40%	14.73%	-8.04%
Outgoing International Traffic	128,321,232	121,347,629	122,784,014	117,349,645	116,240,940
Growth (%)	-3.07%	-5.43%	1.18%	-4.43%	-0.95%

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

Mobile Operators	**Q3 2019**	**Q4 2019**	**Q1 2020**	**Q2 2020**	**Q3 2020**
Off- net SMS					
MTN	37,306,986	32,595,204	26,738,362	25,239,001	30,951,874
Vodafone	51,763,218	51,687,036	46,047,085	49,753,675	63,289,966
AirtelTigo	3,119,560	2,260,095	1,876,630	1,676,701	1,718,367
Glo	920,272	231,790	257,432	898,516	1,084,803
Total	**93,110,036**	**86,774,125**	**74,919,509**	**77,567,893**	**97,045,010**
On-net SMS					
MTN	330,421,743	305,060,095	271,939,194	287,142,138	247,832,376
Vodafone	265,778,541	228,752,668	150,323,428	133,299,083	134,817,468
AirtelTigo	11,121,701	7,655,834	4,296,095	3,794,801	3,397,444
Glo	118,848	12,461	26,331	141,095	173,986
Total	**607,440,833**	**541,481,058**	**426,585,048**	**424,377,116**	**386,221,274**
Total					
MTN	367,728,729	337,655,299	298,677,555	312,381,139	278,784,250
Vodafone	317,541,759	280,439,704	196,370,513	185,008,652	198,107,434
AirtelTigo	14,241,261	9,915,929	6,172,444	5,471,401	5,115,811
Glo	1,039,120	244,251	680,990	1,039,611	1,258,789
Total	**700,550,869**	**628,255,183**	**501,504,557**	**501,945,009**	**483,266,284**

Table 9: Average SMS per Subscription

	Jul-Sep 19	**Oct-Dec 19**	**Jan-Mar 20**	**Apr-Jun 20**	**Jul-Sep 20**
Total SMS	242,015,054	209,418,394	167,168,186	167,315,003	177,806,807
Mobile Subscription	40,727,647	40,372,522	41,710,048	40,547,599	40,392,873
Average SMS per Subscription	5.9	5.2	4.0	4.1	4.4

Table 10: Mobile Data Subscriptions (Prepaid/Postpaid)

Mobile Data Subscriptions		**Q3 2019**	**Q4 2019**	**Q1 2020**	**Q2 2020**	**Q3 2020**
Prepaid	Subscriptions	27,228,060	29,960,572	25,021,986	24,595,169	25,173,301
	Market Share (%)	*98.73*	98.75	97.63	97.59	97.52
Post-paid	Subscriptions	350,604	380,721	608,454	608,125	641,433
	Market Share (%)	*1.27*	1.25	1.62	2.41	2.48
Total mobile data subscriptions		**27,578,664**	**30,341,293**	**25,630,440**	**25,203,294**	**25,814,734**

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

Mobile Operator	**Q3 2019**	**Q4 2019**	**Q1 2020**	**Q2 2020**	**Q3 2020**
Mobile data usage (MB)	89,863,150,227	129,046,495,642	157,693,533,779	197,623,989,682	199,503,199,952

Table 12: Mobile Internet Usage per Subscription (MB)

Mobile Operator	**Jul-Sep 19**	**Oct-Dec 19**	**Jan-Mar 2020**	**Apr-Jun 20**	**Jul-Sep 20**
Mobile data usage (MB)	31,861,047,810	43,015,498,547	52,564,511,260	65,874,663,227	66,501,066,651
Total Average Subscription	27,798,219	28,820,282	25,348,558	25,242,452	25,625,826
Average Data Usage per Subscription (MB)	1146.2	1492.5	2073.7	2609.7	2595.1

Table 13: Mobile Data Traffic (MB) per Operator

Mobile Operator	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
MTN	75,944,166,843	83,293,912,024	107,722,839,616	135,550,242,371	143,363,912,915
	84.51%	64.55%	68.31%	68.59%	71.86%
Vodafone	-	29,399,350,038	31,118,840,152	38,594,683,077	32,215,967,959
	-	22.78%	19.73%	19.53%	16.15%
AirtelTigo	12,605,850,897	13,302,050,366	15,153,701,450	18,295,463,956	18,099,179,067
	14.03%	10.31%	9.61%	9.26%	9.07%
Glo	1,313,132,487	3,051,183,214	3,698,152,561	5,183,600,278	5,824,140,011
	1.46%	2.36%	2.35%	2.62%	2.92%
Total Industry Traffic (MB)	**89,863,150,227**	**129,046,495,642**	**157,693,533,779**	**197,623,989,682**	**199,503,199,952**

Table 14: Average Mobile Tariff per Service (GHp)

Tariff	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Average on-net mobile tariff	0.11	0.11	0.12	0.12	0.12
Average off-net mobile tariff	0.12	0.12	0.13	0.13	0.13
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	0.09	0.09

Table 15: BWA Data Subscriptions and Penetration

BWA Operator	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Subscription	49,355	46,050	47,019	46,575	43,117
Growth rate (%)	-3.83%	-6.70%	2.10%	-0.94%	-7.43%
Net Additions	-1,964	-3,305	969	-444	-3,458
Population	30,009,663	30,190,081	30,371,584	30,554,178	30,737,870
Penetration Rate (%)	0.16%	0.15%	0.15%	0.15%	0.14%

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

BWA operator	Subscription and Market Share	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Surfline	Subscription	46,462	43,735	43,939	43,808	40,992
	Market share (%)	94.14%	94.97%	93.45%	94.06%	95.07%
Telesol	Subscription	1,600	2,104	2,024	1,711	1,069
	Market share (%)	3.24%	4.57%	4.30%	3.67%	2.48%
BBH	Subscription	1,058	1,058	1,056	1,056	1,056
	Market share (%)	2.14%	2.30%	2.25%	2.27%	2.45%
BLU	Subscription	235	211	-	-	-
	Market share (%)	0.48%	0.46%	-	-	-
Industry Total		**49,355**	**46,050**	**47,019**	**46,575**	**43,117**

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

BWA operator		Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Surfline	Data usage (MB)	3,320,389,950	3,294,049,738	3,224,680,819	4,534,304,590	4,355,618,160
	Market share (%)	80.71%	97.05%	94.51%	90.06%	96.31%
BBH	Data usage (MB)	660,855,380	55,572,920	146,550,970	162,793,380	166,554,120
	Market share (%)	16.06%	1.64%	4.30%	3.23%	3.68%
BLU	Data usage (MB)	132,424,093	44,302,566	40,655,523	-	-
	Market share (%)	3.22%	1.31%	1.12%	-	-
Telesol	Data usage (MB)	183,264	213,833	217,30	337,791,640	360,497,460
	Market share (%)	0.00%	0.01%	0.01%	6.71%	7.38%
Industry Total (MB)		**4,113,852,687**	**3,394,139,057**	**3,629,189,292**	**5,034,889,610**	**4,882,669,740**

Table 18: Internet Usage per BWA Subscriptions (MB)

BWA Operator	Jul-Sep 19	Oct-Dec 19	Jan-Mar 20	Apr-Jun 20	Jul-Sep 20
Volume of data traffic	1,236,648,960	1,193,050,112	1,137,368,205	1,678,296,064	1,627,556,864
Average Subscription	50,294	49,373	46513	46,760	44,651
Data Usage per Subscription (MB)	24,588.40	24,163.90	24,452.90	35,891.45	36,450.35

Table 19: Fixed Network Voice Subscriptions and penetration

Fixed Operator	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Vodafone	279,247	280,321	289,106	292,661	294,157
	97.66%	97.15%	97.73%	97.65%	98.07%
AirtelTigo	6,684	8,210	6,669	7,032	5,776
	2.34%	2.85%	2.25%	2.35%	1.93%
MTN	-	-	39	21	26
	-	-	0.01%	0.01%	0.01%
Total industry subscription	285,931	288,531	295,814	299,714	299,959
Population	30,009,663	30,190,081	30,371,584	30,554,178	30,737,870
Fixed Network Penetration Rate (%)	0.95%	0.96%	0.97%	0.98%	0.98%

Table 20: Fixed Network Volume of Traffic in Minutes

Traffic	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
On-net Fixed voice traffic	-	-	-	-	-
Off-net fixed voice traffic	15,786,823	12,702,490	10,296,410	8,093,500	9,085,387
Total Fixed Voice Traffic	15,786,823	12,702,490	10,296,410	8,093,500	9,085,387

Table 21: Fixed Network Minute of Use per Subscriptions

Traffic	Jul-Sep 19	Oct-Dec 19	Jan-Mar 2020	Apr-Jun 20	Jul-Sep 20
Total Fixed Voice Traffic	3,312,569	3,446,917	3,432,137	2,697,833	3,028,462
Average Subscription	283,366	287,395	293,536	298,359	301,354
Minutes of Use per Subscription (MoU)	11.7	12.0	11.7	9.0	10.0
Growth Rate	-1.00%	2.58%	-2.51%	-22.67%	11.14%

Table 22 : Fixed Broadband Data Subscriptions and Penetration

Fixed network operator	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Vodafone	58,697	56,677	57,458	57,053	59,497
	98.81%	98.63%	76.47%	75.94%	75.39%
Airtel	704	788	673	706	703
	1.19%	1.37%	0.90%	0.94%	0.89%
MTN	-	-	17,006	17,373	18,724
	-	-	22.63%	23.12%	23.72%
Total fixed data subscription	59,401	57,465	75,137	75,132	78,924
Population	30,009,663	30,190,081	30,371,584	30,554,178	30,737,870
Fixed Data penetration rate (%)	0.20%	0.19%	0.25%	0.25%	0.26%

Table 23: Fixed Network Data Subscriptions per Operator

Fixed network operator	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
Vodafone	58,697	56,677	57,458	57,053	59,497
	98.81%	98.63%	76.47%	75.94%	75.39%
AirtelTigo	704	788	673	706	703
	1.19%	1.37%	0.90%	0.94%	0.89%
MTN	-	-	17,006	17,373	18,724
	-	-	22.63%	23.12%	23.72%

Table 24: Regional Distribution of FM Stations by Purpose

Name of Regions	Public	Public (Foreign)	Community	Campus	Commercial
ASHANTI	2	1	10	3	71
BONO	1	-	3	2	42
BONO EAST	2	-	4	-	24
AHAFO	-	-	1	-	8
CENTRAL	2	-	9	3	32
EASTERN	2	-	9	1	35
GREATER ACCRA	2	3	7	4	49
NORTHERN	3	-	7	2	32
SAVANNAH	3	-	4	-	3
NORTH EAST	1	-	4	-	3
UPPER EAST	2	-	9	2	15
UPPER WEST	2	-	7	2	15
VOLTA	3	-	4	1	37
OTI	1	-	2	-	8
WESTERN	2	1	7	2	64
WESTERN NORTH	3	-	0	-	21
Total	**31**	**5**	**87**	**22**	**459**

Table 25: Regional Distribution of FM Stations as at the end of Q3 2020

Name Of Regions	Authorised FM Stations	FM Stations In Operation
ASHANTI	87	70
BONO	48	37
BONO EAST	30	26
AHAFO	9	7
CENTRAL	46	36
EASTERN	47	34
GREATER ACCRA	65	58
NORTHERN	44	22
SAVANNAH	10	8
NORTH EAST	9	2
UPPER EAST	28	17
UPPER WEST	26	19
VOLTA	45	35
OTI	11	8
WESTERN	75	48
WESTERN NORTH	24	19
TOTAL	**604**	**446**

Table 26: Authorised TV Services in Ghana as at end of Q3 2020

Types of TV stations	Authorised TV stations		No. of TV Stations in Operation (Q3 2020)	No. of TV Stations not in Operation (Q3 2020)
	End of Q2 2020	End of Q3 2020		
Analogue Terrestrial Television	2	2	2	0
Digital Terrestrial Pay Television (Service only)	1	1	1	0
Digital Terrestrial Pay Television (Service and Frequency)	5	5	5	0
Digital Terrestrial Television (Network only)	0	0	0	0
Digital Terrestrial Free-To-Air Television Programme Channel (National Coverage)	36	36	36	0
Digital Terrestrial Free-To-Air Television Programme Channel (Regional Coverage)	6	6	5	1
Digital Terrestrial Radio Service on TV Multiplex	8	8	2	6
Satellite Television Broadcasting (Pay TV Direct-To-Home Bouquet)	4	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)	72	72	40	32
Digital Terrestrial Television additional Services (eg. Teletext, etc)	0	0	0	0
Digital Terrestrial Mobile Television Service (Stand-alone Authorisation)	0	0	0	0

Digital Cable Television	1	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	**146**	**145**	**102**	**43**

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

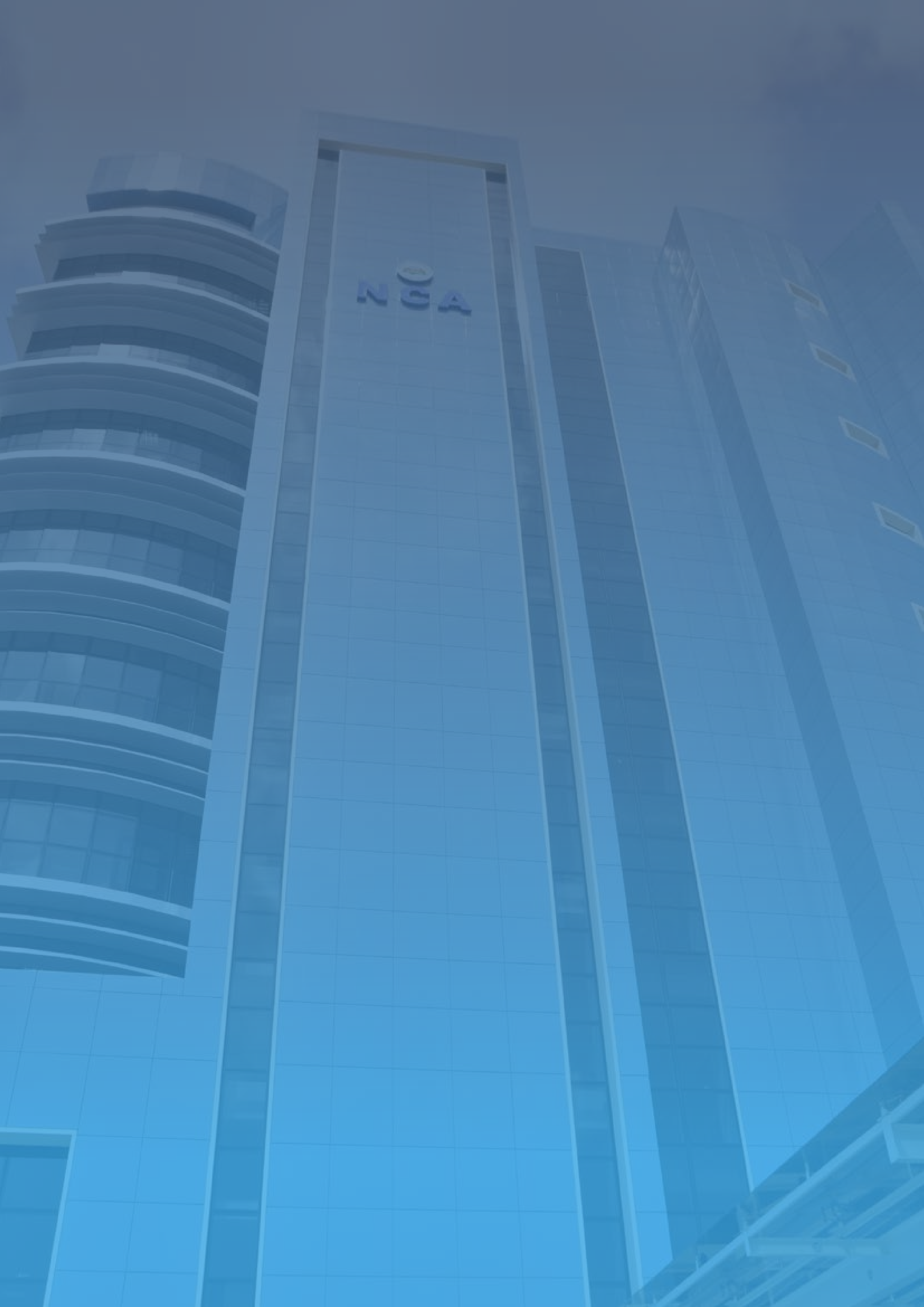
National Communications Authority,
House No 83, North Nkwabeng
P. O. Box SY125, Sunyani, Brong Ahafo Region
Tel: +233 (0) 3520 27564
E-Mail: complaints.sunyani@nca.org.gh

- ### 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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