QUARTERLY STATISTICAL BULLETIN ON COMMUNICATIONS IN GHANA

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THIRD QUARTER

JULY - SEPTEMBER, 2023

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 communications sector of Ghana. 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, AT and Telesol

DEFINITION OF TERMS

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

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

Mobile Data-refers to active mobile data subscriptions to GPRS, EDGE, HSPA, UMTS 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 volume of data traffic for the quarter by 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	3
Fixed Network Operators	3	3
Broadband Wireless Access	2	1
Television Stations	175	127
FM Stations	737	544

B1. Total Subscriptions

		QUARTER-ON-QUARTER			YEAR-ON-YEAR		
SUBSCRIPTION	**UNITS**	**Q2 2023**	**Q3 2023**	***Growth (%)***	**Q3 2022**	**Q3 2023**	***Growth (%)***
Mobile Voice Subscription	Million	34.15[3]	32.55	*-4.70%*	40.81	32.55	*-20.24%*
Fixed Voice Subscription	Thousand	333.43	320.09	*-4.00%*	325.06	320.09	*-1.53%*
Mobile Data Subscription	Million	22.34	22.29	*-0.22%*	24.37	22.29	*-8.54%*
Fixed Data Subscription	Thousand	110.72	113.64	*2.64%*	98.59	113.64	*15.26%*
Broadband Wireless Access	Thousand	1.39[4]	1.42	*2.16%*	43.40	1.42	*-96.73%*

B2. Voice, Data and SMS Traffic

		QUARTER-ON-QUARTER			YEAR-ON-YEAR		
TRAFFIC	**UNITS**	**Q2 2023**	**Q3 2023**	***Growth (%)***	**Q3 2022**	**Q3 2023**	***Growth (%)***
Mobile Voice Traffic (Domestic)	Billion minutes	23.56	24.79	*5.23%*	26.19	24.79	*-5.33%*
Fixed Voice Traffic	Million minutes	8.24	7.98	*-3.16%*	9.03	7.98	*-11.63%*
Incoming International Traffic (Direct to Network Only)	Million minutes	50.01	51.82	*3.62%*	64.62	51.82	*-19.81%*
Outgoing International Traffic	Million minutes	66.13	67.11	*1.48%*	77.25	67.11	*-13.13%*
Mobile Data Traffic (MB)	Billion MB	445.30	479.08	*7.59%*	366.52	479.08	*30.71%*
BWA Data Traffic (MB)	Billion MB	0.273	0.265	*-2.99%*	6.539	0.265	*-95.94%*
SMS Count	Million	896.03	874.14	*-2.44%*	699.13	874.14	*25.03%*

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

[4] Telesol is the only Broadband Wireless Access Operator that provided data during the quarter under review

B3. Penetration Rate (%)

PENETRATION RATE (%)	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q2 2023	Q3 2023	*Growth (%)*	Q3 2022	Q3 2023	*Growth (%)*
Mobile Voice Subscription	106.40	100.88	*-5.19%*	129.14	100.88	*-21.88%*
Fixed Voice Subscription	1.04	0.99	*0.99%*	1.03	0.99	*-3.88%*
Mobile Data Subscription	69.60	69.10	*-0.72%*	77.10	69.10	*-10.38%*
Fixed Data Subscription	0.34	0.35	*2.94%*	0.31	0.35	*12.90%*
Broadband Wireless Access	0.004	0.004	*0.00%*	0.14	0.004	*-97.14%*

C1. Broadcasting Sector

FM/TV AUTHORISATION & OPERATIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q2 2023	Q3 2023	*Growth (%)*	Q3 2022	Q3 2023	*Growth (%)*
FM Authorisation	728	737	*1.24%*	707	737	*4.24%*
FM Stations Operating	546	544	*-0.37%*	513	544	*6.04%*
TV Authorisations	170	175	*4.14%*	155	175	*13.55%*
TV Stations Operating	118	120	*1.69%*	113	120	*6.19%*

C2. Categories of Authorised FM Radio Stations

CATEGORIES OF FM RADIO STATIONS	QUARTER-ON-QUARTER			YEAR-ON-YEAR		
	Q2 2023	Q3 2023	*Growth (%)*	Q3 2022	Q3 2023	*Growth (%)*
Public	31	31	*0.00%*	31	31	*0.00%*
Public Foreign	5	5	*0.00%*	5	5	*0.00%*
Campus	25	25	*0.00%*	24	25	*4.17%*
Community	126	133	*5.56%*	119	133	*11.76%*
Commercial	541	543	*0.37%*	528	543	*2.84%*

1.0 MOBILE NETWORK

The National Communications Authority (NCA) has licensed four service providers to provide mobile telecoms services in Ghana namely AT, Glo, MTN and Vodafone. This report will focus mainly on MTN, Vodafone and AT due to non-submission of data by Glo.

This section provides details on the performance of the Mobile Network Operators (MNOs) in Ghana by focusing on Mobile Voice Subscriptions, Net Additions to Voice/Data Subscriptions, Mobile Penetration, Volume of Voice/Data Traffic, SMS and Mobile Data Subscriptions.

1.1 Mobile Voice Subscriptions and Penetration Rate[5]

Mobile Voice subscriptions decreased from 34.15 million in Q2 2023 to 32.55 million at the end of Q3 2023, representing a decline in growth by 4.70%.

Year -on-year subscriptions also decreased from 40.81 million at the end of Q3 2022 to 32.55 million at the end of Q3 2023, recording a decrease of 20.24% growth rate.

The penetration rate at the end of the quarter under review was 100.88% as compared to 106.40% recorded in Q2 2023, indicating a decrease in growth rate by 5.52% (Figure 1) (Appendix, Table 1).

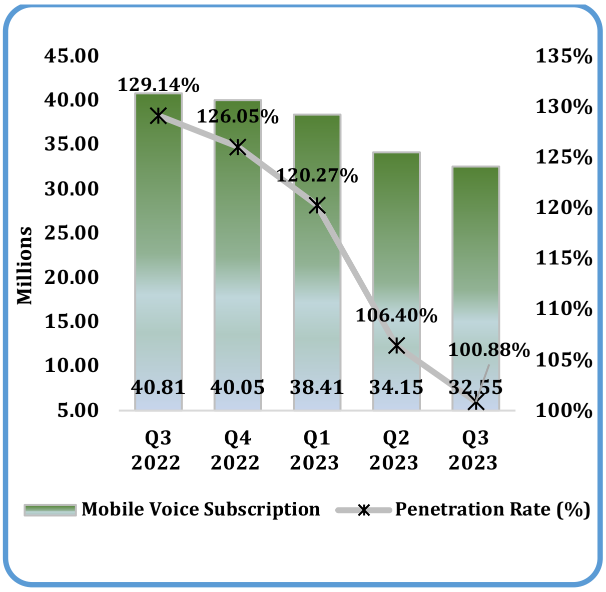


Figure 1: Mobile Voice Subscription and Penetration Rate

1.1.1 Mobile Voice Subscriptions and Market Share per Operator

At the end of Q3 2023, MTN recorded 71.73% of the market share with 23.35 million subscriptions. Vodafone followed with 6.33 million subscriptions (19.44%).

AT ended the quarter with a market share of 8.83% with an approximate subscription base of 2.87 million. (Figure 2) (Appendix, Table 2).

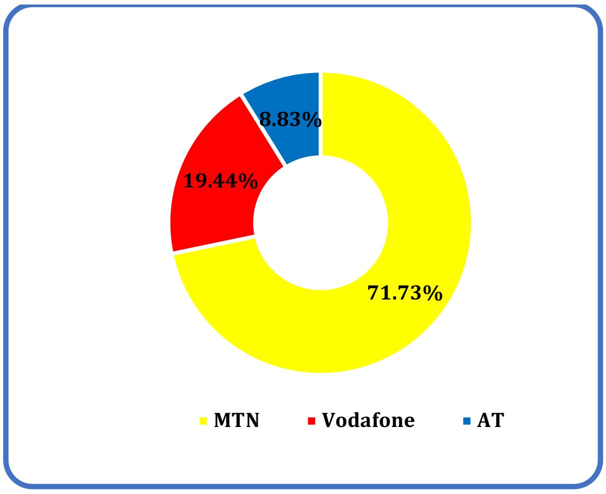


Figure 2: Market Share per Operator

1.1.2 Quarter-on-Quarter Market Share per Operator in Percentage

MTN decreased its market share in percentage from 73.68% in Q2 2023 to 71.73% in Q3 2023, representing a negative growth of 2.65%. Vodafone had an increase in growth by 7.20% from 18.14% in Q2 2023 to 19.44% in Q3 2023. AT's market share also increased in percentage from 8.19% in Q2 2023 to 8.83% in Q3 2023 representing a growth of 7.91%.

[5] The mobile penetration rate is estimated by dividing the total number of mobile subscribers by the total population.

1.1.3 Prepaid and Postpaid Mobile Voice Subscriptions

Mobile Voice subscription for prepaid subscribers was 32.06 million representing a market share of 98.50%.

Post-paid subscriptions at the end of the quarter under review was 0.49 million and a market share of 1.50%. (Figure 3) (Appendix, Table 3).

Mobile Voice subscription for prepaid subscribers decreased from 33.67 million at the end of Q2 2023 to 32.06 million at the end of Q3 2023 representing a percentage decrease of 4.78%.

Mobile Voice subscription for postpaid subscribers grew from approximately 0.49 million in Q2 2023 to 0.49 million in Q3 2023 representing a marginal percentage increase of 0.44%.

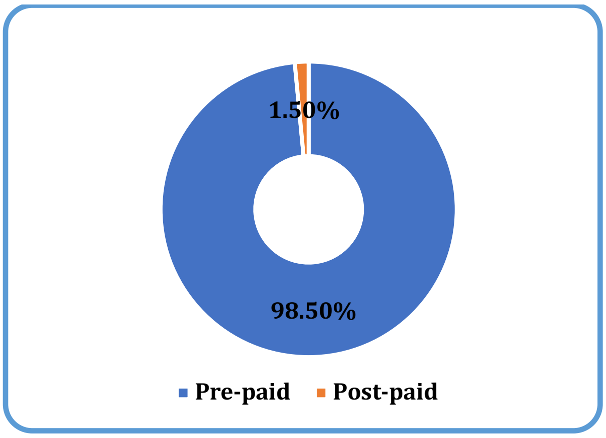


Figure 3: Prepaid and Postpaid Mobile Voice Subscriptions

1.2 Off-Net Domestic Voice Traffic

Mobile-to-Mobile Off-Net traffic increased from 1.79 billion minutes at the end of Q2 2023 to 1.99 billion at the end of Q3 2023 representing an increase in growth by 11.31%.

Year-on-Year Mobile-to-Mobile Off-Net traffic declined from 2.14 billion minutes at the end of Q3 2022 to 1.99 billion minutes at the end of Q3 2023, representing a decrease in growth by 6.65%.

Quarter-on-Quarter Mobile-to-Fixed Off-Net Traffic increased from 11.68 million minutes in Q2 2023 to 12.16 million minutes at the end of Q3 2023 indicating an increase in growth by 4.11%.

Year-on-Year Mobile-to-Fixed Off-Net traffic decreased in growth by 2.90% from 12.52 million minutes at the end of Q3 2022 to 12.16 million minutes at the end of Q3 2023. (Figure 4) (Appendix, Table 4)

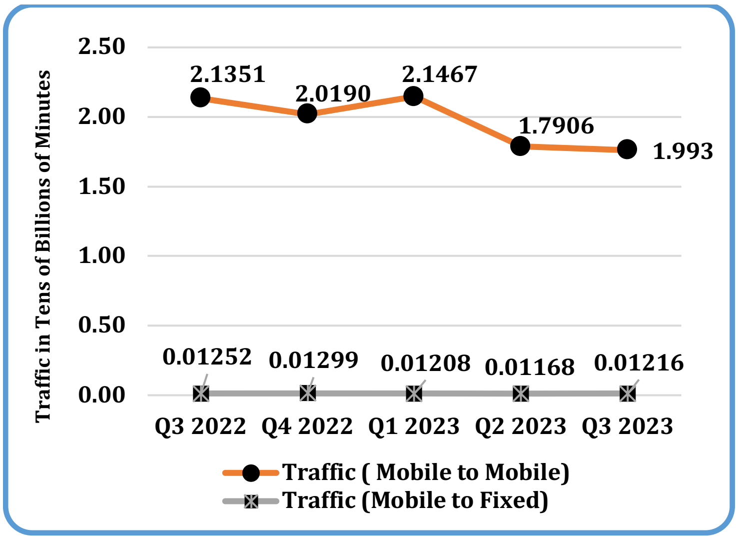


Figure 4: Off-Net Traffic Distribution between Mobile and Fixed Networks

1.2.1 Total Domestic Mobile Voice Traffic

Total Domestic Mobile Voice Traffic recorded an increase from 23.56 billion minutes in Q2 2023 to 24.79 billion minutes in Q3 2023, representing a 5.23% rise in growth.

Year-on-year Mobile Voice Traffic dropped from 26.19 billion minutes at the end of Q3 2022 to 24.79 billion minutes at the end of Q3 2023, representing a decreased growth rate of 5.33%.

In the quarter under review, Off-Net traffic increased from 1.80 billion minutes at the end of Q2 2023 to 2.01 billion minutes at the end of Q3 2023, giving a growth rate of 11.27%.

Year-on-year Off-Net traffic decreased from 2.15 billion minutes in Q3 2022 to 2.01 billion minutes at the end of Q3 2023 representing a 6.62% decline in growth.

On-Net traffic increased from 21.76 billion minutes in the previous quarter to 22.79 billion minutes at the end of Q3 2023 representing a growth rate of 4.73% during the quarter under review.

Year-on-year On-Net traffic also declined from 24.04 billion minutes in Q3 2022 to 22.79 billion minutes at the end of Q3 2023 representing a 5.22% decrease in growth rate. (Figure 5) (Appendix, Table 5)

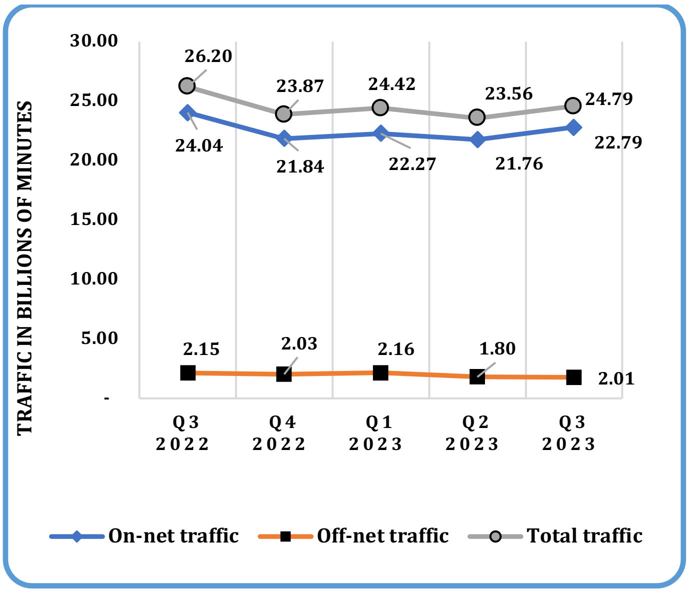


Figure 5: Total Domestic Mobile Voice Traffic in Billions of Minutes

1.2.2 Minutes of Use (MoU)

Quarter-on-quarter average minutes of use per subscription increased from 684.38 minutes in Q2 2023 to 750.34 minutes representing a 9.64% increase in growth rate in Q3 2023.

Year-on-year minutes of use per subscription also increased from 643.32 minutes in Q3 2022 to 750.34 minutes in Q3 2023, representing 16.82% increase in growth (Figure 6) (Appendix, Table 6).

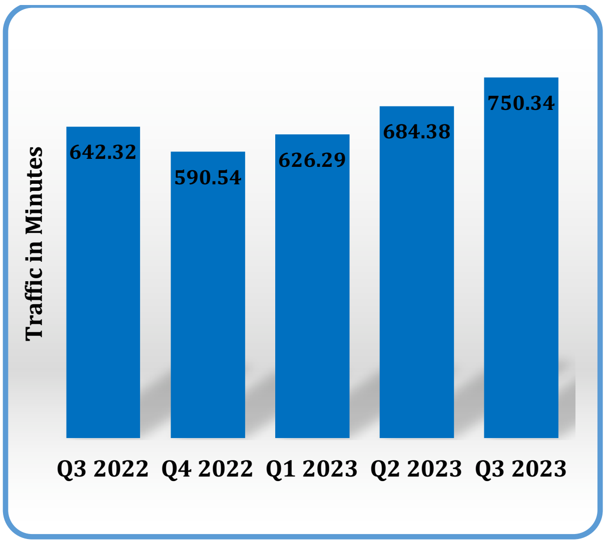


Figure 6: Mobile Voice Traffic Minutes of Use (MoU) per subscriptions

1.3 International Traffic

Inbound International Traffic increased from 50.01 million minutes in Q2 2023 to 51.82 million minutes in Q3 2023, representing a percentage increase in growth rate by 3.61%.

Year-on-year Inbound International Traffic also declined from 64.62 million minutes in Q3 2022 to 51.82 million minutes in Q3 2023 with a decreased growth rate of 19.80%.

Quarter-on-quarter outbound International Traffic showed an increase in growth by 1.48% from 66.13 million to 67.11 million in the quarter under review.

Year-on-year outbound International Traffic showed a 13.13% decline in growth from 77.25 million in Q3 2022 to 67.11 million in Q3 2023. (Figure 7) (Appendix, Table 6)

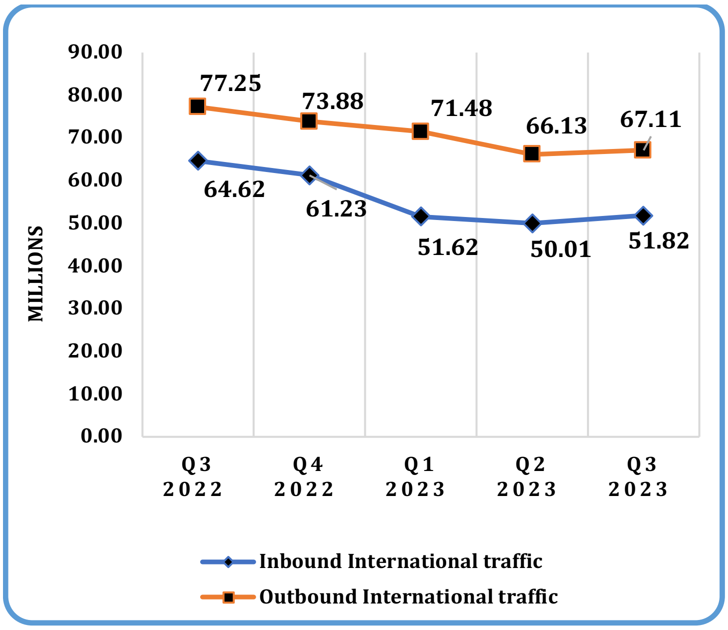


Figure 7: International Traffic in Millions of Minutes

1.3.1 Short Message Services (SMS)

The total number of Short Messages Service (SMS) sent at the end of Q3 2023 was 874.14 million as compared to 896.03 million in Q2 2023, recording a decline in growth by 2.44%.

Year-on-year total SMS counts increased from 699.13 million in Q3 2022 to 874.14 million at the end of Q3 2023 representing a growth rate of 25.03% (Figure 8) (Appendix, Table 8)

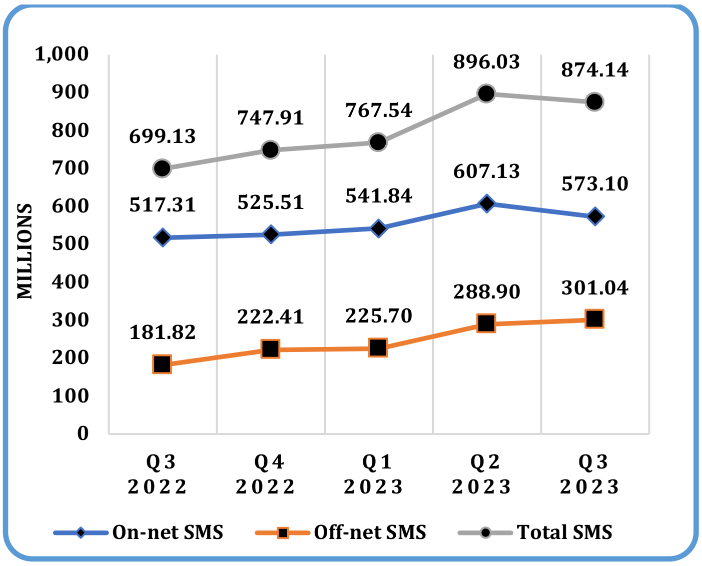


Figure 8: Total Number of SMS in Million

1.3.2 SMS Counts per Mobile Network Operator and Market Share

The volume of SMS traffic originating from MTN was 632.65 million at the end of Q3 2023; representing a market share of 72.37% of the total SMS counts.

The volume of SMS traffic from Vodafone was 229.21 million, representing a market share of 26.22% of the total SMS counts.

AT had an SMS counts of 12.28 million, representing 1.40% of the market share of the total SMS counts.

(Figure 9) (Appendix, Table 8).

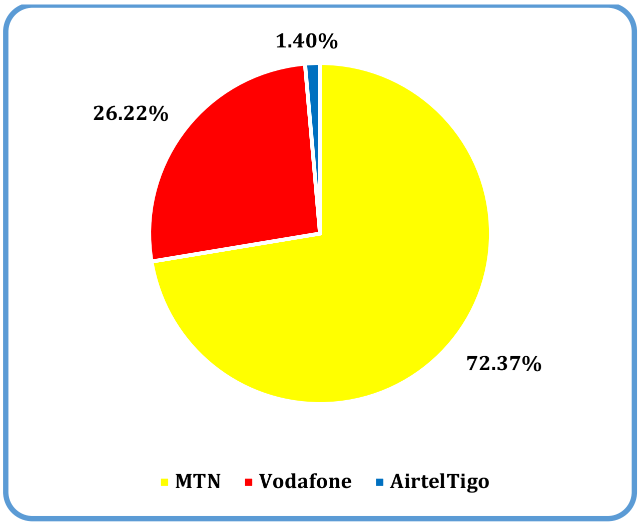


Figure 9: SMS Counts Market Share per Operator

1.3.3 SMS per Subscription

Quarter-on-quarter SMS sent per subscription at the end of Q3 2023 was 26.50 SMS, indicating a 32.26% increase in SMS per subscriptions as compared to the end of Q2 2023 (26.00). (Figure 10) (Appendix, Table 9).

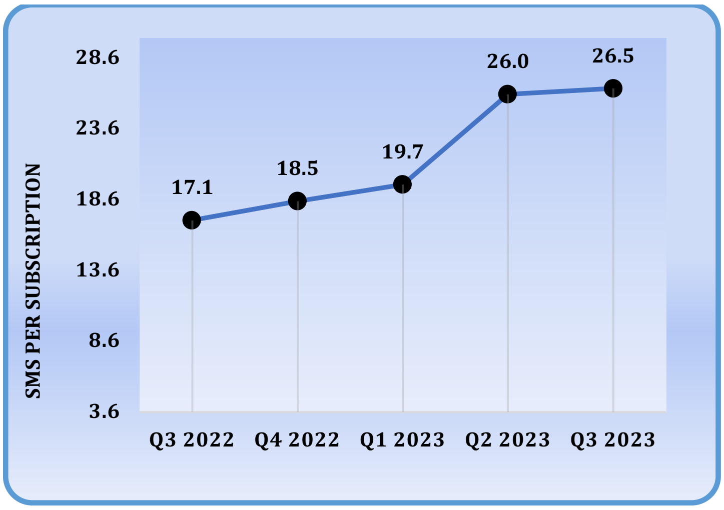


Figure 10: SMS per Subscription

1.4 Mobile Data Subscriptions and Penetration Rate (%)

Mobile Data Subscriptions decreased by 0.21% from 22.34 million at the end of Q2 2023 to 22.29 million at the end of Q3 2023.

Year-on-year subscriptions also decreased by 8.51% from 24.37 million at the end of Q3 2022 to 22.29 million at the end of Q3 2023. The penetration rate as at the end of the Q3 2023 was 69.10% (Figure 11) (Appendix, Table 10).

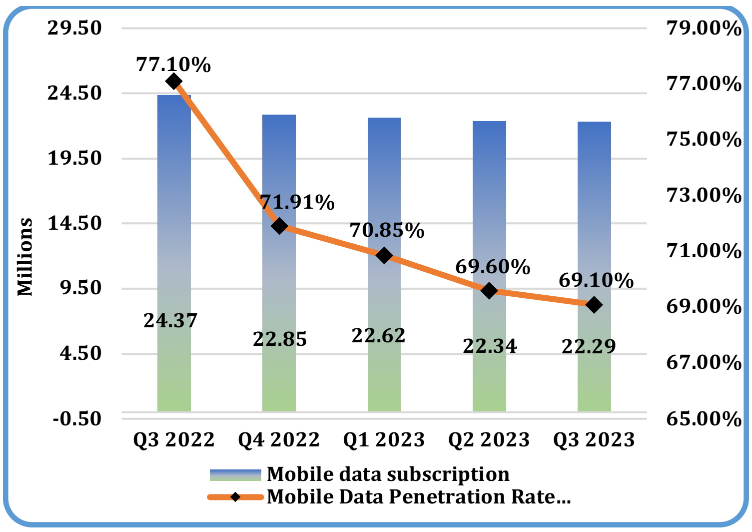


Figure 11: Mobile Data Subscriptions in Millions and Penetration Rate (%)

1.4.1 Mobile Data Prepaid and Postpaid Subscriptions and Market Share

Mobile Data pre-paid subscriptions decreased from 22.14 million at the end of Q2 2023 to 22.09 million subscriptions at the end of Q3 2023, representing a market share of 99.07% of the total Mobile Data subscriptions.

Mobile Data post-paid subscriptions increased from 202,700 at the end of Q2 2023 to 206,542 at the end of Q3 2023 representing a market share of 0.93% of the total Mobile Data subscriptions. (Figure: 12) (Appendix, Table 10).

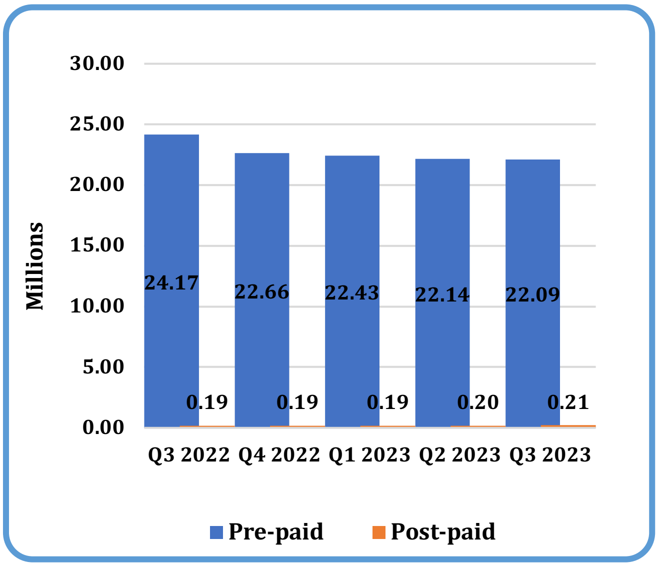


Figure 12: Mobile Data Pre-paid and Post-paid Subscriptions

1.4.2 Mobile Data Subscriptions per Mobile Network Operator and Market Share

MTN recorded 17.63 million subscriptions, which represents 79.07% of the market, while Vodafone recorded 2.95 million subscriptions with a 13.23% share of the market.

AT had 1.72 million in mobile data subscriptions with a 7.70% share of the market. (Figure 13).

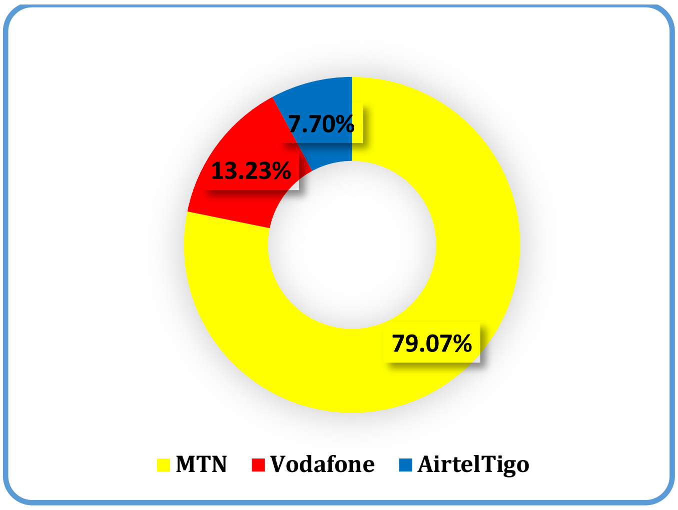


Figure 13: Mobile Data Market Share per Operator

1.5 Mobile Data Traffic in Billions of Megabytes (MB)

At the end of Q3 2023, internet traffic generated by the Mobile Network Operators was 479.08 billion megabytes of data, recording an increase in growth by 7.59% as compared to 445.30 billion megabytes of data at the end of Q2 2022.

Year-on-year internet traffic increased from 366.52 billion megabytes at the end of Q2 2022 to 479.08 billion megabytes at the end of Q3 2023, representing an increase of 30.71%. (Figure 14) (Appendix, Table 11).

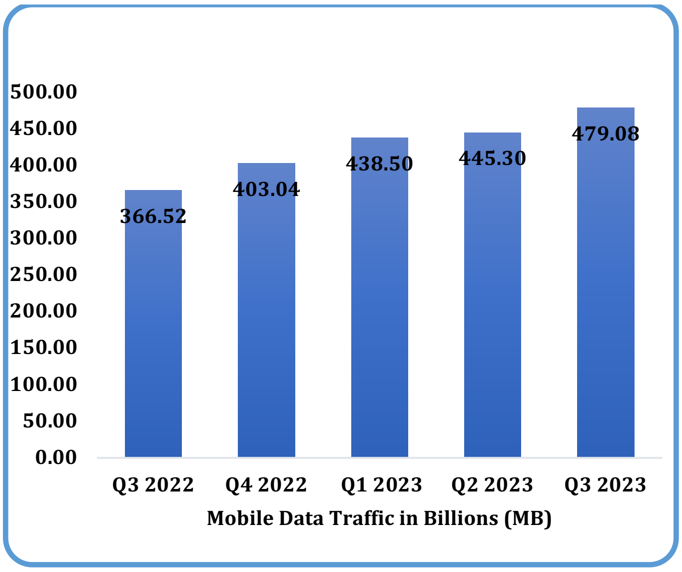


Figure 14: Mobile Data Traffic in Billions of Megabytes (MB)

1.5.1 Mobile Internet Usage per Subscription (MB) [6]

Mobile internet usage per subscription increased from 19,682 MB at the end of Q2 2023 to 21,898 MB at the end of Q3 2023 recording a growth of 11.26%.

Year-on- year mobile data usage per subscription increased from 15,150 MB at the end of Q3 2022 to 21,898 MB at the end of Q3 2023, recording a growth of 44.54% (Figure 15) (Appendix, Table 12).

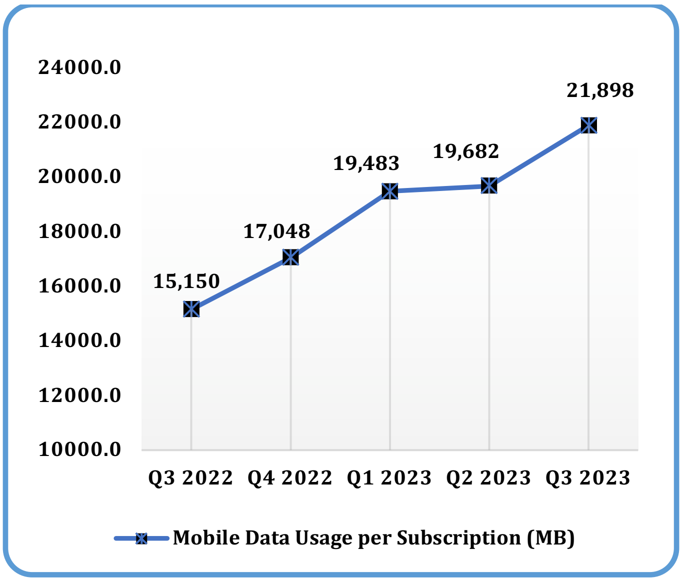


Figure 15: Mobile Data Usage per Subscription (MB)

1.5.2 Mobile Internet Traffic (MB) per Mobile Network Operator

MTN generated the highest volume of internet traffic, 384.20 billion megabytes with a market share of 80.20%.

Vodafone followed with a traffic of 73.80 billion megabytes with a market share of 15.41%.

AT also had 21.07 billion megabytes of data, recording a market share of 4.40%.

(Figure 16) (Appendix, Table 13)

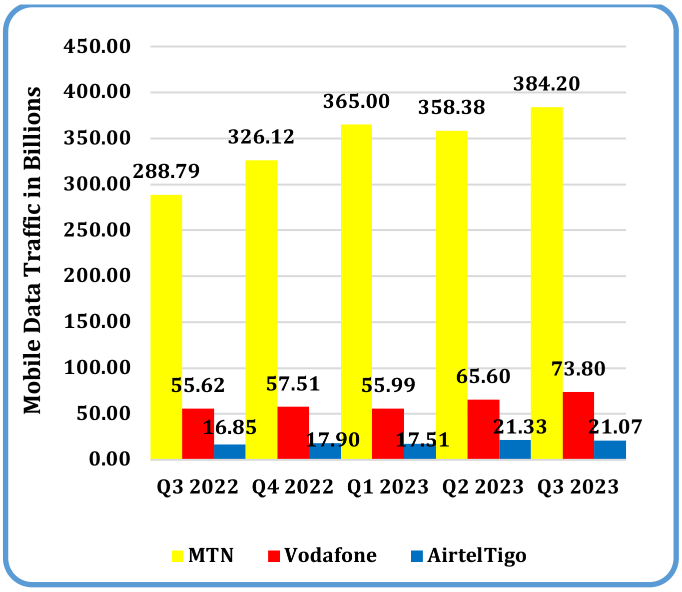


Figure 16: Mobile Internet Traffic (MB) per Operator

1.6 Mobile Telecommunications Service Tariffs

Quarter- on -quarter average tariffs for off net mobile voice was 0.13 pesewas at the end of Q3 2023. Average on net tariff mobile voice was also 0.13 pesewas. Average off net and on net SMS tariffs both stood at 0.06 pesewas. The average data tariff for the quarter under review was 0.12 pesewas. (Figure 17) (Appendix, Table 14).

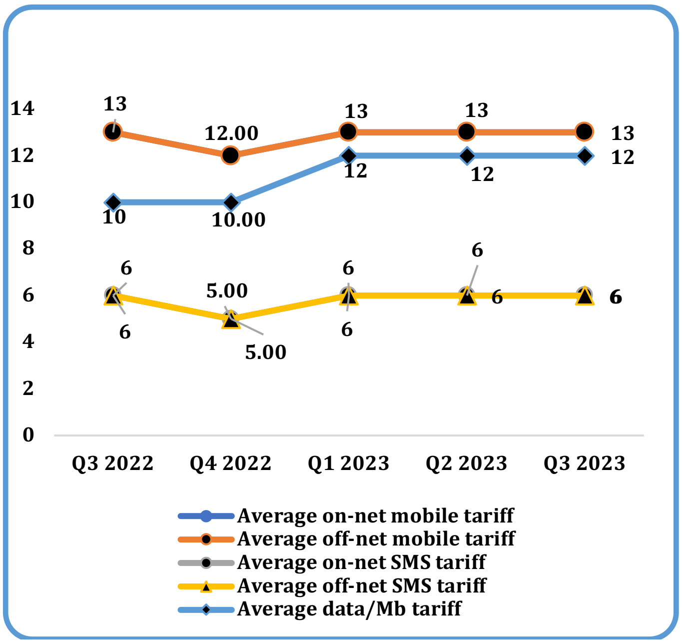


Figure 17: Average Mobile Tariffs per Service

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

2.0 BROADBAND WIRELESS ACCESS (BWA)

There are five (5) licensed Broadband Wireless Access operators in Ghana namely BLU Telecommunications, Broadband Home (BBH), Busy Internet, Surfline and Telesol. As at Q3 2023, only Telesol is operational and submitted data for this report.

2.1 BWA Subscriptions and Penetration Rate

BWA subscriptions increased from 1,390 in Q2 2023 to 1,420 in Q3 2023, representing an increase in growth by 2.16%.

Year-on-year subscriptions also declined by 97%, from 43,400 in Q3 2022 to 1,420 at the end Q3 2023.

Penetration rate for broadband wireless access was 0.004% at the end of Q3 2023. (Figure 18) (Appendix, Table 15).

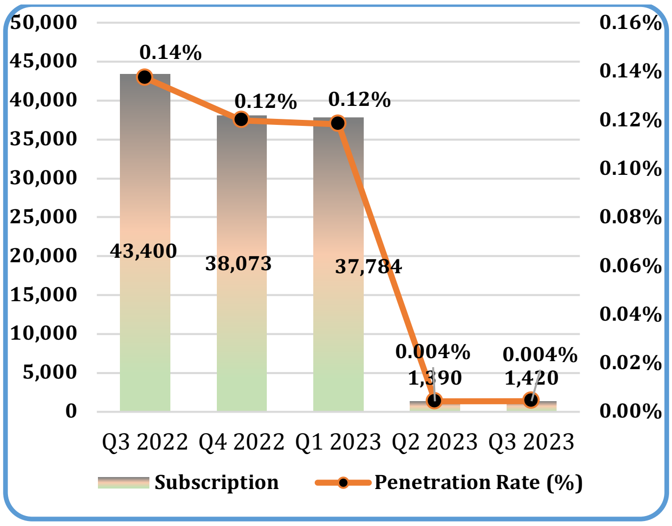


Figure 18: BWA Subscription and Penetration Rate

2.1.1 Subscriptions per Broadband Wireless Access (BWA) Operator

Telesol is the only Broadband Wireless Access Operator that provided data during the quarter under review.

Telesol ended the quarter with a subscription of 1,420 and a market share of 100.00%. (Figure 19) (Appendix, Table 16).

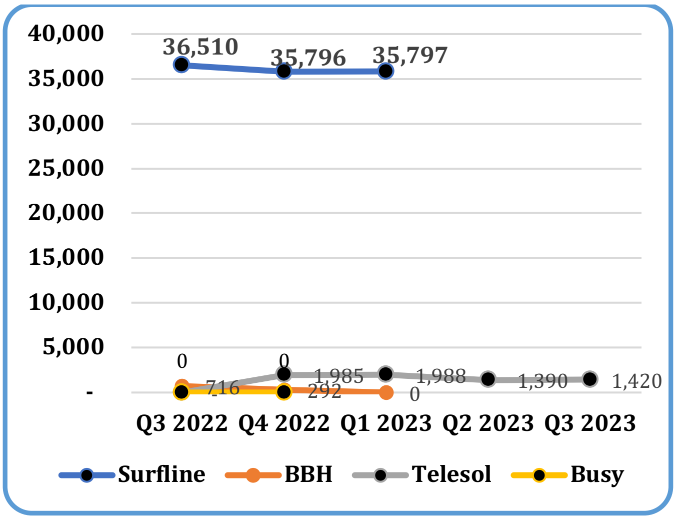


Figure 19: Subscriptions per Broadband Wireless Access (BWA) Operator

2.2 Broadband Wireless Access (BWA) Volume of Internet Traffic

The total volume of internet traffic generated by the BWAs decreased from 0.273 billion megabytes at the end of Q2 2023 to 0.265 billion megabytes at the end of Q3 2023, indicating a decline in growth by 2.99%.

Year-on-year internet traffic generated by the BWAs decreased from 6.539 billion megabytes at the end of Q3 2022 to 0.273 billion megabytes at the end of Q3 2023, representing a decline in growth by 95.94%.

(Figure 20) (Appendix A, Table 17).

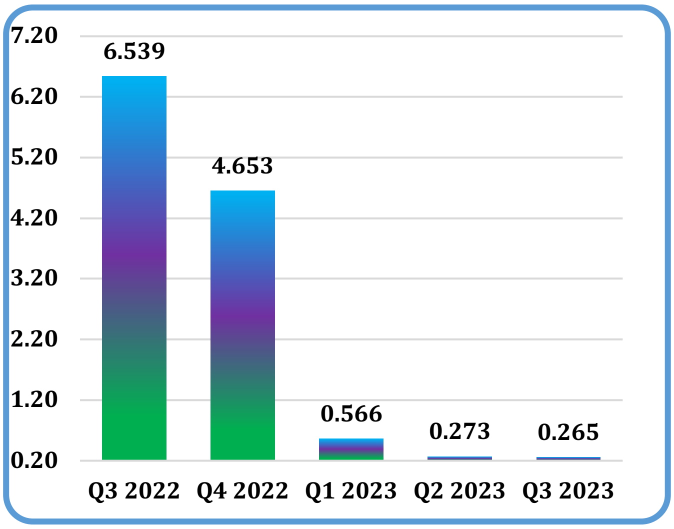


Figure 20: BWA Internet Traffic in Billions of Megabytes (MB)

2.2.1 Volume of BWA Traffic per Operator

Telesol is the only Broadband Wireless Access Operator that provided data during the quarter under review.

Telesol's total volume of internet traffic for the quarter under review was 0.265 billion MB with a market share of 100.00%.

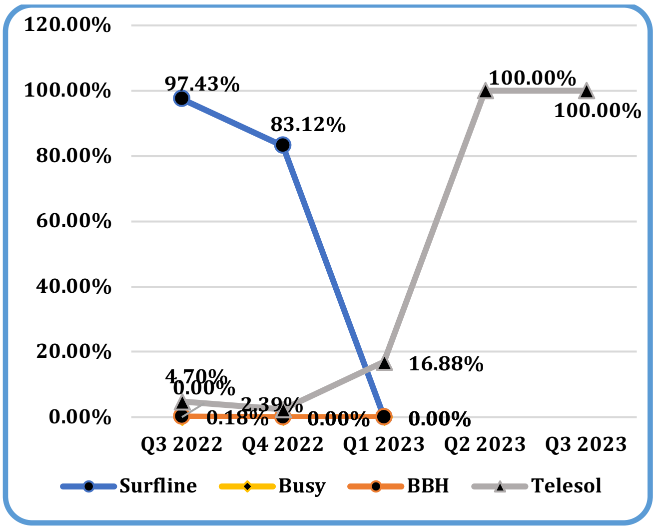


Figure 21: BWA Traffic Market Share per Operator (MB)

2.2.2 Internet Usage per BWA Subscription[7]

Internet usage per BWA subscription increased from 16.62 thousand megabytes in Q2 2023 to 18.78 thousand megabytes in Q3 2023.

Year-on-year internet usage per subscription also increased from 14.07thousand megabytes in Q3 2022 to 18.78 thousand megabytes at the end of Q3 2023 (Figure 22) (Appendix, Table 18).

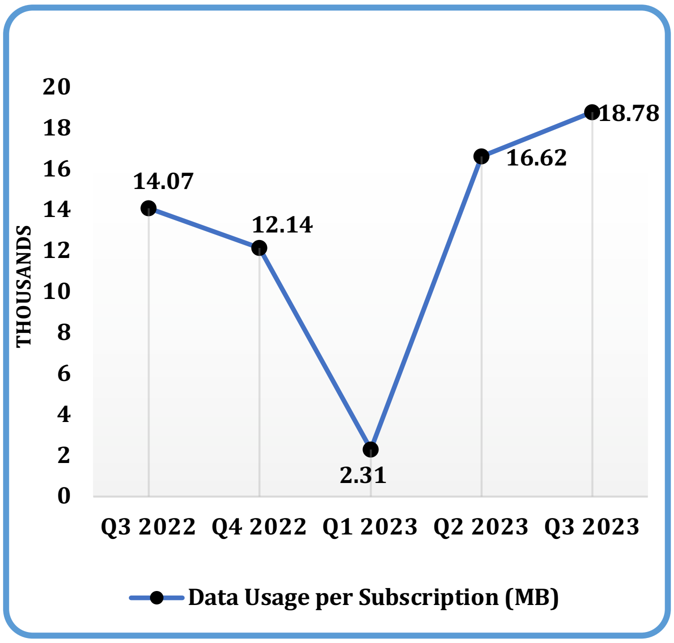


Figure 22: Average Internet Usage per BWA Subscription

7BWA data per subscriptions is calculated by dividing the total 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, AT and MTN have been licensed by the NCA to provide this service.

3.1 Fixed Voice Subscriptions and Penetration Rate

Total number of fixed line subscriptions decreased from 333,426 in Q2 2023 to 320,093 at the end of Q3 2023. This shows a penetration rate of 0.99% and a negative growth rate of 4.00%

Year-on-year subscription decreased from 325,059 in Q3 2022 to 320,093 at the end of Q3 2023, representing a negative growth rate of 1.53% (Figure 23) (Appendix, Table 19).

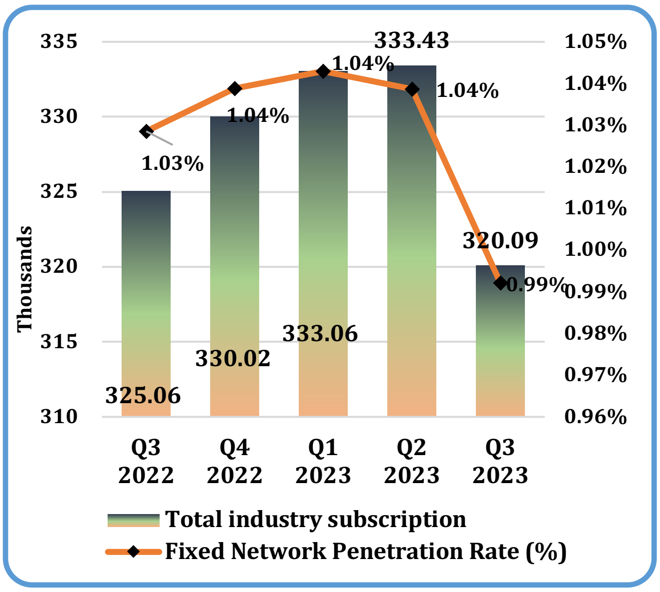


Figure 23: Fixed Network Voice Subscription and Penetration Rate

3.2 Fixed Voice Traffic

Total fixed voice traffic decreased by 3.07% from 8.24 million minutes in Q2 2023 to 7.98 million minutes in Q3 2023.

Year-on-year total fixed voice traffic also decreased by 11.60%, from 9.03 million minutes in Q3 2022 to 7.98 million minutes in Q3 2023. (Figure 24) (Appendix, Table 20).

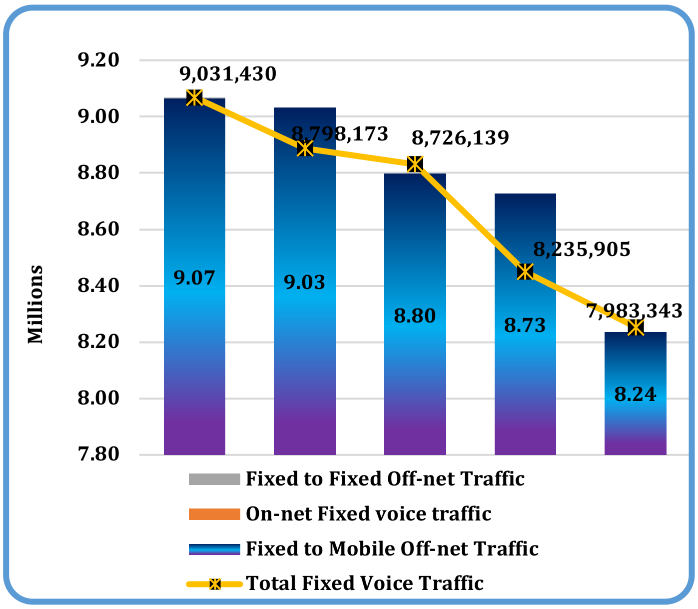


Figure 24: Total Fixed Voice Traffic

3.3 Fixed Voice Minute of Use[8]

Fixed voice traffic per subscription decreased by 0.09% from 24.74 minutes in Q2 2023 to 24.72 minutes at the end of Q3 2023.

Year-on-year minutes of use per subscription decreased by 14.11% from 28.77 minutes in Q3 2022 to 24.72 minutes at the end of Q3 2023 (Figure 25) (Appendix A, Table 21).

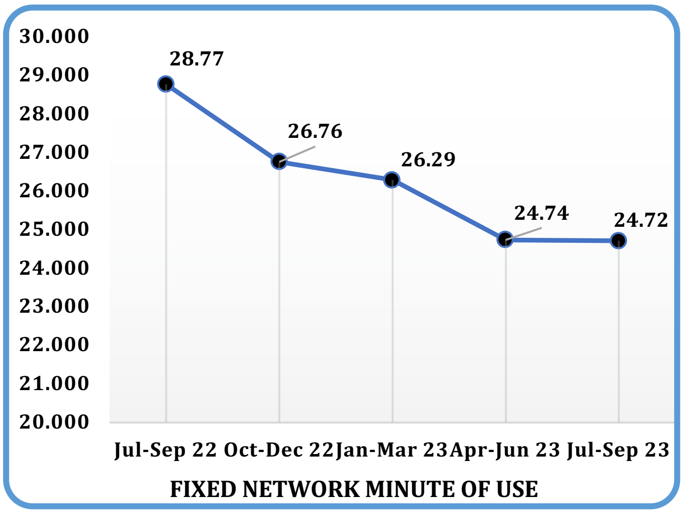


Figure 25: Fixed Network Minute of Use

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

3.4 Fixed Data Subscriptions and Penetration Rate

Fixed data subscriptions went up from 110,723 in the previous quarter to 113,637 in the quarter under review, which represents a growth rate of 2.63%.

Year-on-year fixed data subscriptions increased from 98,594 in the preceding year to 113,637 at the end of Q3 2023 representing a growth rate of 15.26%.

Fixed data penetration rate at the end of Q3 2023 was 0.35%. (Figure 26) (Appendix, Table 22).

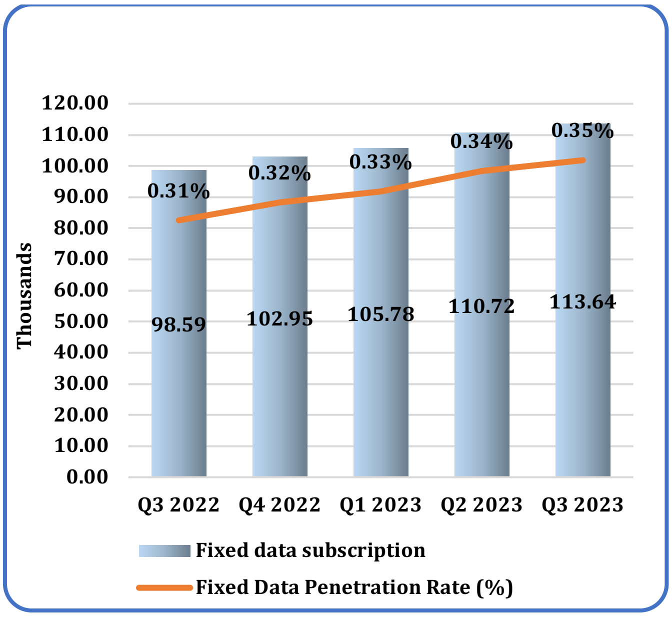


Figure 26: Fixed Data Subscriptions and Penetration

3.5 Fixed Data Subscriptions per Fixed Network Operator

Vodafone's subscriptions at the end of Q3 2023 was 79,057 representing 69.57% of the market share as against 78,170 in Q2 2023.

MTN's subscriptions at the end of Q3 2023 was 33,665 representing 29.63% of the market share as compared to 32,123 in Q2 2023.

AT recorded 915 subscriptions at the end of Q3 2023 with a market share of 0.81% as compared to 430 in the previous quarter. (Figure 27) (Appendix, Table 23).

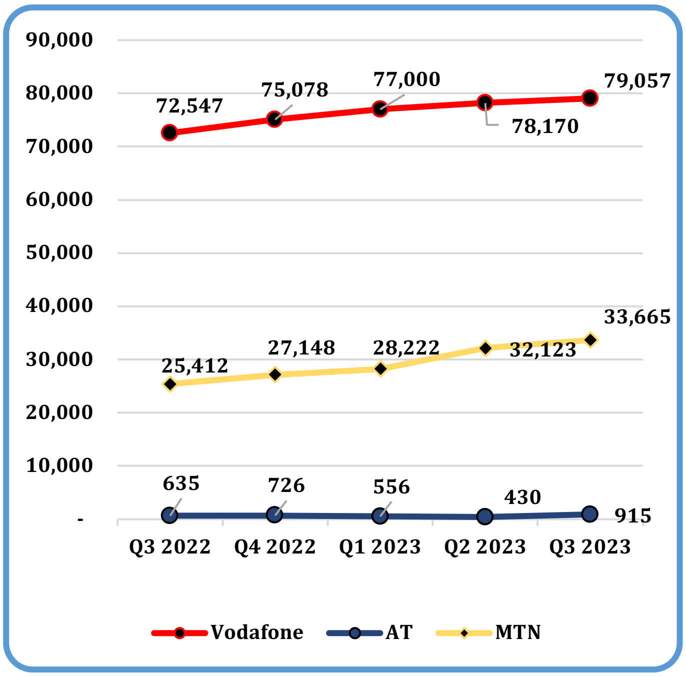


Figure 27: Fixed Data Subscription per Operator

4.0 BROADCASTING

4.1 Authorised Frequency Modulation (FM) Radio Stations

The total number of authorised FM stations in Ghana as at the end of Q3 2023 was 737 with 544 in operation as at the end of Q3 2023.

The Ashanti Region had the highest number of FM stations (110), representing 14.93% of the total number of authorised FM stations in the country. The North East Region had the least number of authorised FM Stations (11), representing 1.49% of the total authorised FM Stations in the country. (Figure 28) (Appendix A, Table 25).

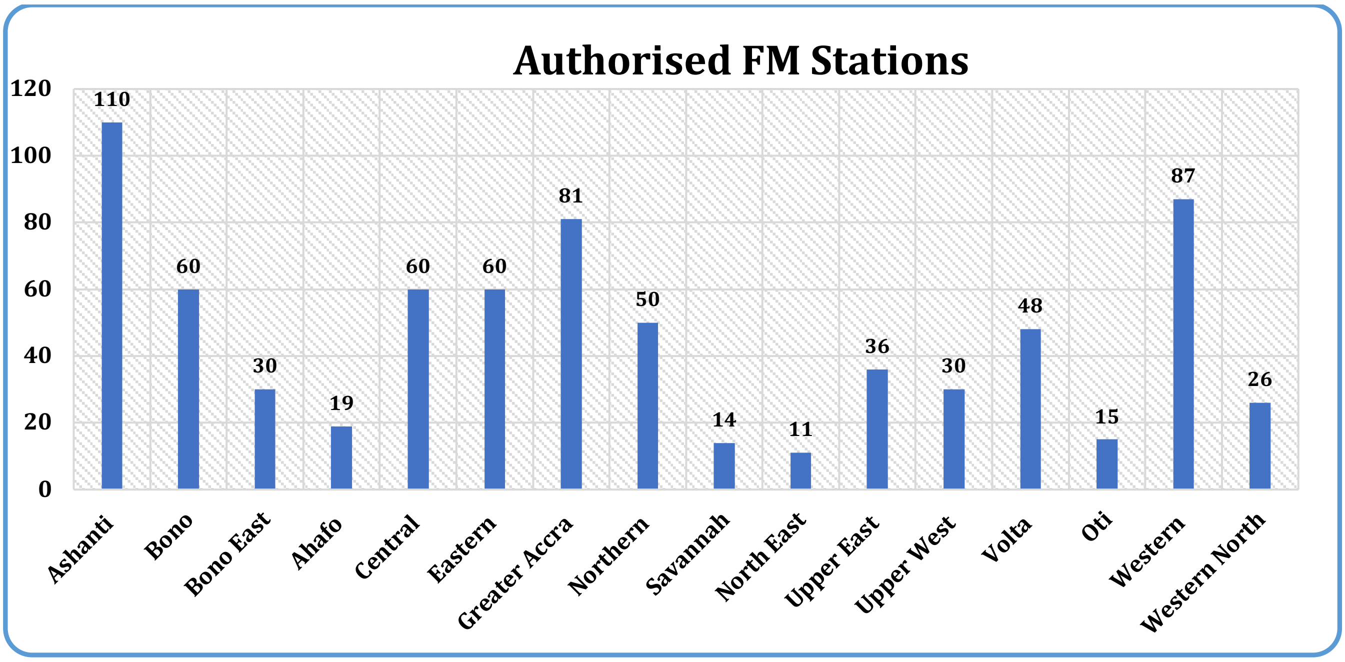


Figure 28: Regional distribution of authorised FM stations as at end of Q3 2023

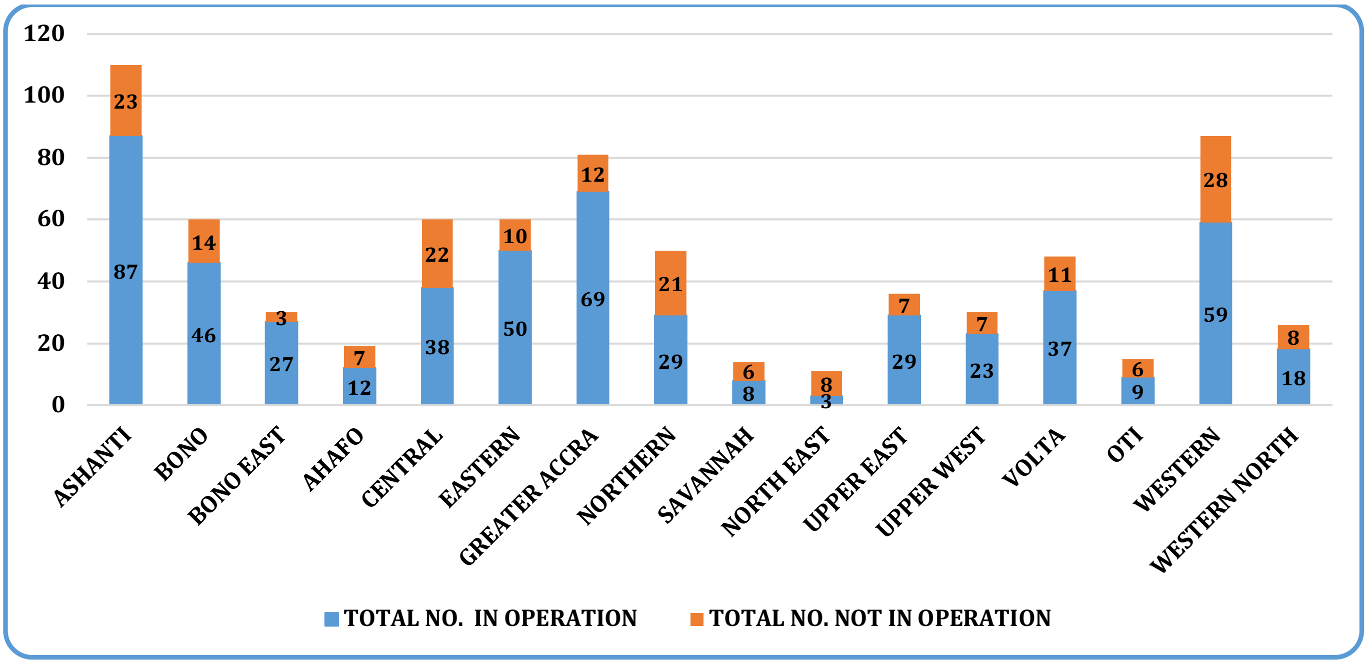


Figure 29: Regional distribution of On-air and Off-air FM stations as at end of Q3 2023

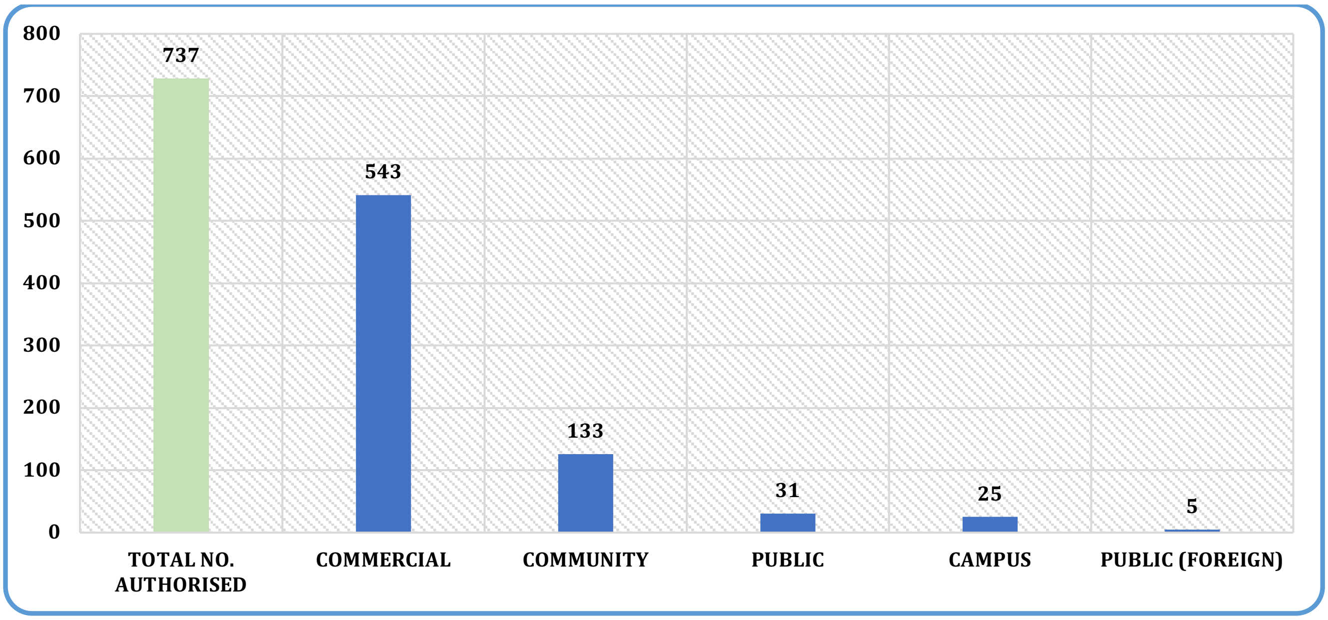


Figure 30: Purpose of Authorised Radio Stations as at Q3 2023

4.2 Authorised Television Stations

The total number of authorised TV stations in Ghana at the end of Q3 2023 was 175 out of which 120 were operational during the quarter under review, representing 68.18% of the total number of authorised TV stations in the country (Figure 32) (Appendix A, Table 26).

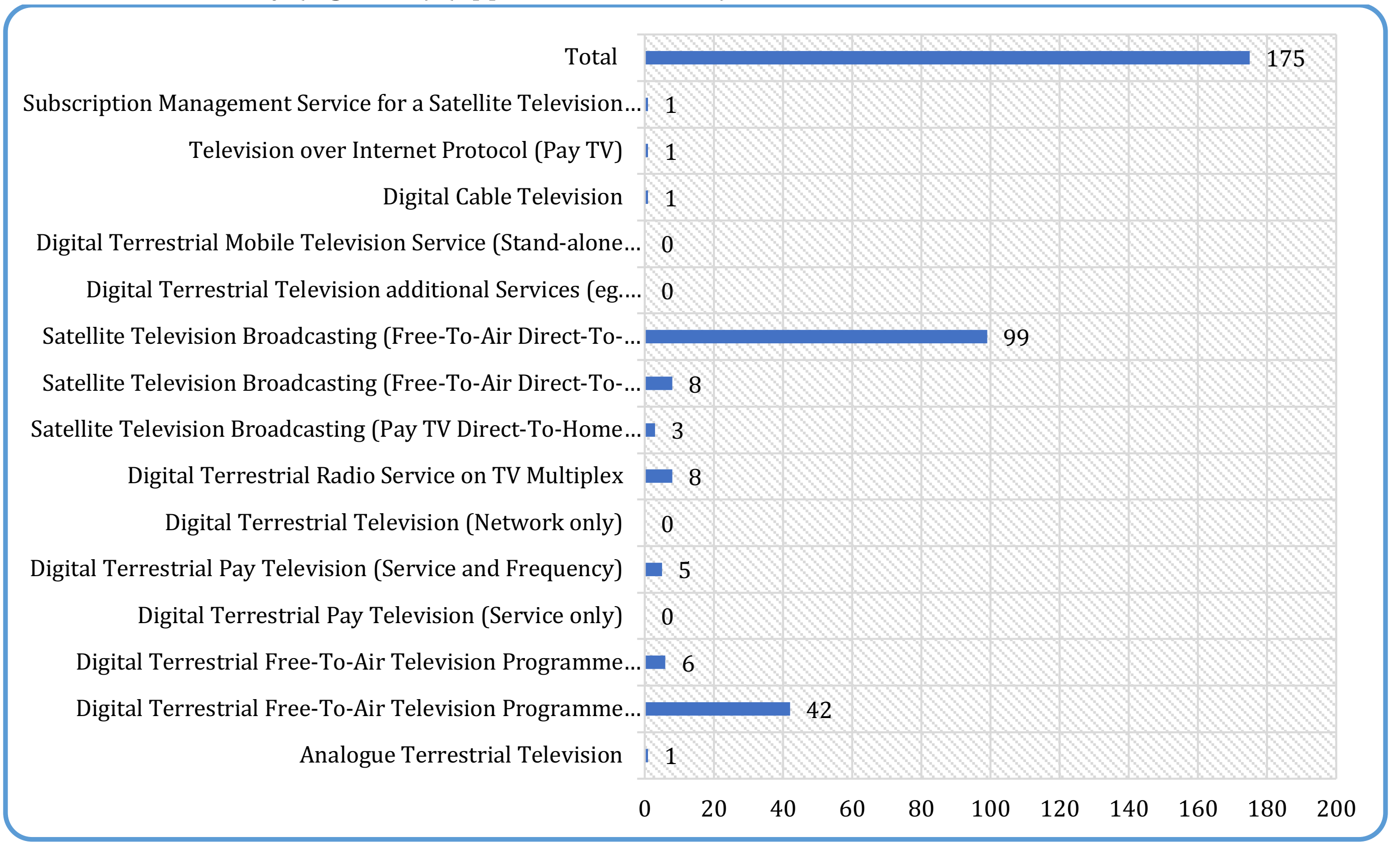


Figure 31: Authorised TV Stations as at Q3 2023

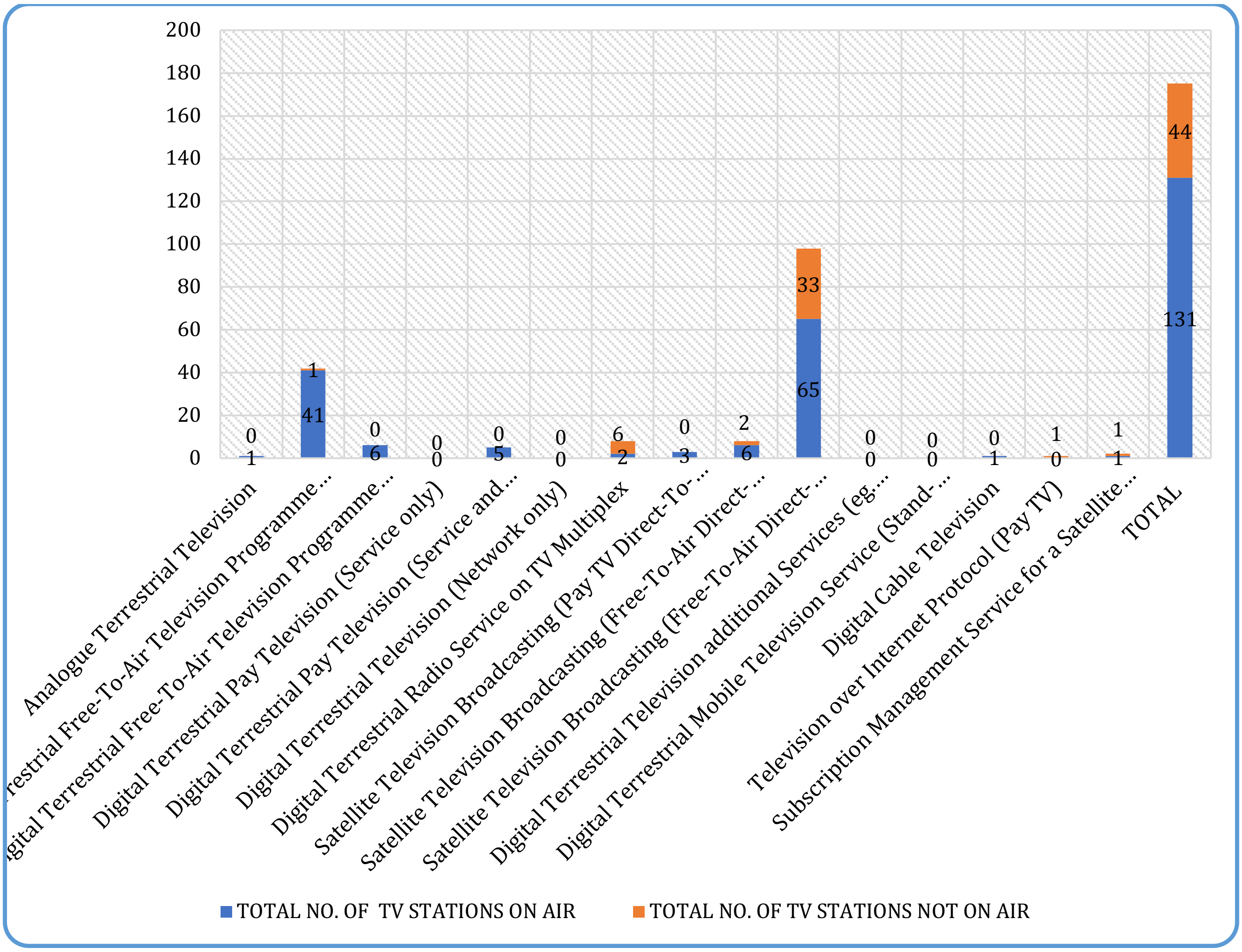


Figure 32: Distribution of Types of TV Services (On-Air and Off-Air TV Stations) as at end of Q3 2023

Appendix A (List of Tables)

Table 1: Mobile Voice Subscriptions and Penetration Rate

Subscription	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Mobile Subscription	40,813,018	40,045,308	38,408,481	34,153,684	32,547,305
Mobile Subscription Growth Rate (%)	-0.43%	-1.88%	-4.09%	-11.08%	-4.70%
Net additions	-175,861	-767,710	-1,636,827	-4,254,797	-1,606,379.00
Population	31,604,308	31,769,363	31,934,420	32,099,477	32,264,534
Penetration Rate (%)	**129.14%**	**126.05%**	**120.27%**	**106.40%**	**100.88%**

Table 2: Mobile Voice Subscriptions and Market Share per Operator

Mobile Network Operator		Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
MTN	Subscriptions	26,689,330	26,613,845	25,625,097	25,164,189	23,345,146
	Market Share (%)	65.39%	66.46%	66.72%	73.68%	71.73%
Vodafone	Subscriptions	7,457,708	7,537,400	7,080,107	6,193,870	6,327,342
	Market Share (%)	18.27%	18.82%	18.43%	18.14%	19.44%
AT	Subscriptions	6,312,864	5,585,510	5,703,277	2,795,625	2,874,817
	Market Share (%)	15.47%	13.95%	14.85%	8.19%	8.83%
Glo	Subscriptions	353,116	308,553	-	-	-
	Market Share (%)	0.87%	0.77%	-	-	-
Total Industry Subscription		**40,813,018**	**40,045,308**	**38,408,481**	**34,153,684**	**32,547,305**

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

Subscription	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Prepaid	40,377,746	39,617,681	37,933,736	33,667,743	32,059,243
Market Share	98.93%	98.93%	98.76%	98.58%	98.50%
Post-paid	435,272	427,627	474,745	485,941	488,062
Market Share	1.07%	1.07%	1.24%	1.42%	1.50%
Total mobile subscription	**40,813,018**	**40,045,308**	**38,408,481**	**34,153,684**	**32,547,305**

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

Breakdown of Off-Net Traffic	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Traffic (Mobile to Mobile)	2,135,102,224	2,019,023,010	2,146,689,405	1,790,607,442	1,993,212,728
Share (%)	99.42%	99.36%	99.44%	99.35%	99.39%
Growth (%)	-1.55%	-5.44%	6.32%	-16.70%	11.31%
Traffic (Mobile to Fixed)	12,524,403	12,990,823	12,077,085	11,680,545	12,160,587
Share (%)	0.58%	0.64%	0.56%	0.65%	0.61%
Growth (%)	-1.03%	3.72%	-7.03%	-3.28%	4.11%
Total Off-Net Traffic	**2,147,626,627**	**2,032,013,833**	**2,158,766,489**	**1,802,287,986**	**2,005,373,315**

Table 5: Total Domestic Mobile Voice Traffic in Minutes

Traffic	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Traffic (Off-Net)	2,147,626,627	2,032,013,833	2,158,766,489	1,802,287,986	2,005,373,315
Share (%)	8.20%	8.51%	8.84%	7.65%	8.09%
Growth (%)	-2.55%	-5.38%	6.24%	-16.15%	11.27%
Traffic (On-Net)	24,043,275,209	21,841,970,013	22,270,082,599	21,758,954,499	22,788,636,170
Share (%)	91.80%	91.49%	91.16%	92.35%	91.91%
Growth (%)	-0.71%	-9.16%	1.96%	-2.30%	4.73%
Total traffic	**26,190,901,386**	**23,873,983,846**	**24,428,849,088**	**23,561,242,485**	**24,794,009,485**

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

Traffic	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Total mobile voice traffic	26,190,901,386	23,873,983,846	24,428,849,088	23,561,242,485	24,794,009,485
Average Mobile voice subscription	40,775,738	40,427,086	39,005,398	34,427,232	33,043,805
Minutes of Use (MoU) per Subscription	642.32	590.54	626.29	684.38	750.34
MoU growth rate (%)	**-0.12%**	**-8.06%**	**6.05%**	**9.27%**	**9.64%**

Table 7: International Traffic

Traffic	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Incoming International Traffic	64,615,058	61,233,303	51,619,868	50,014,259	51,820,393
Growth (%)	0.50%	-5.23%	-15.70%	-3.11%	3.61%
Outgoing International Traffic	77,253,782	73,877,581	71,482,592	66,131,091	67,111,911
Growth (%)	**-3.18%**	**-4.37%**	**-3.24%**	**-7.49%**	**1.48%**

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

Mobile Operators	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Off-Net					
MTN	78,335,284	92,778,474	105,533,537	122,133,162	148,915,394
Vodafone	93,371,708	117,962,480	108,226,057	155,082,502	141,125,845
AT	9,232,475	11,403,412	11,939,120	11,681,651	10,997,845
Glo	879,715	262,563	-	-	-
Total	**181,819,182**	**222,406,929**	**225,698,714**	**288,897,315**	**301,039,062**
On- net					
MTN	442,680,314	454,222,145	476,222,794	529,070,256	483,733,807
Vodafone	72,975,081	69,500,826	64,166,409	76,241,869	88,086,761
AT	1,425,920	1,714,490	1,450,072	1,815,605	1,279,884
Glo	227,807	68,354	-	-	-
Total	**517,309,122**	**525,505,815**	**541,839,275**	**607,127,730**	**573,100,452**
Total					
MTN	521,015,598	547,000,619	581,756,331	651,203,418	632,649,201
Vodafone	166,346,789	187,463,306	172,392,466	231,324,371	229,212,606
AT	10,658,395	13,117,902	13,389,192	13,497,256	12,277,707
Glo	1,107,522	330,917	-	-	**1**
Total	**699,128,304**	**747,912,744**	**767,537,989**	**896,025,045**	**874,139,514**

Table 9: Average SMS per Subscription

	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Total SMS	699,128,304	747,912,744	767,537,989	896,025,045	874,139,514
Average Mobile Subscription	40,775,738	40,427,086	39,005,398	34,427,232	33,043,805
SMS per Subscription	**17.1**	**18.5**	**19.7**	**26.0**	**26.5**

Table 10: Mobile Data Subscriptions (Prepaid/Postpaid)

Mobile Data Subscriptions		Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Prepaid	Subscription	24,174,770	22,657,917	22,430,107	22,138,314	22,086,945
	Growth Rate	99.21%	99.18%	99.14%	99.09%	99.07%
Post-paid	Subscription	193,192	188,331	194,883	202,700	206,542
	Growth Rate	0.79%	0.82%	0.86%	0.91%	0.93%
Total mobile data subscriptions		**24,367,962**	**22,846,248**	**22,624,990**	**22,341,014**	**22,293,487**

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

	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Total Mobile data usage (MB)	366,524,897,339	403,042,380,881	438,500,459,143	445,300,910,914	479,080,573,930

Table 12: Mobile Internet Usage per Subscription (MB)

	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Total Mobile data usage (MB)	366,524,897,339	403,042,380,881	438,500,459,143	445,300,910,914	479,080,573,930
Average Data Subscription	24,193,140	23,641,217	22,507,381	22,625,759	21,878,245
Data Usage per Subscription (MB)	**15,150**	**17,048**	**19,483**	**19,682**	**21,898**

Table 13: Mobile Data Traffic (MB) per Operator

Mobile Operator	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
MTN	288,793,194,188	326,118,124,526	365,001,280,155	358,375,826,693	384,202,677,398
	78.79%	80.91%	83.24%	80.48%	80.20%
Vodafone	55,623,494,664	57,510,398,564	55,991,841,389	65,598,080,560	73,803964,062
	15.18%	14.27%	12.77%	14.73%	15.41%
AT	16,851,920,062	17,898,494,537	17,507,337,599	21,327,003,662	21,073,932,470
	4.60%	4.44%	3.99%	4.79%	4.40%
Glo	5,256,288,425	1,515,363,255	-	-	-
	1.43%	0.38%	-	-	-
Total Industry Traffic (MB)	**366,524,897,339**	**403,042,380,881**	**438,500,459,143**	**445,300,910,914**	**479,080,573,930**

Table 14: Average Mobile Tariff per Service (GHp)

Tariff	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Average On-Net mobile tariff	0.13	0.12	0.13	0.13	0.13
Average Off-Net mobile tariff	0.13	0.12	0.13	0.13	0.13
Average On-Net SMS tariff	0.06	0.05	0.06	0.06	0.06
Average Off-Net SMS tariff	0.06	0.05	0.06	0.06	0.06
Average data/Mb tariff	0.10	0.10	0.12	0.12	0.12

Table 15: BWA Data Subscriptions and Penetration

	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Subscription	43,400	38,073	37,784	1,390	1,420
Growth rate (%)	-9.55%	-12.27%	-0.76%	-96.32%	2.16%
Net Additions	-4,584	-5,327	-289	-36395	30
Population	31,604,308	31,769,363	31,934,420	32,099,477	32,264,534
Penetration Rate (%)	**0.14%**	**0.12%**	**0.12%**	**0.004%**	**0.004%**

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

BWA Operator	Subscription and Market Share	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Surfline	Subscription	36,510	35,796	35,797	-	-
	Market share (%)	84.12%	94.02%	94.74%	-	-
Busy	Subscription	6,174	-	-	-	-
	Market share (%)	14.23%	-	-	-	-
Telesol	Subscription	-	1,985	1,988	1,390	1,420
	Market share (%)	-	5.21%	5.26%	100.00%	100.00%
BBH	Subscription	716	292	-	-	-
	Market share (%)	1.65%	0.77%	-	-	-
Industry Total		**43,400**	**38,073**	**37,785**	**1,390**	**1,420**

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

BWA Operator		Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Surfline	Data usage (MB)	5,032,423,490	4,533,551,472	470,238,060	-	-
	Market share (%)	76.96%	97.43%	83.12%	-	-
Busy	Data usage (MB)	1,178,623,480	-	-	-	-
	Market share (%)	18.02%	-	-	-	-
BBH	Data usage (MB)	20,805,337	8,242,456	-	-	-
	Market share (%)	0.32%	0.18%	-	-	-
Telesol	Data usage (MB)	307,328,919	111,372,030	95,465,980	278,627,810	265,489,254
	Market share (%)	4.70%	2.39%	16.88%	100.00%	100.00%
Industry Total (MB)		**6,539,181,227**	**4,653,165,958**	**565,704,040**	**273,627,810**	**265,489,254**

Table 18: Internet Usage per BWA Subscriptions (MB)

	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Total Volume of	6,539,181,227	4,653,165,958	565,704,040	273,627,810	265,489,254
Average BWA	46,470	38,325	24,527	1,647	1,413
Data Usage per BWA Subscriptions (MB)	**140,719**	**121,413.33**	**23,065**	**166,164**	**187,846**

Table 19: Fixed Network Voice Subscriptions and penetration

Fixed Operator	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Vodafone	321,260	326,579	329,068	331,080	317,757
	98.83%	98.96%	98.80%	99.30%	99.27%
AT	2,658	2,247	2,698	1,092	1065
	0.82%	0.68%	0.81%	0.33%	0.33%
MTN	1,141	1,190	1,291	1,254	1,271
	0.35%	0.36%	0.39%	0.38%	0.40%
Total industry subscription	325,059	330,016	333,057	333,426	320,093
Population	31,604,308	31,769,363	31,934,420	32,099,477	32,264,534
Fixed Network Penetration Rate (%)	**1.03%**	**1.04%**	**1.04%**	**1.04%**	**0.99%**

Table 20: Fixed Network Volume of Traffic in Minutes

Traffic	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
On-Net Fixed voice traffic	-	-	-	-	
Off-Net fixed voice traffic	9,031,430	8,798,173	8,726,139	8,235,905	7,983,343
Total Fixed Voice Traffic	**9,031,430**	**8,798,173**	**8,726,139**	**8,235,905**	**7,983,343**

Table 21: Fixed Network Minute of Use per Subscriptions

Fixed Network (MoU)	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Total Fixed Voice Traffic	9,031,430	8,798,173	8,726,139	8,235,905	7,983,343
Average Fixed Subscription	313,878	328,773	331,923	332,948	323,018
Minutes of Use per Subscription (MoU)	28.774	26.761	26.290	24.736	24.715
Growth Rate	**-1.82%**	**-7.00%**	**-1.76%**	**-5.91%**	**-0.09%**

Table 22: Fixed Data Subscriptions and Penetration

Fixed network	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
Vodafone	72,547	75,078	77,000	78,170	79,057
	73.58%	72.93%	72.79%	72.07%	69.57%
Airtel	635	726	556	430	915
	0.64%	0.71%	0.53%	0.40%	0.81%
MTN	25,412	27,148	28,222	32,123	33,665
	25.77%	26.37%	26.68%	29.01%	29.63%
Total fixed data	98,594	102,952	105,778	110,723	113,637
Population	31,604,308	31,769,363	31,934,420	32,099,477	32,264,534
Fixed Data Penetration	**0.31%**	**0.32%**	**0.33%**	**0.34%**	**0.35%**

Table 23: Regional Distribution of FM Stations by Purpose as at the end of Q3 2023

Name of Regions	Public	Public (Foreign)	Community	Campus	Commercial
Ashanti	2	1	19	5	83
Bono	1	0	6	3	50
Bono East	2	0	4	0	24
Ahafo	0	0	3	0	16
Central	2	0	15	3	40
Eastern	2	0	20	1	37
Greater Accra	2	3	13	4	59
Northern	3	0	10	1	36
Savannah	3	0	4	0	7
North East	1	0	3	0	7
Upper East	2	0	10	3	21
Upper West	2	0	10	2	16
Volta	3	0	5	1	39
Oti	1	0	3	0	11
Western	2	1	8	2	74
Western North	3	0	0	0	23
Total	**31**	**5**	**133**	**25**	**543**

Table 24: Regional Distribution of FM Stations as at the end of Q3 2023

Name Of Regions	Authorised FM Stations	FM Stations In Operation
Ashanti	110	87
Bono	60	46
Bono East	30	27
Ahafo	19	12
Central	60	38
Eastern	60	50
Greater Accra	81	69
Northern	50	29
Savannah	14	8
North East	11	3
Upper East	36	29
Upper West	30	23
Volta	48	37
Oti	15	9
Western	87	59
Western North	26	18
Total	**737**	**544**

Table 25: Authorised TV Stations as at the end of Q2 2023

Type of Television Service	Authorised TV Stations		No. of TV Stations in Operation (Q3 2023)	No. of TV Stations not in Operation (Q3 2023) End of Q3 2023
	End of Q2 2023	End of Q3 2023		
Analogue Terrestrial Television	1	1	1	0
Digital Terrestrial Free-To-Air Television Programme Channel (Nationwide Coverage)	42	42	41	1
Digital Terrestrial Free-To-Air Television Programme Channel (Regional Coverage)	6	6	6	0
Digital Terrestrial Pay Television (Service only)	0	0	0	0
Digital Terrestrial Pay Television (Service and Frequency)	5	5	5	0
Digital Terrestrial Television (Network only)	0	0	0	0
Digital Terrestrial Radio Service on TV Multiplex	8	8	2	6
Satellite Television Broadcasting (Pay TV Direct-To-Home Bouquet)	3	3	3	0
Satellite Television Broadcasting (Free-To-Air Direct-To-Home Bouquet)	8	8	6	2

Satellite Television Broadcasting (Free-To-Air Direct-To-Home Single Channel)	94	99	65	33
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	2	0	2
Subscription Management Service for a Satellite Television Broadcasting (Pay TV Direct-To-Home Bouquet)	1	1	0	1
Total	**170**	**175**	**131**	**44**

Source: NCA, 2023

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

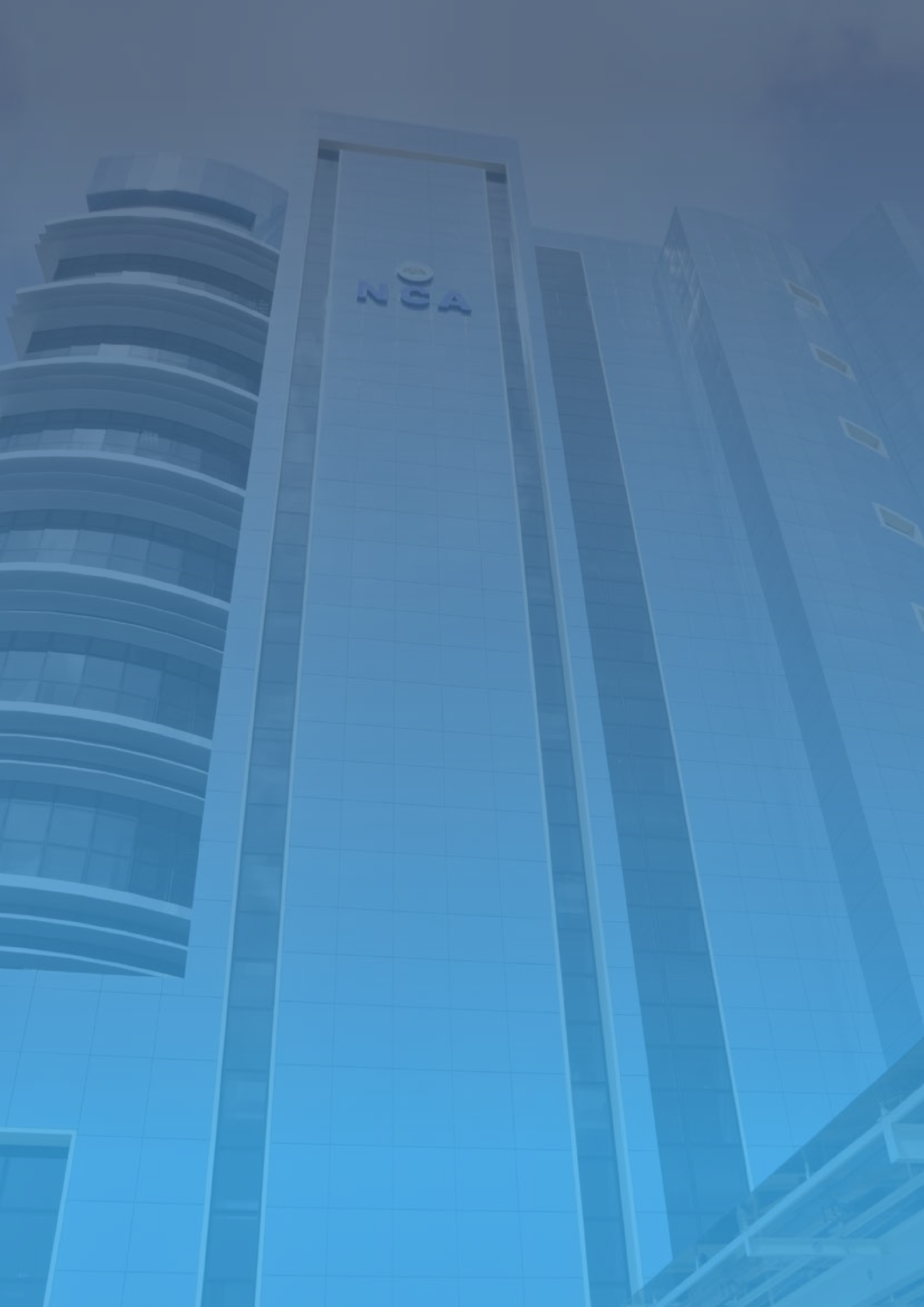
National Communications Authority,
House No 83, North Nkwabeng
P. O. Box SY125, Sunyani, Brong Ahafo Region
Tel: +233 (0) 3520 27564
E-Mail: complaints.sunyani@nca.org.gh

- ### 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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