TELECOMMUNICATIONS QUARTERLY PERFOMANCE REPORT

ECONOMIC REGULATIONS DIRECTORATE

MACRA

MAY, 2022

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LIST OF ACRONYMS

ICTs	Information and Communication Technologies
GDP	Gross Domestic Product
MACRA	Malawi Communications Regulatory Authority
ITU	International Telecommunication Union
PSTN	Public Switched Telephone Network
VoIP	Voice over Internet Protocol
WLL	Wireless Local Loop
ISDN	Integrated Services Digital Network
SMS	Short Message Service
VAS	Value Added Services

1. INTRODUCTION

Information and Communication Technologies (ICTs) are indisputably gaining ground, even in the remotest corners of the country. ICT affects all aspects of life, providing newer, better, and quicker ways for people to interact, network, seek help, gain access to information and learn. Rapid ICT development occurring in Malawi has a huge economic significance contributing around 6.3% in 2021 to the total output (GDP) and growing over the past decade (Annual Economic Report, 2022). The emergency of new technologies and the digital revolution driven by the Fourth Industrial Revolution (4IR) and the digital transformation agenda of the government, is proving to be disruptive and it requires monitoring in order to help track progress and trends in the ICT development.

The Communications Act, under Section 6(2)(I), empowers the Malawi Communications Regulatory Authority (MACRA) to collect and publish information with respect to communication services. In addition, licensees have an obligation to submit information to the Authority that may be required for the purposes of monitoring and enforcing compliance.

In collecting such information, specifically the ICT indicators from licensees, MACRA uses a questionnaire that is designed for specific ICT sub-sectors namely telecommunications, broadcasting and postal. In collecting information from the telecommunications sub-sector, MACRA uses the International Telecommunication Union (ITU) handbook for the collection of aadministrative data as a key reference point in order to have internationally comparable indicators.

This report, therefore, presents an aggregated performance review of the telecommunications service providers for the period from the first quarter (Q1) of 2021 to the first quarter of 2022. The report used information from the following licensed service providers; Airtel Malawi Plc., TNM Plc., MTL, Access Communications Limited, Inq, Afrimax Malawi Limited, SimaNet Malawi and Globe Internet Limited among others and it is covering the following areas:

Mobile network population coverage

Mobile telephone subscriptions

Mobile broadband subscriptions

Network traffic

Subscriber traffic analysis

Revenues

Network infrastructure

2. MOBILE NETWORK POPULATION COVERAGE

The mobile network population coverage for 2G network stands at 86% as of Q1 of 2022 compared to 84% registered in Q1 of 2021. This represents a 3.6% growth in 2G population coverage over the period. The 3G network coverage grew by 2.2% from 83% in Q1 of 2021 to 84% as of Q1 of 2022. The 4G network has grown by 2.44% increasing from 66% in Q1 of 2021 to 69% as of Q1 of 2022.

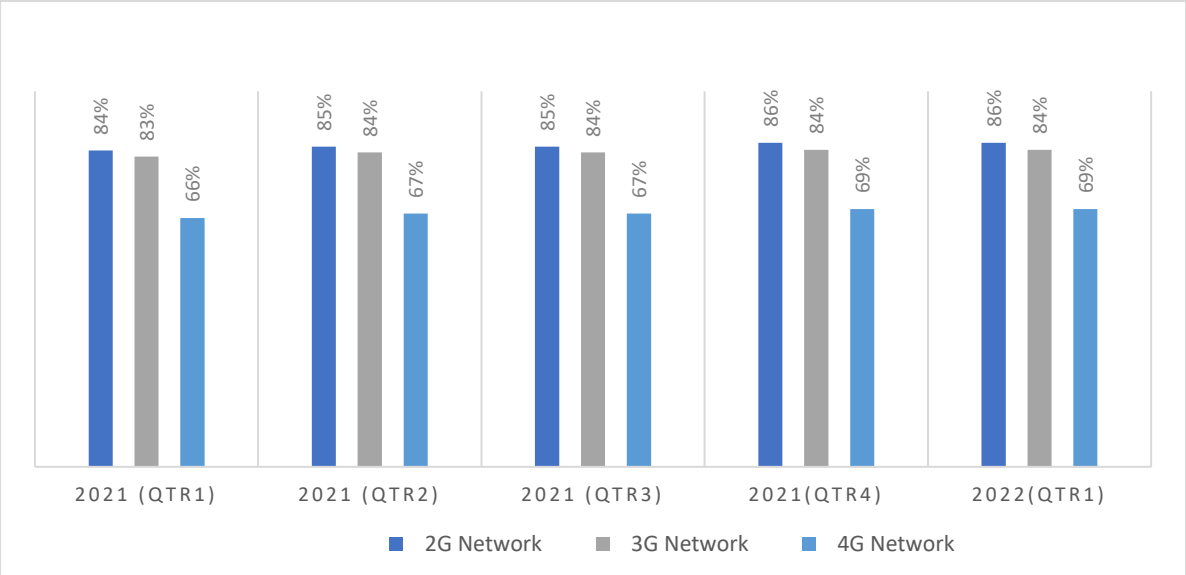

Figure 2.1: Mobile network population coverage

3. MOBILE TELEPHONE SUBSCRIPTIONS

The International Telecommunication Union (ITU) defines mobile telephone subscriptions as the number of subscriptions to a public mobile cellular service which provides access to the Public Switched Telephone Network (PSTN) using cellular technology. It includes the number of post-paid and prepaid subscriptions and includes analogue and digital cellular systems.

3.1. Active Mobile Telephone Subscriptions

The analysis of mobile cellular subscriptions, as shown in Figure 3.1, illustrates that mobile subscriptions grew from 10,395,087 subscriptions in Q1 of 2021 to 11,824,745 subscriptions in the first quarter of 2022, representing a 14% increase. Subscriber numbers grew by 6% from Q1 2021 to Q2 2021, then by 5% into Q3

2021 and they grew by 2% into Q4 2021. The first quarter of 2022 saw a decline in subscribers of 1%.

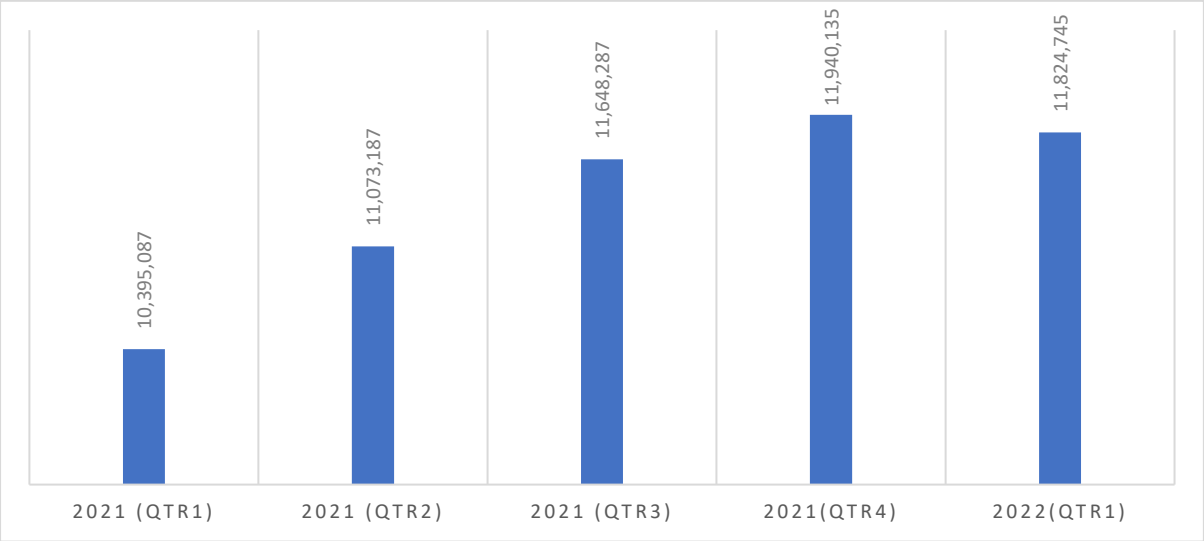

Figure 3.1: Mobile cellular subscriptions

3.2. Mobile Cellular Penetration

Mobile cellular penetration rate grew by 6% in the period under review. As shown in Figure 3.2, mobile penetration increased from 55% in Q1 of 2021, representing the lowest figure in the period, to 59% in Q2 before rising to 62% in the third quarter of 2021. The fourth quarter of 2021 had the highest penetration rate of 63%. However, the penetration rate has decelerated to 61% as of Q1 of 2022 representing a drop of 2% from the fourth quarter of 2021.

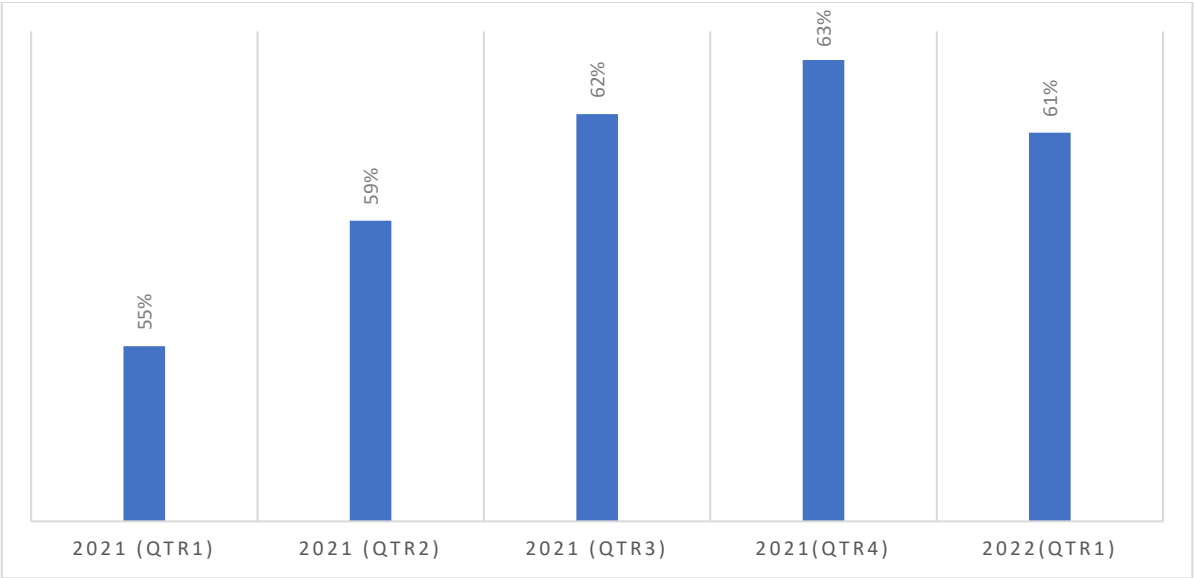

Figure 3.2: Mobile cellular penetration rate

3.3. Prepaid and Post-paid Mobile Subscriptions

Prepaid mobile subscriptions refer to the total number of mobile-cellular telephone subscriptions that use prepaid refills. These are subscriptions where, instead of paying an ongoing monthly fee, users purchase blocks of usage time. On the other hand, post-paid Subscriptions is the number of mobile cellular subscriptions billed towards the end of each month for the mobile services consumed and, in most cases, have a contract with the service provider.

Mobile cellular subscriptions are dominated by prepaid subscriptions than postpaid subscriptions as shown in Figure 3.3. The growth rates for Prepaid and

postpaid mobile cellular subscriptions were 14% and 6% respectively for the period under review.

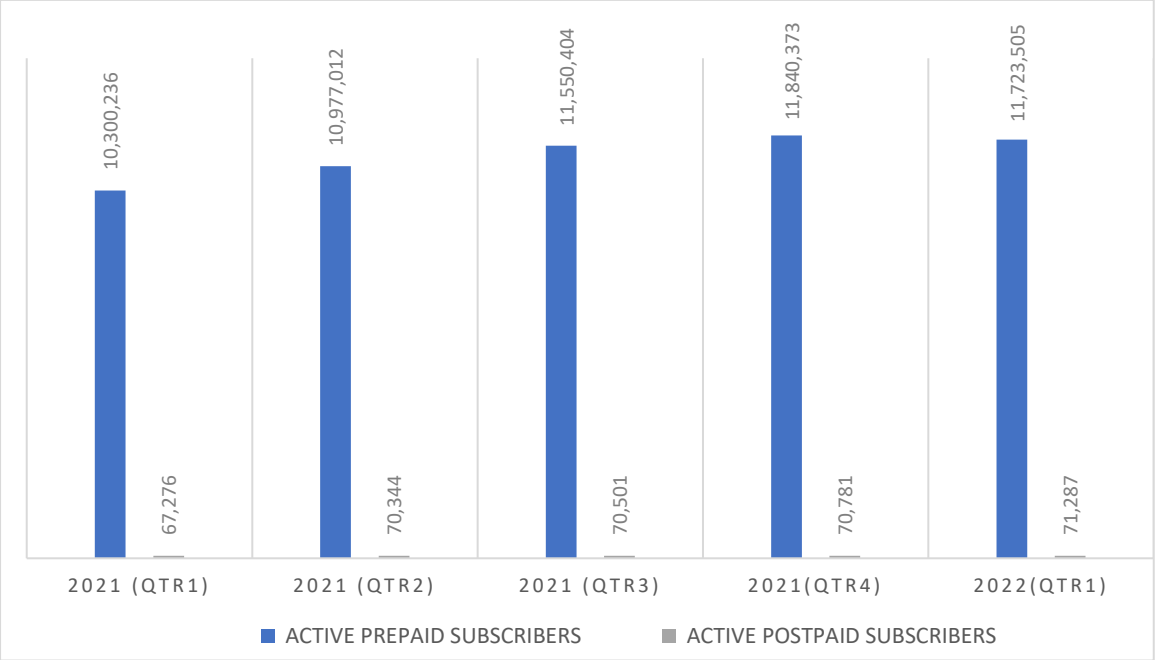

Figure 3.3: Prepaid and Post-paid Mobile subscriptions

4. MOBILE BROADBAND SUBSCRIPTIONS

Mobile broadband subscriptions refer to the sum of active handset-based and computer-based (USB/dongles) mobile-broadband subscriptions to the public Internet. It covers actual subscribers, not potential subscribers, even though the latter may have broadband-enabled handsets.

4.1. Active Broadband Subscriptions

Figure 4.1 shows that the mobile broadband subscriptions for the period under review were increasing at a decreasing rate. Quarter 1 and 2 of the year 2021 had a constant growth rate of 6%. However, the growth rate declined to 3% in Q3 of 2021. The growth rate further declined to 5% as of Q1 of 2022.

Despite the decreasing growth rate, mobile broadband subscriptions grew from 6,797,550 in the first quarter of 2021 to 7,411,719 in the same quarter of 2022. representing a 9% annual growth rate of active mobile broadband subscriptions.

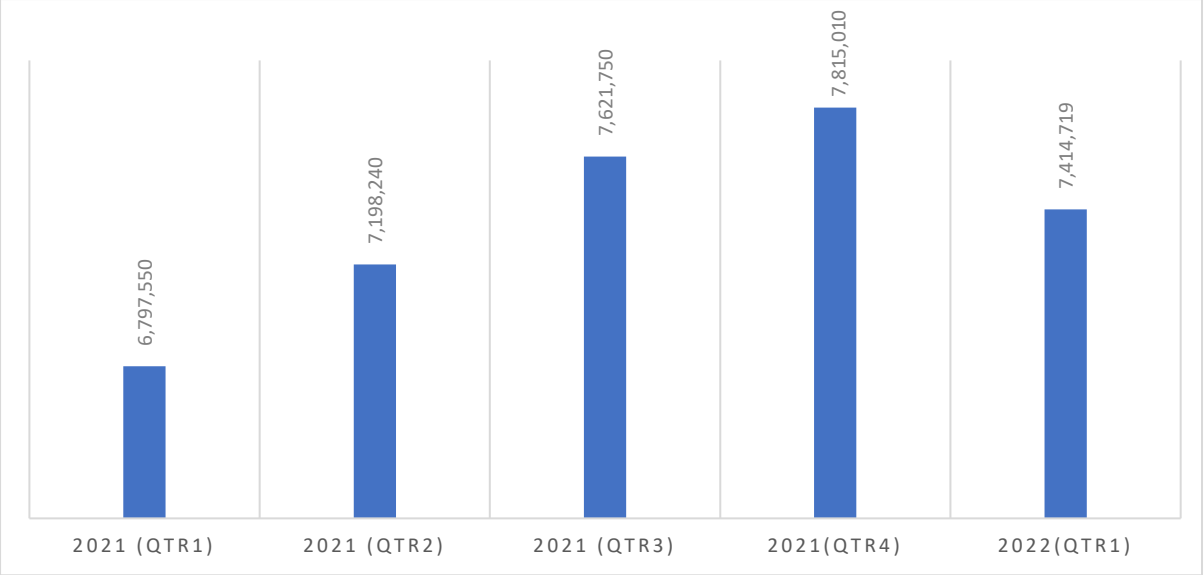

Figure 4.1: Mobile Broadband Subscriptions

4.2. Mobile Broadband Penetration

Mobile broadband penetration refers to the total number of active mobile broadband subscribers divided by the total population. There was a peak in the number of mobile broadband users from Q1 of 2021 as illustrated in figure 4.2. The records show a 2% rise in penetration rate in the year from 36% in Q1 of 2021 to 38% in Q1 of 2022. The second and third quarters of 2021 had 38% and 40% penetration rates respectively. The final quarter of 2021 had the highest number of mobile broadband users as it had a 41% penetration rate. The decline can be attributed to the fact that many people sell their phones around this period of the year, before harvest.

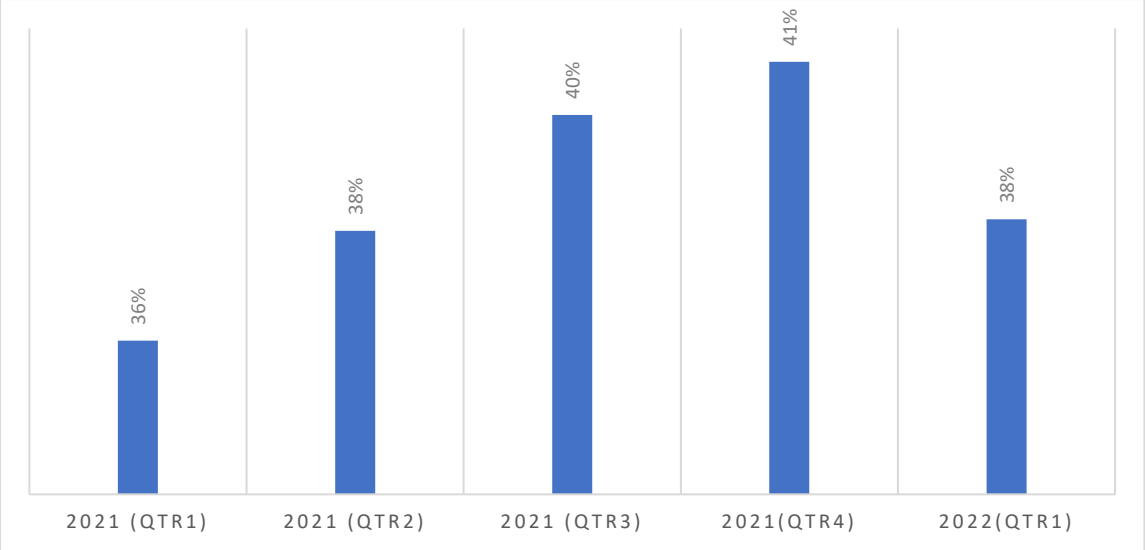

Figure 4.2: Mobile Broadband Penetration

4.3. Comparison of Mobile Cellular Subscriptions and Mobile Broadband Subscriptions Growth Rates.

The trend in growth rates of Mobile cellular subscriptions and Mobile broadband subscriptions were significantly same. Figure 4.3 shows that trend was moving in the same direction with very insignificant margins. The trends translate to the number of subscribers increasing at a decreasing rate. The first quarter of 2021 had both variables growing at 6%, the second quarter had the mobile cellular subscriptions growing at 5% and the latter at 6% (a difference of 1%). The third quarter had mobile subscriptions at a growth rate of 2% and mobile broadband subscriptions at a growth of 3%, again showing an insignificant difference of 1%.

The final quarter of the year 2021 had both variables with negative growth rates. Mobile cellular subscription had –1% growth rate while mobile broadband subscriptions had –5% growth rate in Q4 of 2021.

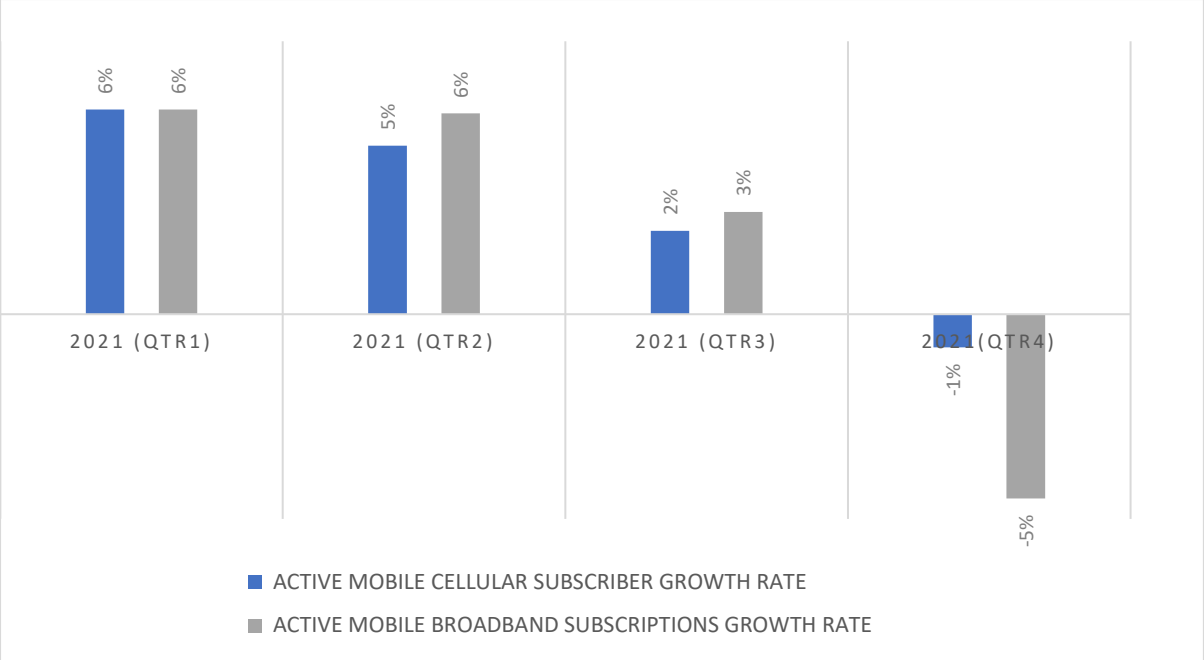

Figure 4.3: Mobile Cellular Subscriptions vs. Mobile Broadband Subscriptions

5. NETWORK TRAFFIC

5.1. Domestic Mobile Telephone Traffic

Domestic mobile-telephone traffic is the total number of minutes of calls made by mobile subscribers within a country. There was a 28% increase in Mobile Telephone traffic as illustrated in figure 5.1 from Q1 of 2021 to Q1 of 2022. The Figure also shows that the growth occurred at a decreasing rate such that: The first quarter of the year under review had a growth rate of 21%, the second and third had 14% and 5% respectively. The final quarter of the year under review had a negative growth rate of 12%.

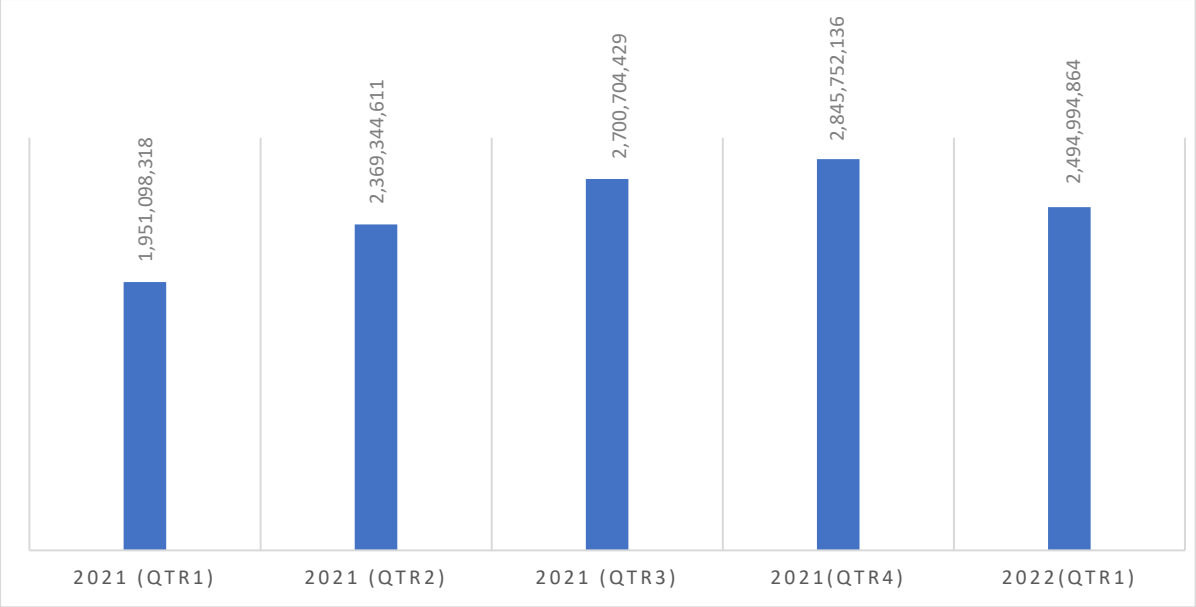

Figure 5.1: Domestic Mobile Telephone Traffic

5.2. On-net and Off-net Domestic Mobile Traffic

Mobile on-net traffic is the total number of minutes of calls that are originating and terminating on the same network i.e., calls from Operator A to Operator A. There was an increase in the number of on-net minutes by 29% in the whole year. Numbers increased by 22% from quarter 1 to quarter 2 of 2021 and a 14% increase from quarter 2 to quarter three of 2021.quarter 4 to quarter 4 of 2021 had a 6% increase and finally, a 6% decrease was realized from the final quarter of 2021 to the first quarter of 2022.

Mobile off-net traffic is the total number of minutes of calls that are originating and terminating to different networks i.e., calls from Operator A to Operator B. From Figure 5.2, minutes increased by 16% from Quarter 1 to Quarter 2 of 2021 and by 19% between Quarter 2 and Quarter 3 of 2021. Mobile off-net traffic declined by 1% into Quarter 4 of 2021 and by 15% into the first quarter of 2022. This shows that the year had a 15% increase in Mobile off-net traffic.

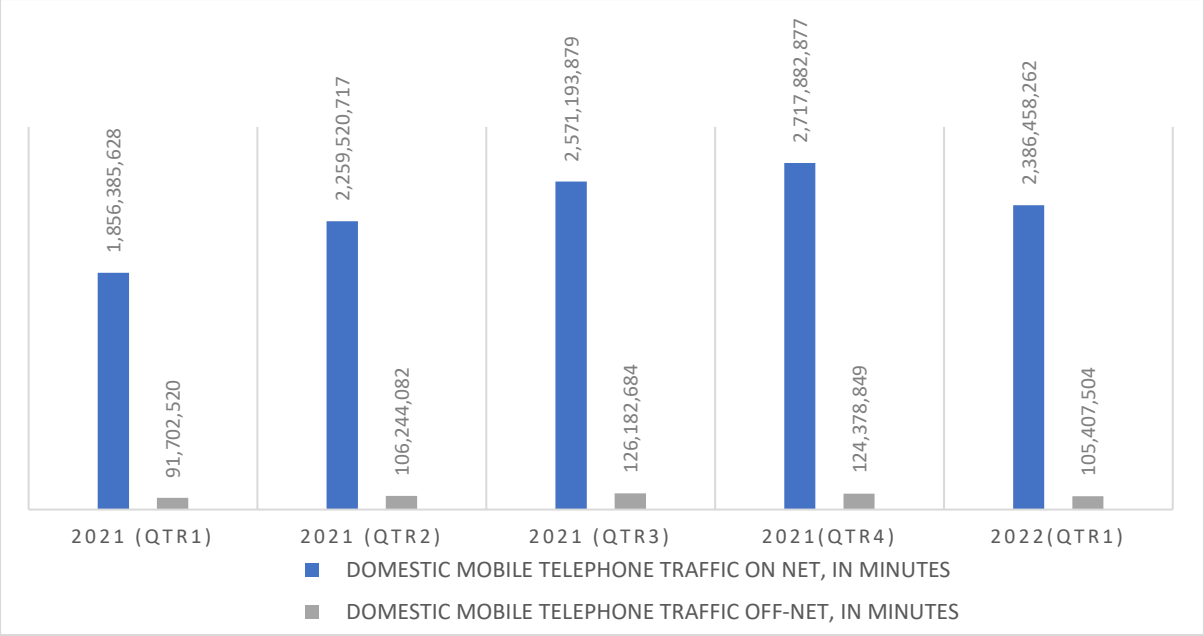

Figure 5.2: On-net and Off-net Domestic Mobile Traffic

5.3. International Mobile Outgoing and Incoming Traffic

Outgoing mobile traffic to international is the number of mobile minutes originating in a country to any destinations outside that country. While incoming international traffic to mobile network refers to the number of incoming minutes (fixed and mobile) received by mobile networks originating in another country. In all Quarters, the number of incoming calls were higher than outgoing calls. Both incoming calls and outgoing calls have a descending trend in the year under review. However, there was a significant difference in the amount of decline between the international outgoing and incoming traffic. The outgoing mobile traffic to international declined by 2% over the year while the incoming international traffic to mobile declined by 18%.

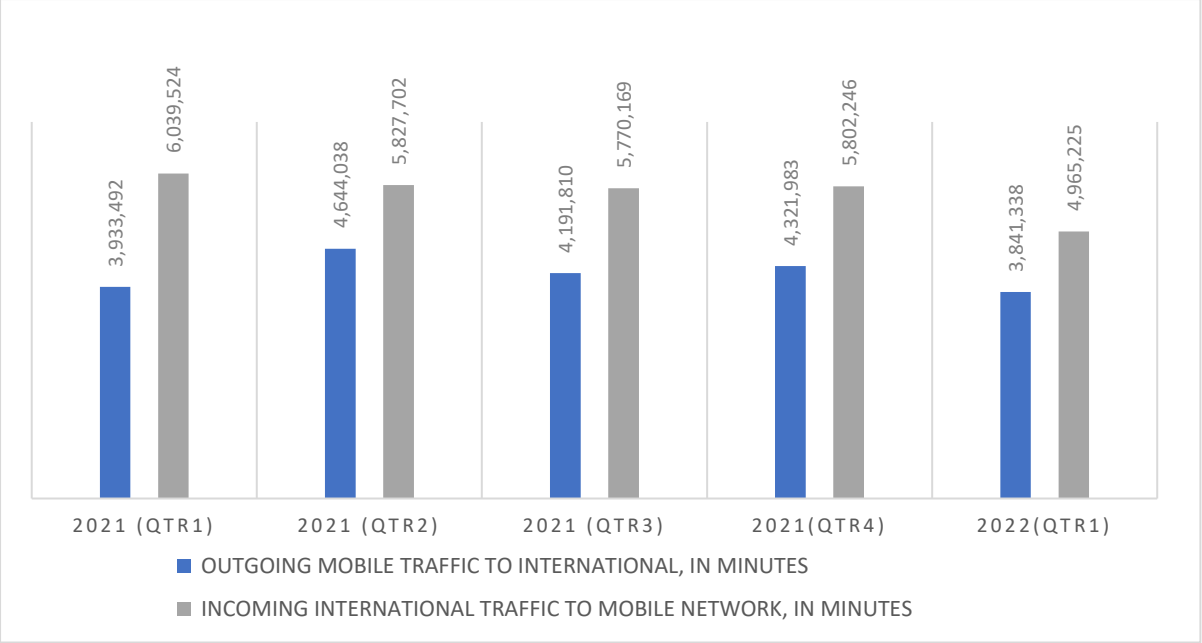

Figure 5.3: International Mobile Outgoing & Incoming Traffic

5.4. Outgoing and Incoming Roaming Traffic

This is defined as using a mobile phone on another operator's network while in another country. Figure 5.4 shows the outgoing roaming traffic significantly remained the same over the course of the year. There was a 1% increase from the first quarter of 2021 to the second quarter, a 2% decrease into the third quarter, a 2% increase into the fourth quarter of 2021 and finally, there was no significant change in outgoing traffic into the first quarter of 2022. All this represents a 1% annual increase only.

The incoming traffic on the other hand had an annual increase of 9%. Traffic increased by 5% into the second quarter of 2021. It then decreased by 5% into the third quarter and increased by 12% into the final quarter of 2021. There was a 3% decline in incoming traffic into the first quarter of 2022.

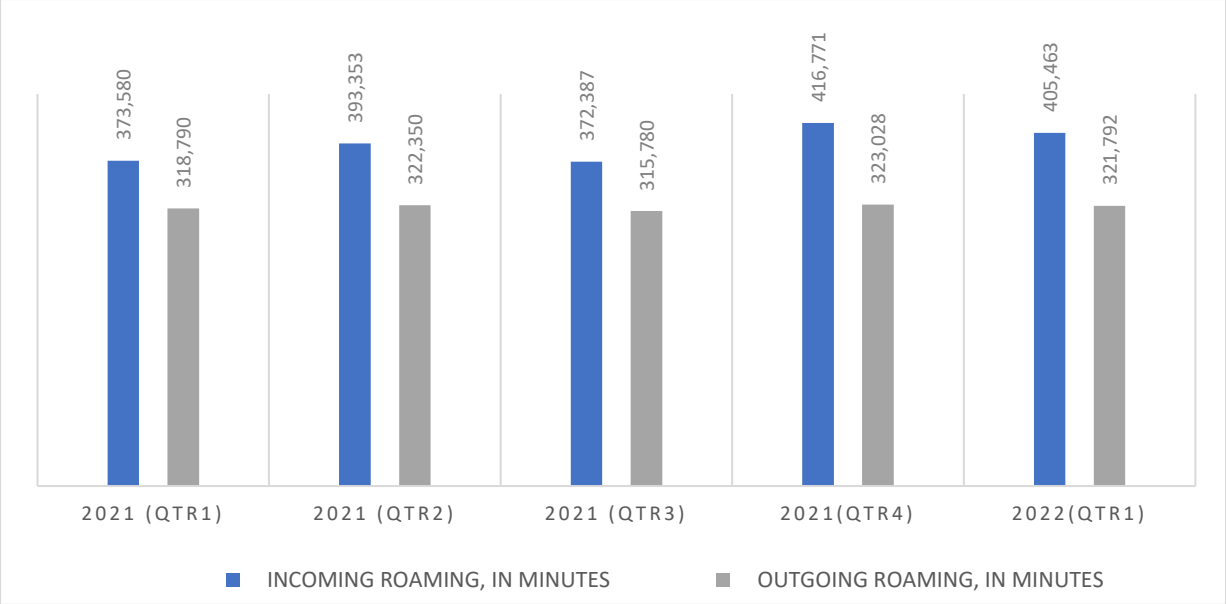

Figure 5.4: Outgoing and Incoming Roaming Traffic

5.5. SMS Traffic

SMS sent refers to the total number of mobile short-message service (SMS) messages sent, to national and/ or international destinations. It excludes messages sent from computers to mobile handsets or to other computers. Figure 5.5 shows an annual upward trend. SMS Traffic doubled over the year evident by the annual growth rate of 203%.

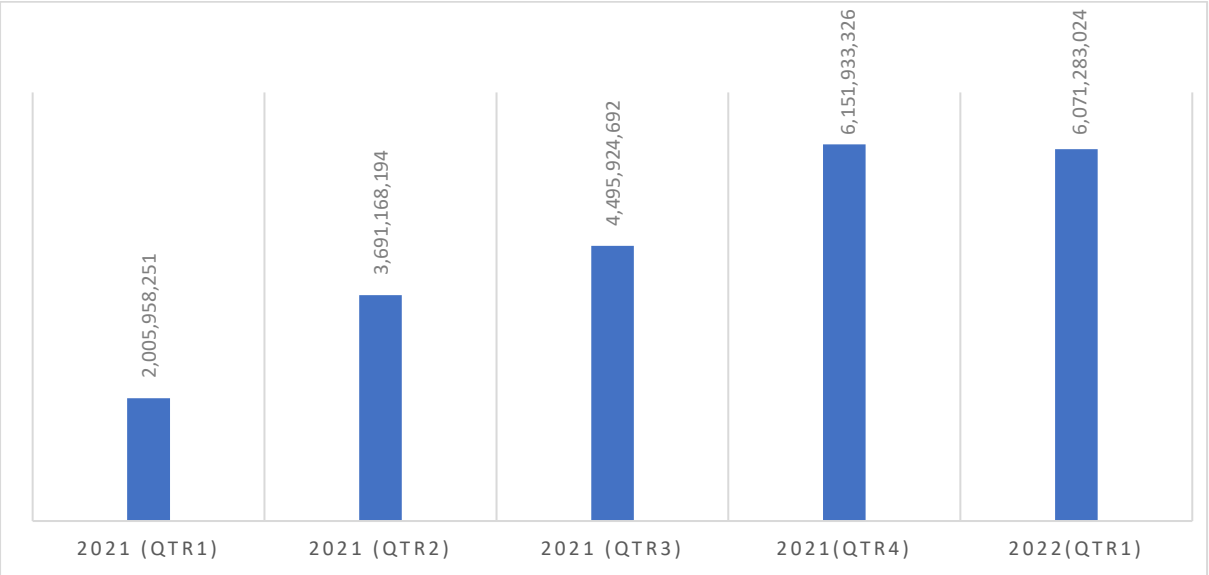

Figure 5.5: SMS Traffic

5.6. Mobile Broadband Traffic

The figure below shows the changes in Mobile Broadband traffic over the year. The growth in Mobile Broadband traffic occurred at a slight increasing rate. Growth into the second quarter of 2021 occurred with 11%. There was 12% increase in traffic into the third quarter and 48% into the fourth quarter of 2021. However, there was a 17% decline into the first quarter of 2022. All this change resulted into a 55% annual growth in the amount of Mobile broadband traffic.

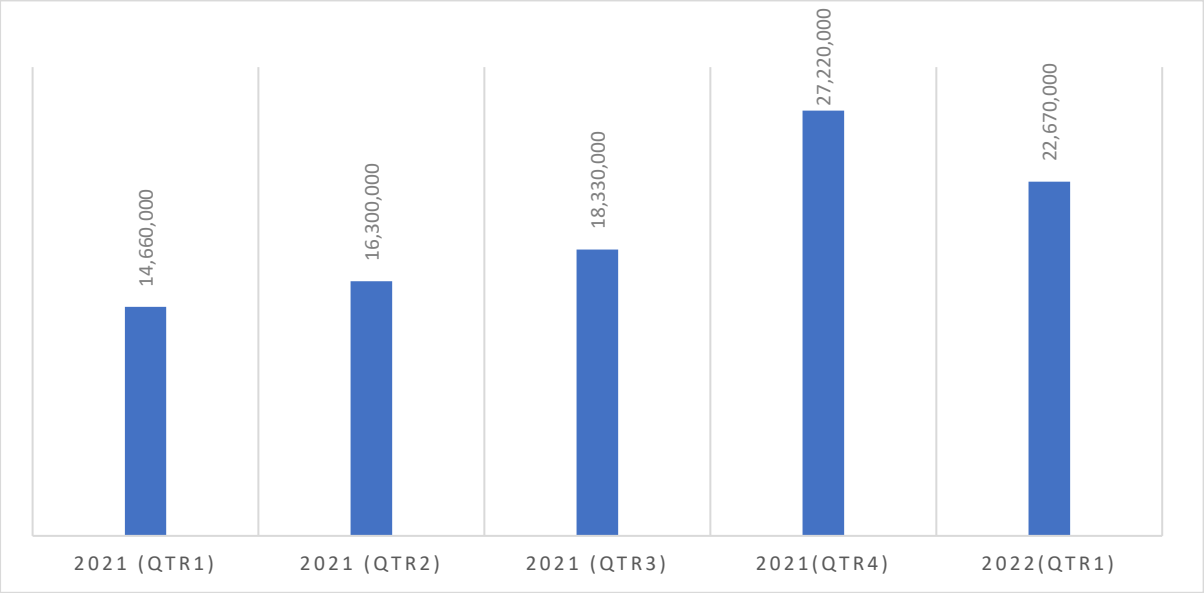

Figure 5.6: Mobile Broadband Traffic

6. SUBSCRIBER TRAFFIC ANALYSIS

6.1. On-net Mobile Telephone Traffic Per User

Figure 6.1 explains the total number of minutes used by an individual per Quarter. Positive annual growth of on-net mobile voice per user traffic of 13% was registered. The total minutes per subscriber increased from 179 in the first quarter of 2021 to 202 in the first quarter of 2022.

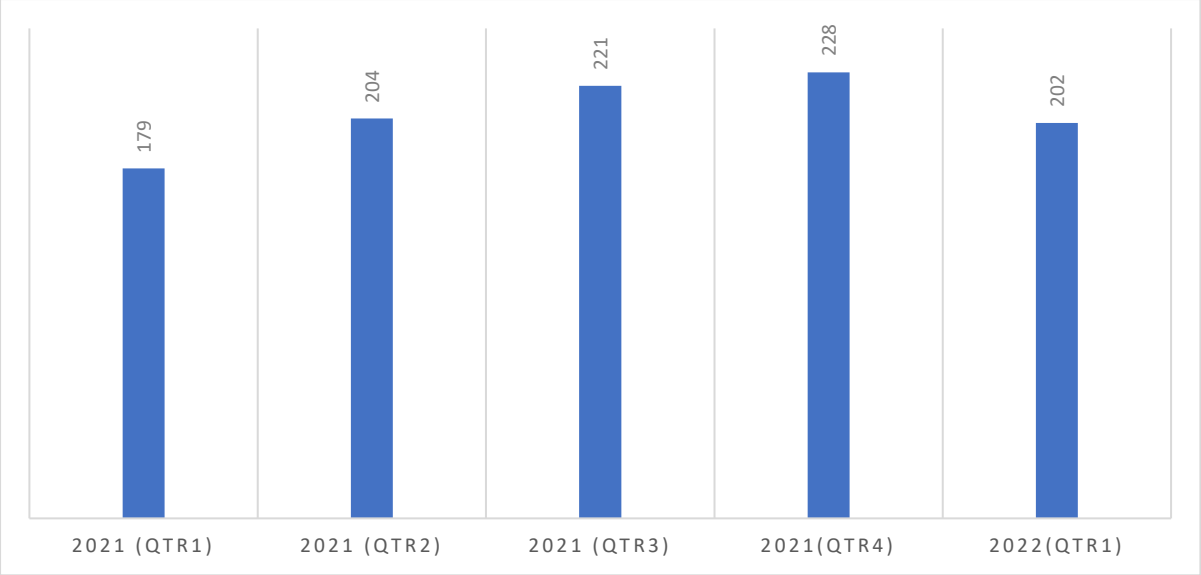

Figure 6.1: On-net Mobile Telephone Traffic Per User

6.2. Off-net Mobile Telephone Per User

Figure 6.2 is an illustration representing an insignificant change in growth of Off-net Mobile Telephone per user. There was an annual increase in the off-net Mobile traffic per user of only 1%.the first quarter of 2021 registered 8.82 total minutes per user and the first quarter of 2022 registered 8.91 minutes per user. The highest record was that of the third quarter of 2021 with 10.83 minutes per user.

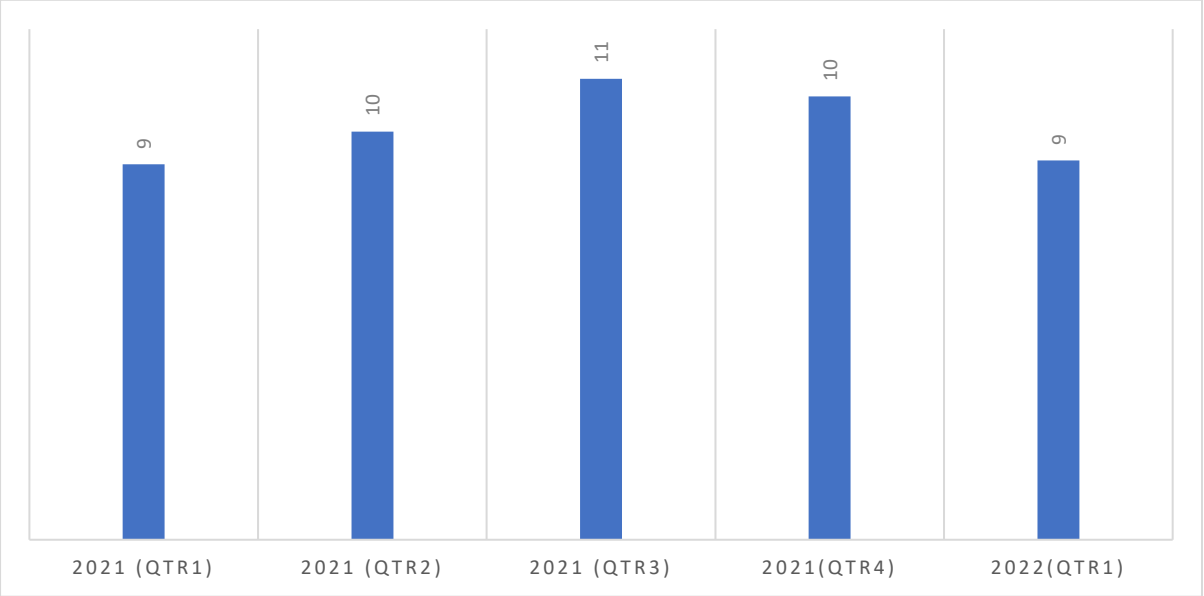

Figure 6.2: Off-net Mobile Telephone Per User

6.3. SMS Sent

As shown by Figure 6.3, the number of SMS sent per user increased to 513 in Quarter 1 of 2022 from 193 in Quarter 1 of 2021. There was a 73% growth from the

first quarter to the second quarter of 2021, a 16% growth from the second quarter to the third quarter of 2021 and a 33% growth from the third to fourth quarter. There was no significant change into the first quarter of 2022. This resulted in a 166% annual increase in the user traffic.

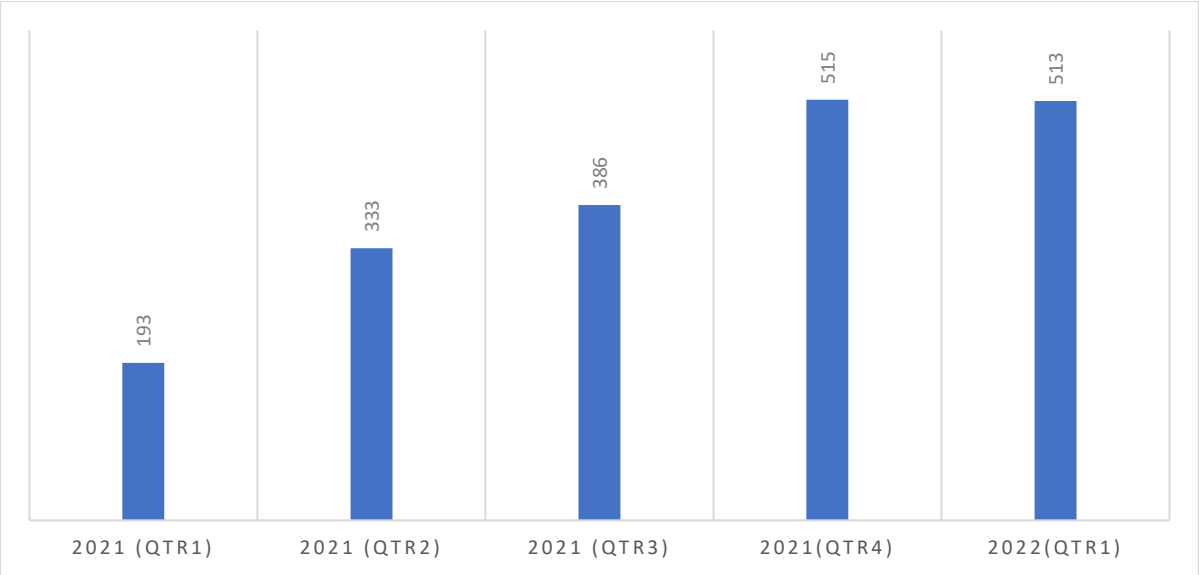

Figure 6.3:1 SMS Sent

6.4. Mobile Broadband Traffic

The mobile broadband to user traffic increased by 5% from Quarter 1 to Quarter 2 of 2021, then by 6% from quarter 2 to quarter 3 of 2021, and by 45% into the final quarter of 2021.there was a 14% decline into the first quarter of 2021 which resulted in an overall annual growth of 42% in the average mobile broadband to user traffic.

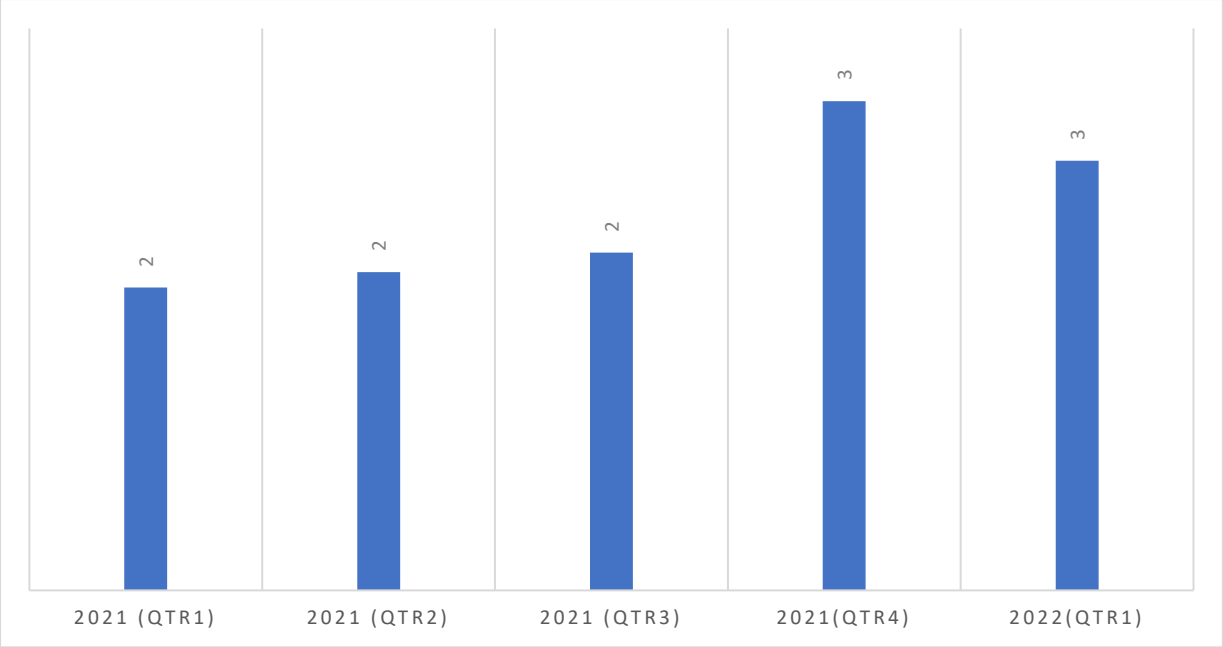

Figure 6.4: Mobile Broadband per User Traffic

7. REVENUE

7.1. Revenue from all Telecommunication Services and Mobile Networks (Voice, Data, SMS)

Revenue from all telecommunication services refers to revenue earned from retail fixed-telephone, mobile-cellular, Internet and data services offered by telecommunication operators (both network and virtual, including resellers) offering services within the country during the financial year under review. It includes retail revenues earned from the transmission of TV signals but excludes revenues from TV content creation.

According to Figure 7.1, operators reported a 9% increase in service revenue from the first Quarter of 2021 to the first Quarter of 2022. This is explained by the increase in mobile telephone subscriptions as well as active mobile broadband subscriptions data stipulated earlier in the report. However, operators lost 1% of revenue growth into the fourth quarter of 2021 and another 9% into the first quarter of 2022.

Revenue from mobile networks refers to retail revenue earned from the provision of mobile-cellular communication services, including all voice, SMS, data (narrowband and broadband) and value-added services (VAS) offered by mobile operators

offering services within the country during the financial year under review. Data reported exclude wholesale revenues (e.g., termination rates), revenues from device sales and rents, VAT and excise taxes.

Revenue from mobile networks increased 10% over the year under review. There was a 9%, 11% and 2% increase in the second, third and fourth quarters of 2021 respectively. An 11% decline was recorded as we moved into the first quarter of 2022. This is explained by the declines in mobile telephone traffic, SMS traffic and mobile Broadband internet traffic during the same period.

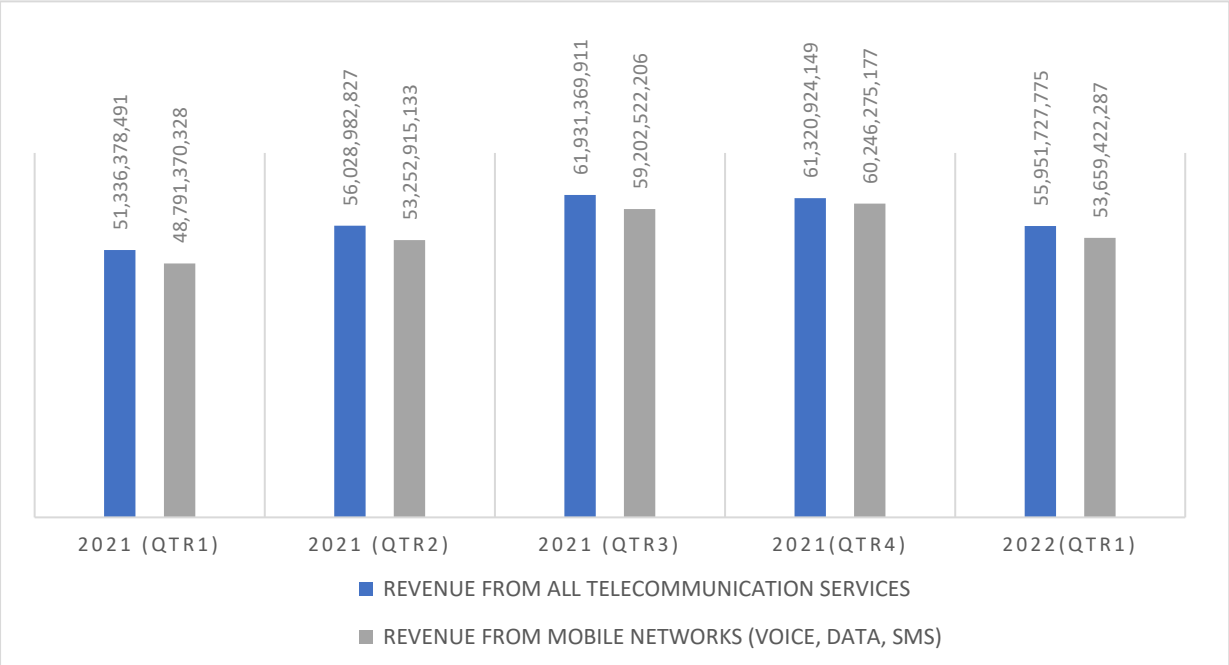

Figure 7.1: Revenue from all Telecommunication Services and Mobile Networks (Voice, Data, SMS)

7.2. Average Revenue per Subscriber

Figure 7.2 shows the average revenue per user made by operators from 2021 Quarter 1 to 2022 Quarter 1. Revenue from mobile telephone subscriptions increased by 2% in the second quarter, then again by 6% in the third quarter of 2021. Revenue per subscriber started to decline in the following quarter. The fourth quarter had a decline of 1% and the first quarter of 2022 had a decline of 10%. There was also a decline in mobile cellular subscribers in the final two quarters of the year under review. This resulted in annual revenue decline of 3%.

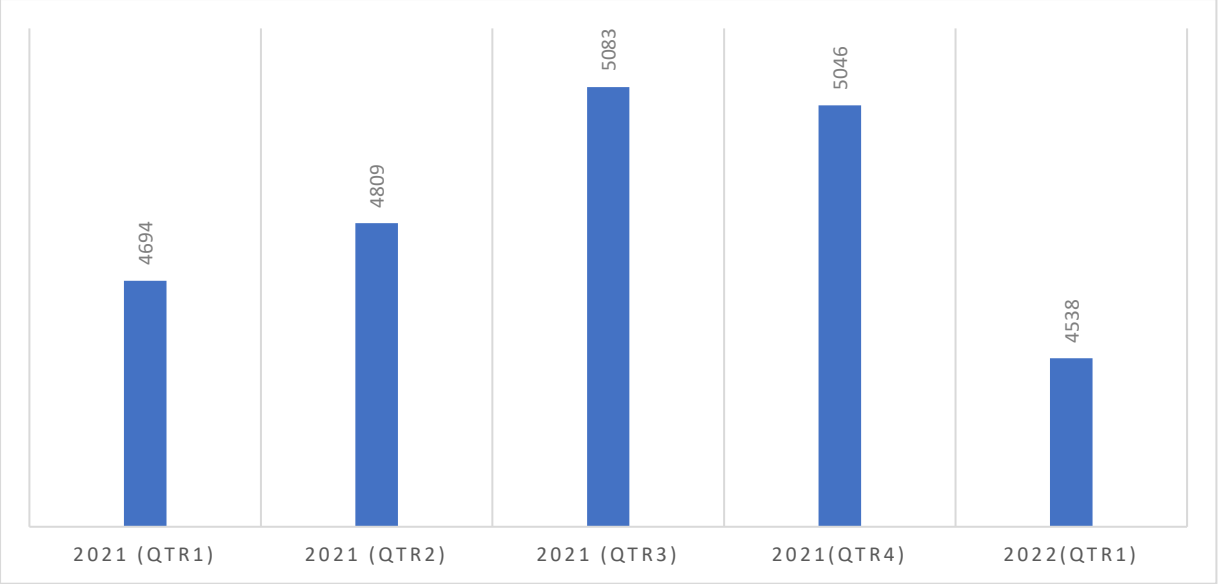

Figure 7.2: Average Revenue per Subscriber (MK)

8. NETWORK INFRASTRUCTURE

8.1. Base Stations/Towers (BTS)

This is defined as a piece of equipment that facilitates wireless communication between the user equipment and a network. Figure 8.1 shows that the number of towers has increased from Q1 of 2021 to Q1 of 2022. The growth was occurring at a significantly constant rate. Changes into the second and third quarters of 2021 had 2% growth rates. The final quarter of 2021 had a 3% growth rate against the third quarter while the first quarter of 2022 had a 2% growth rate. This resulted in a 10% annual increase in base stations.

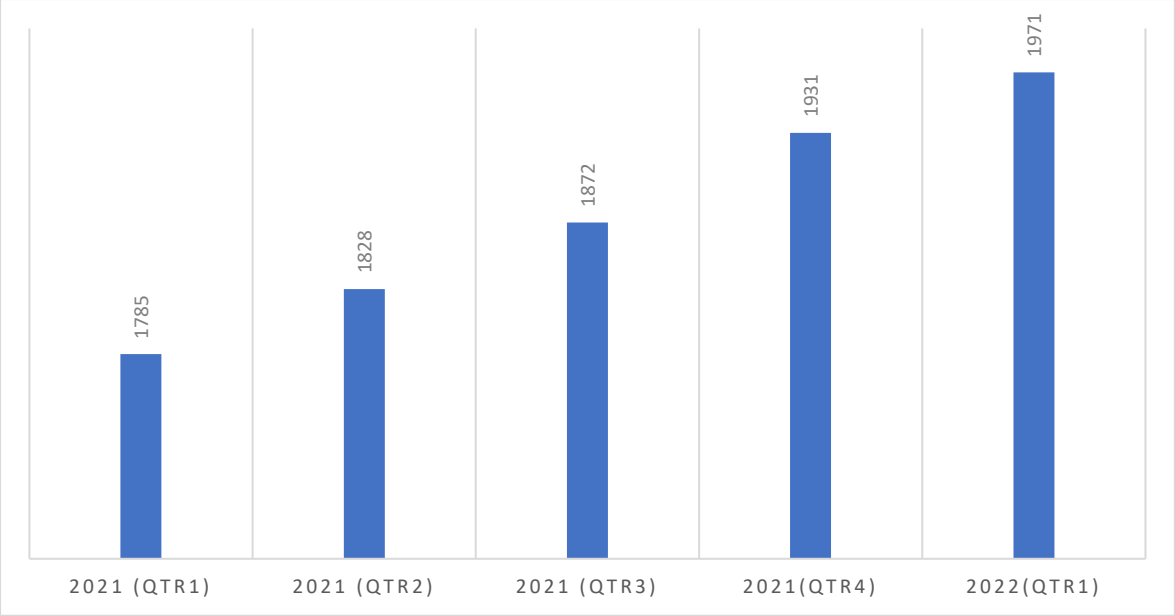

Figure 8.1: Base Transceiver Stations

9. CONCLUSION

It is important to note the following as highlights of the telecommunications sector performance.

- The Mobile cellular subscriptions increased by 14% from 10.3 million to 11.8 million in the year 2021. The increase had a decreasing growth rate in 2021 and a decline in the first quarter of 2022.
- Mobile broadband subscriptions had a 9% annual increase from 6.8 million to 7.4 million. The increase occurred at a decreasing rate in the year 2021 with a decline in the first quarter of 2022.
- Domestic Mobile telephone traffic experienced a 28% growth in the number of minutes to 2.5 billion from 1.9 billion over the year under review. This also had a decreasing rate of growth in 2021 and a decline in the first quarter of 2022.
- Mobile broadband internet traffic had a 55% increase over the year. The growth rate was increasing from the first quarter to the fourth quarter of 2021. However, the first quarter of 2022 had a decline.
- The SMS traffic had the highest annual increase of 203% among all the observed variables. It had an increasing rate of growth from the first quarter

of 2021 up until the final quarter of 2021. However, the first quarter of 2022 had a decline.

- Revenue from Mobile Networks (Data, Voice, SMS) had an annual increase of 10%. The growth rates were varying in the quarters under the review year, but a notable similarity was that the first quarter of 2022 had a decline, same as the SMS traffic, Mobile Broadband Internet traffic and the mobile telephone traffic.