



ZICTA

Annual Market Report for the ICT Sector



Information and Communication Technologies Sector 2024 Annual Market Report

*A Supply Side Assessment of Developments in the Information and Communications
Technology Sector*

Economic Regulation Department

February 2025

About this Report

The 2024 Annual Market Report for the Information and Communication Technologies (ICT) Sector was developed by the Zambia Information and Communications Technology Authority (ZICTA) as part of its regulatory mandate to track developments in the ICT sector. The report provides quantitative and qualitative insights gathered from various players in the ICT sector including providers of ICT services, Government Ministries, Agencies and Departments as well as physical and online resources which were complemented with information generated by the Authority. Specifically, the report sought to track global and national developments in the ICT sector over the year 2024. An assessment of the macro-economic environment with a focus on deciphering implications for the ICT sector is provided in the report. Key trends in ICT access and usage based on micro level data such as details on market size, competition landscape, revenue performance and investment are outlined in the report. A sectorial policy and regulatory review based on consultations with the industry is also provided. The report concludes with some sentiments on the forecast for the subsequent review period and provides some suggestions on interventions to consider for the succeeding year.

The information provided in this report is primarily compiled to assist in enhancing the regulatory functions of the Authority, assist in aligning the existing policy to the current dynamics on the market as well as to highlight any impediments on the market that need redress. Notwithstanding, all opinions, errors or omissions are the responsibility of the authors and would not present any liability on the Authority.

List of Abbreviations

CPI	Consumer Price Index
EMS	Expedited Mail Service
FDI	Foreign Direct Investment
Gbps	Gigabytes per second
GDP	Gross Domestic Product
GNI	Gross National Income
GSMA	GSM Association
HHI	Herfindahl-Hirschman Index
ICT	Information and Communication Technology
ITU	International Telecommunications Union
LTE	Long Term Evolution
MNO	Mobile Network Operator
MoFNP	Ministry of Finance and National Planning
MSMEs	Micro, Small and Medium Enterprises
OTTs	Over –The-Top Technologies
PSTN	Public Switch Technology Network
SMS	Short Message Services
UPU	Universal Postal Union
VAT	Value Added Taxes
VOIP	Voice over Internet Protocol
ZICTA	Zambia Information and Communications Technology Authority

Table of Contents

ABOUT THIS REPORT	I
LIST OF ABBREVIATIONS	II
LIST OF FIGURES	V
EXECUTIVE SUMMARY	VII
1.0. RECENT GLOBAL DEVELOPMENTS IN THE ICT SECTOR	- 1 -
1.1. GLOBAL TRENDS IN ICT ADOPTION	- 1 -
1.2. TRENDS IN GLOBAL INTERNET USAGE	- 2 -
1.3. TRENDS IN MOBILE NETWORK COVERAGE	- 3 -
1.4. GROWTH IN SUB-SAHARA 5G CONNECTIONS	- 4 -
1.5. AFFORDABILITY OF BROADBAND SERVICES	- 4 -
1.6. STATE OF THE GLOBAL MOBILE MONEY MARKET	- 5 -
1.7. MOBILE INTERNET GENDER GAP IN LOW- AND MIDDLE-INCOME COUNTRIES	- 6 -
1.8. GLOBAL CYBERSECURITY INDEX	- 6 -
1.9. ARTIFICIAL INTELLIGENCE (AI) FOR GOOD	- 7 -
2.0. SELECTED LOCAL DEVELOPMENTS IN THE ICT SECTOR	- 8 -
2.1. ISSUANCE AND RENEWAL OF LICENSES TO OPERATORS IN THE ICT SECTOR	- 8 -
2.2. TRENDS IN MOBILE MONEY TRANSACTIONS	- 9 -
2.3. NATIONAL PUBLIC FREE WI-FI	- 9 -
2.4. GSMA REPORT ON DIGITAL TRANSFORMATION IN ZAMBIA	- 10 -
2.5. UNDERWATER FIBER CONNECTION BETWEEN BURUNDI AND ZAMBIA	- 10 -
2.6. AI STRATEGY FOR ZAMBIA	- 11 -
2.7. TESTING OF ANGOSAT SATELLITE SERVICES	- 11 -
2.8. CYBERSECURITY INDEX RANKING FOR ZAMBIA	- 12 -
2.9. MOBILE CONNECTIVITY INDEX FOR ZAMBIA	- 12 -
2.10. FIBER INTERCONNECTION TO ANGOLA	- 12 -
2.11. GOOGLE CENTRE OF EXCELLENCE ESTABLISHED	- 13 -
2.12. IMPLEMENTATION OF VAT ON CROSS-BORDER ELECTRONIC SERVICES	- 14 -
3.0. DEVELOPMENTS IN THE MACROECONOMIC ENVIRONMENT	- 15 -
3.1. ECONOMIC GROWTH PERFORMANCE	- 15 -
3.2. INFLATION RATE PERFORMANCE	- 16 -
3.3. PERFORMANCE OF THE LOCAL CURRENCY	- 17 -
3.4. AVERAGE LENDING RATES PERFORMANCE	- 19 -
3.5. ACCESS TO COMMERCIAL BANK CREDIT IN THE ICT SECTOR	- 20 -
3.6. DEVELOPMENT OF STABILITY AND RESILIENCE FUND	- 21 -
3.7. 2025 TAX POLICIES REVISIONS IN THE ICT SECTOR	- 21 -
4.0. PERFORMANCE OF THE ICT SECTOR	- 23 -

4.1.	MOBILE TELEPHONE SERVICES MARKET	- 23 -
4.1.1.	Active Mobile Network Subscription	- 23 -
4.1.2.	Market Shares of Mobile Telephone Subscriptions and Trends in Market Concentration	- 24 -
4.1.3.	Mobile Cellular Voice and SMS Traffic	- 24 -
4.1.4.	Mobile Voice Tariffs	- 28 -
4.1.5.	Mobile Revenue Performance	- 29 -
4.1.6.	MNO Average Revenue per User	- 31 -
4.2.	FIXED TELEPHONY MARKET	- 33 -
4.2.1.	PSTN Subscriptions	- 33 -
4.2.2.	PSTN Traffic	- 34 -
4.2.3.	PSTN Revenue	- 34 -
4.3.	INTERNET SERVICES	- 35 -
4.3.1.	Fixed and Mobile Internet Subscription	- 35 -
4.3.2.	Bandwidth Capacity and Utilisation	- 37 -
4.4.	PASSIVE INFRASTRUCTURE	- 38 -
4.4.1.	Ownership of Tower Infrastructure	- 38 -
4.4.2.	Telecommunication Sites	- 39 -
4.5.	DATA STORAGE FACILITIES	- 40 -
4.5.1.	Capacity and Utilisation of Data Storage Facilities	- 40 -
4.5.2.	Financial Performance of Data Centre Infrastructure Providers	- 40 -
4.6.	TRANSMISSION NETWORK MARKET	- 41 -
4.6.1.	Network Capacity and Utilization in the Transmission Network Market	- 41 -
4.6.2.	Transmission Infrastructure	- 42 -
4.7.	WHOLESALE TRANSMISSION INFRASTRUCTURE	- 43 -
4.7.1.	Airtel Networks Backbone Network Infrastructure	- 43 -
4.7.2.	Bayobab Backbone Fibre Network Map	- 44 -
4.7.3.	Zamtel Backbone Network Map	- 45 -
4.7.4.	Fibrecom backbone Infrastructure Network Map	- 46 -
4.7.5.	Paratus Fibre Network Map	- 47 -
4.7.6.	BCS Fibre Network Map	- 48 -
4.8.	EMPLOYMENT IN THE ICT SECTOR	- 49 -
5.0	SECTORIAL POLICY AND REGULATORY REVIEW	- 50 -
5.1.	POSITIVE FACTORS INFLUENCING GROWTH ON THE MARKET	- 50 -
5.2.	CONSTRAINTS TO GROWTH ON THE MARKET	- 52 -
5.3.	PROPOSALS FOR ENHANCING THE BUSINESS ENVIRONMENT	- 53 -
6.0	OUTLOOK FOR THE ICT SECTOR IN 2025	- 56 -

List of Figures

FIGURE 1: GLOBAL CELLULAR SUBSCRIPTIONS TRENDS; 2005 - 2024.....	- 1 -
FIGURE 2: PERCENTAGE OF INDIVIDUALS USING THE INTERNET BY REGION	- 2 -
FIGURE 3: GLOBAL MOBILE NETWORK COVERAGE BY TECHNOLOGY.....	- 3 -
FIGURE 4: TRENDS IN ICT AFFORDABILITY.....	- 5 -
FIGURE 5: ECONOMIC GROWTH PERFORMANCE; 2022Q3 – 2024Q3.....	- 16 -
FIGURE 6: INFLATION RATE PERFORMANCE; DEC 2023 – DEC 2024	- 17 -
FIGURE 7: EXCHANGE RATE PERFORMANCE; DEC 2023 – DEC 24	- 18 -
FIGURE 8: AVERAGE LENDING RATE PERFORMANCE; DEC 2023 – Nov 24	- 19 -
FIGURE 9: COMMERCIAL BANK CREDIT ALLOCATED TO TRANSPORT, STORAGE, AND COMMUNICATION SECTOR; OCT 2022 – OCT 2024	- 20 -
FIGURE 10: TRENDS IN ACTIVE MOBILE CELLULAR SUBSCRIPTIONS 2021 TO 2024	- 23 -
FIGURE 11: TRENDS IN MOBILE CELLULAR MARKET CONCENTRATION 2021 - 2024	- 24 -
FIGURE 12: TRENDS IN DOMESTIC OUTGOING TRAFFIC IN MINUTES: 2021 TO 2024	- 25 -
FIGURE 13: TRENDS IN DOMESTIC INCOMING TRAFFIC IN MINUTES: 2021 TO 2024.....	- 25 -
FIGURE 14: TRENDS IN INTERNATIONAL OUTGOING TRAFFIC IN MINUTES: 2021 TO 2024.....	- 26 -
FIGURE 15: TRENDS IN INTERNATIONAL INCOMING TRAFFIC MINUTES: 2021 TO 2024.....	- 27 -
FIGURE 16: TRENDS IN SMS TRAFFIC 2021 – 2024.....	- 27 -
FIGURE 17: MOBILE VOICE TARIFFS ‘PER MINUTE IN ZMW’: 2018-2024.....	- 28 -
FIGURE 18: TRENDS IN MNO REVENUE PERFORMANCE, 2021 TO 2024	- 30 -
FIGURE 19: CONTRIBUTION TO TOTAL REVENUE BY SERVICE FOR MNO, 2023 TO 2024.....	- 31 -
FIGURE 20: TRENDS IN AVERAGE REVENUES PER USER: 2021 - 2024.....	- 32 -
FIGURE 21: TRENDS IN PTSN ACTIVE SUBSCRIPTIONS; 2021 – 2024	- 33 -
FIGURE 22: TRENDS IN PSTN TRAFFIC, 2022 – 2024.....	- 34 -
FIGURE 23: TRENDS IN PSTN REVENUES, 2021 – 2024.....	- 35 -
FIGURE 24: TRENDS IN INTERNET SUBSCRIPTION; 2021 TO 2024.....	- 36 -
FIGURE 25: BANDWIDTH CAPACITY AND UTILIZATION BY MNO, 2023 TO 2024.....	- 38 -
FIGURE 26: TRENDS OF TOWER INFRASTRUCTURE: 2021 TO 2024	- 39 -
FIGURE 27: TRENDS IN TELECOMMUNICATION SITES 2023 - 2024	- 39 -
FIGURE 28: TRENDS IN NETWORK TRANSMISSION CAPACITY AND UTILIZATION, 2023 TO 2024	- 41 -
FIGURE 29: AIRTEL NETWORKS BACKBONE FIBRE NETWORK INFRASTRUCTURE (2024)	- 43 -
FIGURE 30: BAYOBAB BACKBONE FIBRE NETWORK (2024).....	- 44 -
FIGURE 31: ZAMTEL FIBRE BACK BONE INFRASTRUCTURE (2024).....	- 45 -
FIGURE 32: FIBRECOM BACKBONE FIBRE NETWORK (2024).....	- 46 -
FIGURE 33: PARATUS BACKBONE FIBRE NETWORK (2024).....	- 47 -
FIGURE 34: BCS BACKBONE FIBRE NETWORK (2024)	- 48 -
FIGURE 35: EMPLOYMENT IN THE ICT SECTOR, 2021 TO 2024.....	- 49 -

List of Tables

TABLE 1: NUMBER OF VALID LICENSES ISSUED IN THE ICT SECTOR, 2023- 2024	- 8 -
TABLE 2: TRENDS IN VOLUMES AND VALUES OF ELECTRONIC MONEY TRANSACTIONS.....	- 9 -
TABLE 3: REGIONAL BENCHMARK OF HEADLINE TARIFFS	- 29 -
TABLE 4: REGIONAL BENCHMARKING OF DATA AND VOICE BUNDLES	- 37 -
TABLE 5: DATA CENTRE SERVICE PROVIDERS' PERFORMANCE STATISTICS, 2023 TO 2024	- 40 -
TABLE 6: WHOLESALE CARRIERS FIBRE NETWORK SPAN (2024).....	- 42 -

EXECUTIVE SUMMARY

Major Global Developments in the ICT Sector: The International Telecommunications Union (ITU) 2024 Facts and Figures Report revealed that mobile broadband subscriptions across the world increased by an average of 5 percent annually over the past five years (2019-2024) while mobile cellular subscriptions increased by 2.5 percent over the same period. Additionally, the report highlighted that an estimated 5.5 billion people from across the world, or 68 percent of the world's population were online by 2024, increasing from 65 percent in 2023. The ITU also estimated that by the end of 2024, 5G coverage had reached 51 percent of the global population. However, the distribution was uneven as high-income countries had 81 percent 5G coverage, while only 4 percent of low-income countries were covered. Broadband affordability improved in 2024 and exceeded the UN Broadband Commission's affordability target of 2 percent per GNI per capita for a mobile broadband basket. Notably, the global median price of the 2GB mobile broadband basket dropped from 1.3 percent to 1.1 percent of GNI per capita between 2023 and 2024. The 2024 Global Cybersecurity Index (GCI) report by the ITU revealed significant progress in global cybersecurity, with 46 countries attaining Tier 1 status by excelling in legal, technical, organisational, capacity development, and cooperative measures. However, most nations remained in Tier 3 or 4, particularly in developing regions, highlighting persistent challenges. Further, the 2024 State of the Industry Report on Mobile Money prepared by the GSMA showed a 23 percent increase in mobile money transaction volumes, which reached 85 billion in 2023 while the value of the transactions grew by 14 percent between 2022 and 2023.

Major Local Developments in the ICT Sector: At the end of December 2024, there were a total number of ninety-three (93) valid electronic communication licenses in the ICT sector compared to ninety-four (94) valid licenses at the end of December 2023. The total number of active mobile money subscriptions in the country declined from 12.9 million in 2023 to 12.3 million in the same year, reflecting a negative growth rate of 4.65 percent. Conversely, the value of mobile money transactions increased from ZMW 452.0 billion recorded at the end of 2023 to ZMW 486.0 billion at the end of 2024 reflecting an increase of 7.59 percent. Similarly, the volume of mobile money transactions increased significantly from 2,242 million transactions at the end of 2023 to 2,990 million transactions at the end of 2024 reflecting an improvement of 33.38 percent. In 2024, the government

launched the ZamFree Initiative, a National Public Free Wi-Fi project aimed at bridging the digital divide and fostering a digital economy. Additionally, the GSMA released a report titled "Driving Digitalization of the Economy in Zambia: Leveraging Policy Reforms," emphasizing digitalization's role in supporting government objectives outlined in Zambia's Vision 2030 and the Eighth National Development Plan (8NDP). Zambia and Burundi signed a Memorandum of Understanding at the Digital Government Africa Summit in Lusaka to connect through an underwater fiber optic cable, enhancing regional connectivity. To promote emerging technologies, the government introduced the Artificial Intelligence (AI) Strategy in October 2024. The International Telecommunication Union's 2024 Global Cybersecurity Index reported an improvement in Zambia's score from 68.8percent in 2018 to 92.6percent in 2024, significantly surpassing the global average of 65percent. Other notable developments in 2024 included the launch of an additional international cross-border connection to Angola through Fibercom and Bayobab, ensuring high-speed, reliable Internet services. Furthermore, Google partnered with the government to establish an Artificial Intelligence Centre of Excellence, following a Memorandum of Understanding between Google Cloud and the Ministry of Technology and Science in June 2024. On fiscal policy, the Zambia Revenue Authority implemented VAT on digital services in April 2024, following the enactment of the Value Added Tax (Cross Border Electronic Services) Regulations, 2024.

Macroeconomic Performance: In 2024, Zambia's economic performance exhibited both resilience and challenges. Real Gross Domestic Product (GDP) growth decelerated to 1.9percent year-on-year in the first half of 2024, from 4.3percent during the same period in 2023. This slowdown was primarily attributed to contractions in the agriculture and energy sectors, exacerbated by a severe drought that adversely affected agricultural output and led to significant electricity shortages. Despite these challenges, the Information and Communication Technology (ICT) sector demonstrated notable resilience, contributing 1.3 percentage points to the overall 2.5percent GDP growth recorded in the third quarter. However, inflationary pressures intensified, with the year-on-year Consumer Price Index (CPI) reaching 16.7percent in December 2024, from 13.1percent in December 2023. The increases in the general price level were mainly driven by escalating costs in fuel and electricity, alongside a depreciation of the Zambian kwacha. The ICT sector also experienced an increase in its annual inflation

rate from 1.7percent to 2.9percent over the review period. This was equally attributed to relatively higher costs of key inputs, mainly driven by increases in the prices of fuel and electricity, as well as the depreciation of the local currency. The Zambian kwacha depreciated by an average of 4.9percent against the United States dollar, 4.6percent against the British pound, and 14.3percent against the South African rand during the year under review. This depreciation was primarily due to a reduction in domestic output of key goods and services, such as maize and electricity, leading to increased demand for foreign goods and a subsequent decline in exports. The commercial bank lending rates remained elevated throughout 2024, averaging 29.3percent. On a positive note, total local currency credit allocated to the Transport, Storage, and Communication sector increased from ZMW 69.8 billion between October 2022 and October 2023 to ZMW 88.7 billion between October 2023 and October 2024, representing a 27.1percent increase. Similarly, foreign currency credit rose from \$750.7 million to \$965.6 million over the same period, marking a 28.7percent increment.

Performance of the ICT Sector: The table below provides selected estimates for the sector's performance in 2024:

INDICATOR	2023	2024	COMMENT
1. Total number of active mobile network subscriptions	21.1 million	23.2 million	Improvement (9.5 percent)
2. Mobile Telephone Penetration	107.9	115.7	Improvement (7.8 percentage points)
3. Market Concentration (HHI)	0.378	0.360	Increasing competition (4.8 percent)
4. Total number of active Internet (mobile & fixed) subscriptions	12.6 million	13.5 million	Improvement (7.0 percent)
5. Internet Penetration	64.2	67.3	Improvement (3.1 percentage points)
6. Total domestic outgoing traffic on mobile cellular networks (minutes)	31.9 billion	33.7 billion	Improvement (5.9 percent)
7. Volume of international outgoing traffic (minutes)	12.0 million	11.1 million	Decrease (7.2 percent)
8. Volume of international incoming traffic (minutes)	13.6 million	12.3 million	Decrease (9.6 percent)

9. Total number of operational telecommunication sites in the country	13,125	14,519	Improvement (10.6 percent)
10. Revenue performance in the mobile telephone subsector	ZMW 9.5 billion	ZMW 11.5 billion	Improvement (21.3 percent)
11. Average equipped capacity for mobile network operators.	247,000 Mbps	2,311,405 Mbps	Improvement (100.9 percent)
12. Number of telecommunication towers in Zambia	3,568	3,626	Improvement (1.6 percent)
13. Total Number of Telecommunication Sites	13,125	14,519	Improvement (10.6 percent)
14. Total available capacity among wholesale carriers	976.0 Gbps	1,110.6 Gbps	Improvement (13.8 percent)
15. Total number of Full Time employees in the ICT sector (licensed operators)	2,313	2,657	Improvement (14.9 percent)

A sectorial policy and regulatory review undertaken at the end of December 2024 through extensive consultations with operators in the ICT sector revealed the following challenges in the sector:

- a) **High Tax Incidence in the ICT sector:** despite the reduction of corporate taxes for the ICT sector in 2023, operators were of the view that the sector was still characterized by high taxes that curtailed growth within the sector. Notably, corporate taxes in the sector were still set at 35 percent, 5 percent points above that of other sectors whilst excise duty on electronic communication services was set at 17.5 percent. The relatively higher corporate taxes have reduced the scope for new investments and re-investments in the sector. Similarly, high consumption taxes essentially reduce the affordability of ICT services and can slow down the country's progress in adoption and usage of ICT services.
- b) **Zesco Load Management:** following the 2023/24 drought, the country's power utility company introduced power rationing schedules in March of 2024 that extended up to three (3) hours of electricity access a day. This directly impacted on the operations in the ICT sector negatively as most

telecommunication infrastructure required energy to function. Consequently, there was a decline in network availability as well as increase in the cost of production as operators had to switch to alternative sources of energy to keep their apparatus functioning.

- c) **High Energy costs:** the depreciation of the local currency as well as volatility in international oil prices during the year resulted in high fuel pump prices. Furthermore, the monthly revisions of fuel prices were reported to have made project planning difficult for operators as prices changed regularly. Further, given the increased reliance on generators and other energy sources amongst operators, the increased cost of this key commodity translated into increased operational costs.
- d) **Challenges in the Macroeconomic Fundamentals:** there was a notable decline in the performance of most macroeconomic variables during the review period as a result of supply constraints in the real sector. Particularly, the country recorded an increase in the inflation rate which reached a 10-year period high of 16.7 percent in December 2024 and depreciation of the local currency to a peak of ZMW/USD 27.8. The increase in inflation rate and depreciation of the local currency translated into an increased cost of doing business.
- e) **Low Smartphone Penetration:** low smartphone penetration rate, reported at about 18.6 percent of the population in 2022, was observed as a hindrance to further adoption of broadband services. Given that one of the main hindrances to usage of Internet services is the cost of an Internet enabled devices and that about 99 percent of internet users rely on mobile broadband services, smartphone accessibility is of crucial importance to enhancing Internet usage. The continued low smartphone adoption consequently slowed down the demand for Internet services in the country.
- f) **Impact of the Mobile Money Levy and Extension of Excise Duty on Airtime:** The mobile money levy Act no. 25 of 2024 brought in a levy on mobile money transactions where a progressive tax is to be applied on mobile money transactions. The implementation of this bill was perceived to have affected usage of money mobile payments as it increased the cost of using these platforms. Additionally, the revision of the definition of airtime that enabled the

extension of excise duty on fixed Internet services, resulted in reduced adoption of Internet services as affordability declined.

The outlook for the year 2025 based on the trends noted on the market as well as sentiments gathered from operators are summarized below:

- a) **Growth in ICT Uptake and Usage:** the number of subscribers for mobile network and fixed network services continued on an upward trajectory in 2024 despite the macroeconomic challenges in the country. This increase in the adoption of ICT services has been attributed to increased access to ICT services and as well as improvements in product diversity and innovation tailored to the unique needs of the consumers. It is projected that the number of mobile cellular subscribers is expected to increase to 24.5 million at the end of 2025 from 23.2 million subscriptions at the end of 2024 representing an annual growth rate of 5 percent. Further, the number of mobile cellular subscriptions is expected to increase to 25.7 million subscriptions at the end of 2026 and 26.9 million subscriptions at the end of 2027. The increase in the number of subscriptions is expected to translate into higher Internet usage and mobile cellular traffic resulting in an overall growth of the ICT sector.
- b) **Investment in Infrastructure:** there has been a notable increase in ICT infrastructure investments in the country which is expected to encourage further adoption of ICT products and services. Notably, there has been significant growth in the number of telecommunication sites, the expansion of optic fiber networks, and the establishment of additional international connectivity routes. These strategic investments are expected to continue, aimed at enhancing network coverage and capacity, which are essential for improving the quality of service by both new and existing operators. Further, the Universal Access fund will continue to invest in unserved and underserved areas to extend connectivity.
- c) **Exemptions on Excise Duty:** Statutory Instrument (SI) no. 91 of 2024 for the Customs and Excise Act which suspends excise duty on Internet services to public education institutions and public higher education institutions is expected to increase the usage of ICT services. Suspension of excise duty entails a proportional reduction in the cost of Internet services by 17.5 percent thereby increasing the affordability of these services.

Consequently, it is expected that the demand for ICT services amongst the exempted institutions will increase in the short term. However, there may be some challenges regarding the effective administration of the incentive.

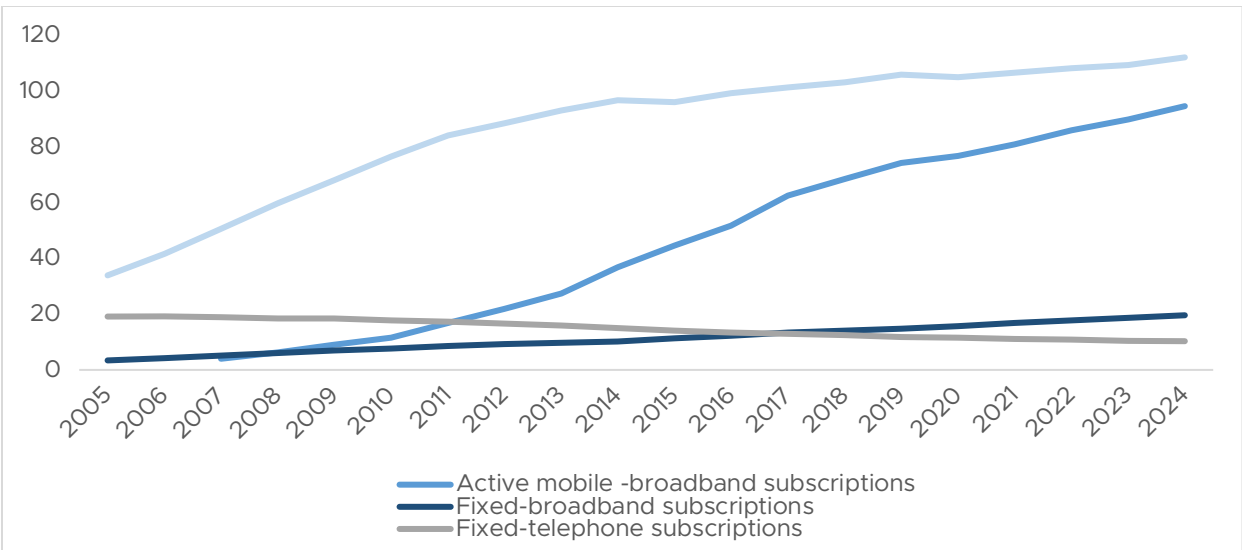
- d) **Product Portfolio:** Notable product innovations were observed amongst ICT operators as they developed products tailored to consumption trends, to increase their revenues as well as to remain competitive. The development of these products is expected to continue and encourage further adoption and usage of ICT services amongst consumers. The role of Satellite technologies is expected to increasingly play a more prominent role in the sector with new developments related to direct-to-cell technology that provide phone coverage from space already under testing globally.
- e) **Positive Macro Economic Outlook:** the Ministry of Finance and National Planning along with the International Monetary Fund (IMF) have projected GDP growth rate at 6.8 percent in 2025. This follows an estimated 2.5 percent GDP growth rate in 2024 resulting from the effects of the 2023/24 drought. An above average rainfall pattern is projected in the 2024/25 season which could lead to lower food prices and reduced load shedding which in turn are anticipated to slow down inflation, support the local currency and reduce the overall cost of doing business. Furthermore, mining output is expected to increase as new investments commence operations and expansions from existing players which could further support growth and the local currency. Consequently, the projected increase in economic activity is expected to increase demand for ICT products and services during the ensuing period.

1.0. RECENT GLOBAL DEVELOPMENTS IN THE ICT SECTOR

1.1. Global Trends in ICT Adoption

According to the International Telecommunications Union (ITU), mobile broadband subscriptions globally continued to grow rapidly compared to mobile cellular and fixed telephone subscriptions. The ITU's 2024 Facts and Figures Report revealed that mobile broadband subscriptions across the world increased by an average of 5 percent annually over the past five years (2019-2024) while mobile cellular subscriptions increased by 2.5 percent over the same period. On the other hand, fixed telephone subscriptions globally have declined at an average annual rate of 2.8 percent over the past five years. As of 2024, there were 95 mobile broadband subscriptions per 100 inhabitants across the world while mobile cellular subscriptions stood at 112 subscriptions per 100 inhabitants globally. Similarly, fixed broadband subscriptions across the world grew exponentially, averaging a 5.4 percent annual growth rate over the same period. This was mostly driven by high-income countries where fixed broadband penetration rates averaged 38 percent whilst low-income countries had a fixed broadband penetration rate of 1 percent in 2024.¹

Figure 1: Global Cellular Subscriptions Trends; 2005 - 2024



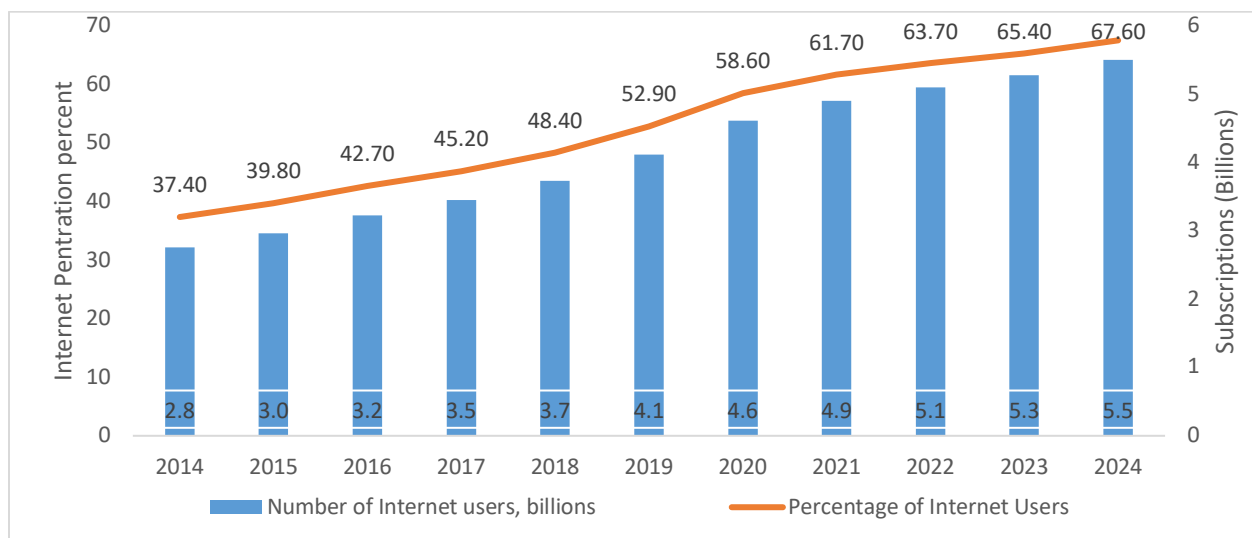
Source: 2024 ITU Facts and Figures Report

1 ITU (2024): Measuring Digital Development Report, Facts and Figures.

1.2. Trends in Global Internet Usage

In 2024, an estimated 5.5 billion people from across the world, or 68 percent of the world's population were online, increasing from 65 percent in 2023. The annual growth rate for Internet penetration globally increased from 2.7 percent in 2023 to 3.4 percent in 2024, highlighting an increased adoption of Internet platforms globally. However, 2.6 billion people, or one-third of the global population, were still offline, representing about 38 percent of the world's population. It was further observed that Internet usage remained closely tied to income levels. Specifically, high-income countries had 93 percent of the population using the Internet, nearing universal access. In Europe, the Commonwealth of Independent States (CIS), and the Americas, Internet usage ranged from 87 to 92 percent of the population. On the other hand, only 27 percent of the population in low-income countries were using the Internet. Despite the low Internet penetration rate in low-income countries, the annual growth rate of Internet users was relatively higher than other regions at 8.5 percent in 2024. Internet penetration rates remained higher amongst youths relative to the global average estimated at 79 percent of the youth population. Similarly, in Africa, the youth Internet penetration rate was estimated at 53 percent, about 20 percent points above the regional average.²

Figure 2: Percentage of Individuals Using the Internet by Region



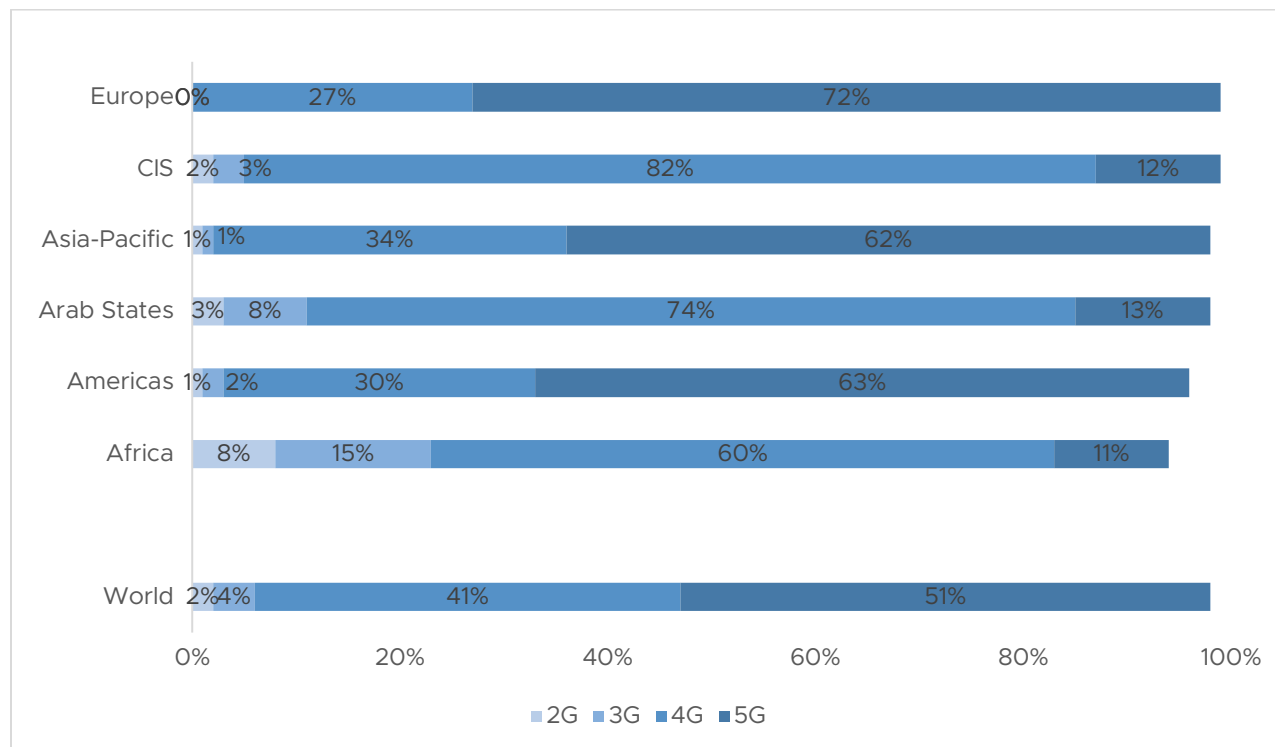
Source: 2024 ITU Facts and Figures Report

² ITU (2024): Measuring Digital Development Report, Facts and Figures.

1.3. Trends in Mobile Network Coverage

By the end of 2024, 5G coverage had reached 51 percent of the global population. However, the distribution was uneven as high-income countries had 81 percent 5G coverage, while only 4 percent of low-income countries were covered. At the regional level, Europe had the highest 5G coverage, at 72 percent of the population, followed by the Americas at 63 percent and the Asia-Pacific region at 62 percent population coverage. Coverage was much lower in the Arab States at 13 percent, the CIS at 12 percent, and Africa at 11 percent. Where 5G was not available, 4G remained a good alternative, available to 92 percent of the global population. However, in low-income countries, 4G only reached about half the population estimated at 52 percent, and 3G remained an important technology for connecting Internet users. The largest coverage gap was observed in Africa, where 14 percent of the population still did not have access to a mobile broadband network and therefore could not access the Internet³.

Figure 3: Global Mobile Network Coverage by Technology



Source: 2024 ITU Facts and Figures Report

³ <https://www.itu.int/itu-d/reports/statistics/2024/11/10/ff24-mobile-network-coverage/>

1.4. Growth in Sub-Sahara 5G Connections

According to the 2024 Ericsson Mobility Report the number of 5G subscriptions in Sub-Saharan Africa was expected to increase from 26 million in 2024 to 420 million in 2030, with an average annual growth of 13 percent. This rapid growth is anticipated from accelerated network deployment in urban areas and more affordable 5G compatible devices. The report further highlighted that 5G subscriptions are projected to account for around 33 percent of all mobile network subscriptions in the region by 2030. Further, the share of 4G subscriptions was expected to drop from 40 percent in 2024 to 35 percent in 2030, while 3G and 2G would together represent 32 percent of total mobile subscriptions by the end of the decade. The total number of mobile phone subscriptions in Sub-Saharan Africa was projected to increase from 1 billion in 2024 to 1.25 billion in 2030, marking the highest average annual growth rate globally at 4 percent per year. The region was also expected to see the fastest growth in smartphone adoption, with smartphone users rising from 540 million in 2024 to 880 million by 2030, an average annual growth rate of 9 percent. The report further observed that increasing smartphone adoption and the rapid migration to 5G networks would drive demand for data-intensive services. The number of 5G subscriptions worldwide was expected to reach 6.35 billion by 2030, representing 67 percent of all mobile network subscriptions, driven by rapid 5G deployment in regions such as the Gulf Cooperation Council, Western Europe, North America, and Northeast Asia.⁴

1.5. Affordability of Broadband Services

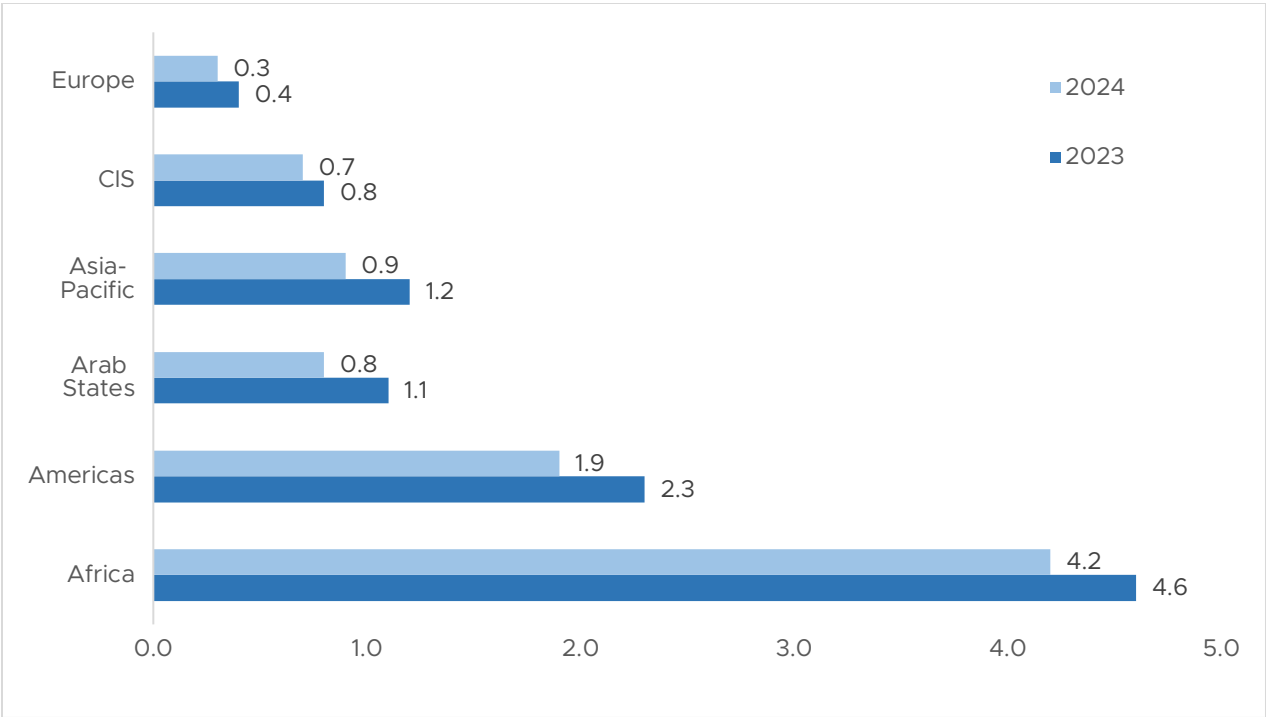
According to the 2024 ITU Facts and Figures report, broadband affordability improved in 2024 and exceeded the UN Broadband Commission's affordability target of 2 percent per GNI per capita for a mobile broadband basket. Notably, broadband affordability was measured by the availability of broadband access at a price less than 2 percent of the monthly gross national income (GNI) per capita for either data-only mobile broadband or fixed broadband baskets. The global median price of the 2GB mobile broadband basket dropped from 1.3 percent to 1.1 percent of GNI per capita between 2023 and 2024. Similarly, the fixed-broadband basket of 5GB dropped from 2.8 percent to 2.5 percent of GNI per capita during the same period. Despite the foregoing, lack of affordability continued to be a key

⁴ <https://www.ericsson.com/en/reports-and-papers/mobility-report/reports>

barrier to Internet access, particularly in Africa. Notably, the median price of the 2GB mobile broadband basket in Africa dropped from 4.9 percent to 4.5 percent of GNI per capita between 2023 and 2024. On the other hand, the price of fixed broadband in Africa dropped from 14.8 percent to 13.4 percent of GNI per capita.

5

Figure 4: Trends in ICT Affordability



Source: 2024 ITU Facts and Figures Report

1.6. State of the Global Mobile Money Market

The 2024 State of the Industry Report on Mobile Money prepared by the GSMA showed a 23 percent increase in mobile transaction volumes, which reached 85 billion in 2023 while the value of the transactions grew by 14 percent between 2022 and 2023. Registered accounts also grew to 1.75 billion in 2023, representing a 12 percent year-on-year increase from a 15 percent growth rate observed in 2022. The report also provided a comparison in economic growth between 2013 and 2022 and showed that countries with mobile money services had a \$600 billion higher GDP than those without. The report further highlighted the impact of mobile money on financial inclusion and the socio-economic development, contributing to the achievement of 15 out of 17 United Nations’ Sustainable Development Goals (SDGs). It was also demonstrated by Mobile Money Providers (MMP) that tracked disaggregated data that there was a 98 percent increase in

⁵ ITU (2024) Measuring Digital Development Reports, Facts and Figures.

the cumulative number of unique female customers saving via mobile money, between September 2022 and June 2023. Despite barriers such as low mobile ownership and digital skills, Sub-Saharan Africa led in the growth of mobile money accounts. West Africa, including Nigeria, Ghana, and Senegal emerged as leaders in mobile money adoption, attributed to favourable regulatory frameworks. However, some challenges were reported to have persisted, emphasizing the importance of addressing barriers and creating an enabling regulatory environment for global financial inclusion and mobile money uptake.⁶

1.7. Mobile Internet Gender Gap in Low- and Middle-Income Countries

The Mobile Gender Report 2024 released by GSMA in 2024 showed that the proportion of women using the Internet increased to 66 percent while that of men slowed down to 78 percent in 2023. This reduced the mobile Internet usage gender gap to 15 percent from 19 percent in 2022 meaning that 265 million less women are using the Internet relative to men. This narrowing gap was mostly driven by growth in Internet adoption amongst women in South Asia whilst the gender gap in the Sub-Sahara region reduced slightly for the first time in a five (5) year period as gender parity increased from 0.73 in 2019 to 0.76 in 2023. With regards to smartphone ownership, the gender gap also narrowed in 2023 from 15 percent to 13 percent as 60 percent of women owned smartphones against 69 percent of men. The gender gap for mobile phone ownership was much lower at 8 percent where device affordability and digital skills were the top hindrances to device ownership. The study also showed that women that used the Internet tend to use it for fewer activities than male users⁷.

1.8. Global Cybersecurity Index

The Global Cybersecurity Index (GCI) improved in 2024 relative to the 2020 GCI. Specifically, the International Telecommunications Union (ITU) published the 2024 Global Cyber security index that measures the cyber security measures adopted by countries using five pillars i.e. legal, technical, organizational, capacity development, and cooperation. The GCI report showed that 46 countries were classified at tier 1 reserved for “role modelling” countries that were committed to all five (5) pillars. Most countries are either “establishing” (Tier 3) or “evolving” (Tier

⁶ Maturing Global Mobile Money Market Hits \$1.4tn in Transaction Value - Newsroom

⁷ <https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/blog/the-mobile-gender-gap-report-2024/#:~:text=Ourpercent20Mobilepercent20Genderpercent20Gappercent20Report,wherepercent20wepercent20werepercent20inpercent202020.>

4) in the GCI classification with the African region having made the most progress since 2021. Strengths were observed on the capacity building and awareness pillar as well as the legal cyber security legal measures. The report proposed that countries develop and update national cybersecurity strategies, implement applicable legal measures across all sectors, enhance their incidence-response capabilities, deliver training and capacity building for cybersecurity professionals and foster regional and international cooperation.⁸

1.9. Artificial Intelligence (AI) for Good

The International Telecommunication Union (ITU) published *AI for Good* Impact Report in 2024 that details the trends in Artificial Intelligence (AI) uptake, existing governance for AI as well as the opportunities that this technology can provide to attain the attainment of the United Nations (UN) Sustainable Development Goals (SDGs). Specifically, AI can enhance medical diagnosis, increase access quality education, optimize energy consumption and reduce environmental changes thereby addressing SDG 3,4, 7 and 12. The report noted the significant impact of AI, particularly Generative AI in content creation, healthcare and finance. Consequently, the AI market revenues are expected to grow at a compounded annual growth rate of 19 percent, reaching over \$2 trillion by 2031. However, most AI adoption has been prevalent in high-income countries with the United States, United Kingdom and China being the highest investors of this technology. Similarly, AI governance is still in its infancy with only the European Union (EU) having enacted an AI Law. The report outlines some of the measures that countries can implement to enhance adoption of AI in a way that is ethical and sustainable⁹.

⁸ <https://www.itu.int/en/mediacentre/Pages/PR-2024-09-10-Global-Cybersecurity-Index.aspx>

⁹ <https://www.itu.int/hub/2024/10/ai-for-good-impact-report-choices-to-shape-the-future/>

2.0. SELECTED LOCAL DEVELOPMENTS IN THE ICT SECTOR

2.1. Issuance and Renewal of Licenses to Operators in the ICT Sector

As of December 31, 2024, there were a total number of ninety-three (93) valid electronic communication licenses in the ICT sector compared to ninety- four (94) valid licenses at the end of December 2023. The licenses constituted twenty-five (25) Network Facilities, thirty (30) Network Services and Facilities, thirty (30) Services (with Network Category A), and eight (8) Services (Without Network Category B). No license Service (VAS Category C) licenses had been issued during the period under review.

Table 1: Number of Valid Licenses Issued in the ICT Sector, 2023- 2024

Type of License	Coverage	Licenses 2023	Licenses 2024
1. Network Facilities	International	7	7
	National	13	13
	Provincial	2	2
	District	3	3
2. Network (Service & Facilities)	International	4	4
	National	18	19
	Provincial	2	2
	District	6	5
3. Service (With a Network- Category A)	International	4	4
	National	18	18
	Provincial	2	2
	District	6	6
4. Service (Without a Network- Category B)	National	9	8
	Provincial	0	0
	District	0	0
Total		94	93

2.2. Trends in Mobile Money Transactions

The total number of active mobile money subscriptions in the country declined from 12.9 million in 2023 to 12.3 million in 2024, reflecting a negative growth rate of 4.65percent. Conversely, the value of mobile money transactions increased from ZMW 452.0 billion recorded at the end of 2023 to ZMW 486.0 billion at the end of 2024 reflecting an increase of 7.59 percent. Similarly, the volume of mobile money transactions increased significantly from 2,242 million transactions at the end of 2023 to 2,990 million transactions at the end of 2024 reflecting an improvement of 33.38 percent. This performance was mainly attributed to the continued reliance on electronic and mobile platforms to send and receive funds as well as payment of utility services such as electricity, water and pay TV subscriptions.

Table 2: Trends in Volumes and Values of Electronic Money Transactions

	2022	2023	2024	YTD change
Volumes of Transactions	1,581,355,224	2,242,443,898	2,990,936,749	33.38percent
Values of Transactions (ZMW)	295,828,075,728.24	451,984,602,780.49	486,270,278,799.37	7.59percent
Active Subscribers	11,246,686	12,947,310	12,328,755	-4.65percent

Source: Bank of Zambia

2.3. National Public Free Wi-Fi

The Government launched the ZamFree, a National Public Free Wi-Fi initiative to bridge the digital divide and encourage transformation into a digital economy, in 2024. The initiative which was first launched at Lusaka's Intercity Bus Terminus, Kapiri-Mposhi Bus Station, and Kitwe's Chisokone Market was aimed at providing Internet access in key public spaces such as markets, bus stations, borders, airports, schools, and hospitals. It was spearheaded by the Ministry of Technology and Science (MOTS), the Ministry of Local Government and Rural Development (MLGRD), the Presidential Delivery Unit (PDU), and Smart Zambia Institute (SZI)

and is expected to enhance the usage of e-government services as the government service bus currently has over 320 government services.¹⁰

2.4. GSMA Report on Digital Transformation in Zambia

GSMA launched a report titled "Driving Digitalization of the Economy in Zambia: Leveraging Policy Reforms" in 2024. The report outlined how digital transformation could accelerate Zambia's social and economic growth, creating new opportunities for millions of people. It emphasized the role of digitalization in supporting the government's objectives, as laid out in Zambia's Vision 2030 and the Eighth National Development Plan (8NDP). It also highlighted several policy recommendations aimed at increasing productivity, stimulating innovation, and raising the living standards of the populace through the widespread adoption of digital technologies. Some of the key recommendations outlined in the report included reducing sector-specific taxes and fees, sustaining investment in telecommunications infrastructure, easing regulatory constraints on mobile retail tariffs, promoting financial inclusion through mobile money, and stimulating demand through innovation.¹¹

2.5. Underwater Fiber Connection Between Burundi and Zambia

Burundi and Zambia agreed to connect through an underwater Fiber optic cable, following a Memorandum of Understanding (MoU) signed at the Digital Government Africa Summit in Lusaka, Zambia. The cable is to be submersed in Lake Tanganyika, linking Zambia's Northern Province with Burundi's southernmost province of Makamba. The Zambian government, through the Ministry of Technology and Science, stated that this connection would position Zambia as a regional hub for information and communication technology. Burundi's Ministry of Communication, Technology, and Information emphasized that the MoU paved the way for further collaborations between the two countries. The fibre connection is expected to enhance access to broadband services in both countries as well as build redundancy for the country.¹²

¹⁰ [Zambia Launches National Public Free Wi-Fi to Boost Digital Inclusion | Extensia Ltd](#)

¹¹ [Driving Digitalization of the Economy in Zambia: Leveraging Policy Reforms Report \(GSMA 2024\)](#)

¹² [Zambia's Underwater Fibre Connection](#)

2.6. AI Strategy for Zambia

In a bid to create an enabling policy environment for the adoption of emerging technologies, the Government launched the Artificial Intelligence (AI) Strategy in October 2024. This strategy maps out the Government's plan for stimulating the adoption of emerging technologies in both public and private sectors to enhance productivity and efficiency. The strategy is primarily focused on enhancing AI adoption in education, health, climate change, agriculture and public sector. Specifically, the strategy focuses on creating a legislative framework that encourages safe utilization and management of data, enhancing research and development, improving digital infrastructure and developing digital skills. The implementation of this strategy is also expected to accelerate AI adoption amongst government entities, entrepreneurs as well as consumers.¹³.

2.7. Testing of Angosat Satellite Services

Following the signing of a Memorandum of Understanding (MOU) between the Ministry of Technology and Science and its counterpart in Angola in 2023, the country undertook testing of the Angosat services under the Conecta Angola Project. This project was developed by the Ministry of Telecommunication, Information Technology and Social Communication along with the National Space Program Management Office both of Angola with the objective of getting free Internet services to remote and rural areas of the country using satellite services. In a bid to expand rural coverage, the Zambian Government undertook testing of the Angosat-2 satellite Internet services which was expected to provide high quality Internet services in remote areas of Angola. This test was expected to translate into the first international expansion of the Angosat-2 Internet services. The government expects to replicate the Conecta Angola project by rolling out this satellite service to remote areas of Zambia targeting schools, hospitals and local government administrations if the test is successful and direct benefits for the technology are established¹⁴.

¹³ <https://www.mots.gov.zm/?p=3864>

¹⁴ <https://www.menosfios.com/en/zambia-inicia-testes-dos-servicos-de-internet-via-angosat-2/>

2.8. Cybersecurity Index Ranking for Zambia

The ITU released its 2024 Global Cybersecurity Index (GCI) Report in 2024 showcasing 194 countries' progress in enhancing national cybersecurity. Zambia's GCI score improved from 68.8 percent in 2018 to 92.6 percent in 2024 significantly exceeding the global average of 65 percent. It was noted that the country performed well on cooperation, legal and organization measures where it scored 20 out of 20. However, there was noted scope for further enhancement on capacity building in the area of cyber security in order to further enhance the standing. The score made the country one of only four African countries that were rated as 'Tier 2 – Advancing' which is a segment with scores ranging between 85 to 95 percent along with South Africa, Benin and Togo¹⁵. Zambia's commitment to cybersecurity has been attributed to the coordinated government-driven actions which include the evaluation and implementation of widely accepted cybersecurity measures across the five pillars.

2.9. Mobile Connectivity Index for Zambia

GSMA published its 2024 Mobile Connectivity Index report highlighting the performance of 173 countries in 2023 on enablers of mobile Internet connectivity. The index is a composite measure of the key mobile Internet connectivity enablers including infrastructure, affordability of mobile devices and services, consumer readiness and accessibility of relevant and secure content. The MCI for Zambia was estimated at 44.8 in 2023, reducing slightly from 45.9 recorded in 2022. Notably, the country performed better on infrastructure and consumer readiness as it was estimated above 50 out of 100 while the least performance was on the affordability measure mostly owing to taxation in the sector. The reported country's index, however, was better than the sub-Saharan average which was estimated at 42.2 percent.¹⁶

2.10. Fiber Interconnection to Angola

The country launched a unique international cross-border connection to Angola during the year through Fibercom and Bayobab ensuring high-speed reliable Internet services. Bayobab Zambia, which was the first to interconnect in this market, had over 7,100 km of fiber in the country interconnecting into seven (7)

¹⁵ https://www.itu.int/en/ITU-D/Cybersecurity/Documents/GCIv5/2401416_1b_Global-Cybersecurity-Index-E.pdf

¹⁶ <https://www.mobileconnectivityindex.com/index.html#year=2023&zoneIsocode=&analysisView=ZMB&comparison=1&geography=ZMB&metricsIndex=overall>

countries¹⁷. Fibercom completed its interconnection to Angola in the first half of the year and had a total of over 14,000km of fiber network. Prior to the interconnection tests, Zambia and Angola had signed a Memorandum of Understanding (MoU) to enhance cooperation in fiber optics and space technology. The new fiber optic connection is expected to promote digital inclusion by improving regional traffic and reducing the costs of high-speed Internet access in both countries. These efforts support the country's drive to transform into a digital hub and demonstrates the country's ongoing progress in achieving its telecommunications objectives and promoting regional connectivity. Furthermore, the increased points of presence are expected to translate into increased affordability at wholesale and retail levels thereby increasing Internet adoption within the region.

2.11. Google Centre of Excellence Established

Google partnered with the Government of the Republic of Zambia, through the Ministry of Technology and Science, to set up an Artificial Intelligence (AI) Centre of Excellence. This move followed the signing of a Memorandum of Understanding (MoU) between a Google subsidiary, Google Cloud, and the Ministry of Technology and Science in June 2024. The AI centre, which will be situated at the Zambia Research and Education Network (ZAMREN) within the University of Zambia (UNZA), will be the first of its kind in the Southern African region. The centre's focus will be on enabling young people to develop products and solutions using emerging technologies to address various challenges. Consequently, the centre of excellence is expected to be a hub that produces local innovative solutions thereby encouraging innovation, entrepreneurship and socio-economic development. Furthermore, the centre will enhance digital skills, research and technological advancements pushing towards the country's aspirations of digital transformation.¹⁸

¹⁷ <https://bayobab.africa/bayobab-zambia-is-well-positioned-to-connect-africa/>

¹⁸ <https://www.ecofinagency.com/telecom/0509-45855-google-to-establish-ai-center-of-excellence-at-the-university-of-zambia>

2.12. Implementation of VAT on Cross-border Electronic Services

Following the enactment of the Value Added Tax (Cross Border Electronic Services) Regulations, 2024, the Zambia Revenue Authority commenced application of VAT on cross border digital services in April of 2024. The legislation allows for the extension of VAT on cross border electronic services whether they have physical presence in the country or not at the standard rate of 16 percent if their annual revenues exceed the current threshold of ZMW 800,000. Cross border electronic services that currently attract VAT include streaming services, software services, downloadable digital content, website related services, subscription-based media, search engines, online market services, among others. Given that most cross-border service providers do not have physical presence in the country, they are required to engage a tax representative in the country or register and file tax returns on an online platform. The implementation of this indirect tax on digital services is expected to create a level playing field in the administration of VAT¹⁹.

¹⁹ <https://kpmg.com/us/en/taxnewsflash/news/2024/03/tnf-zambia-vat-on-cross-border-provision-of-digital-services.html>

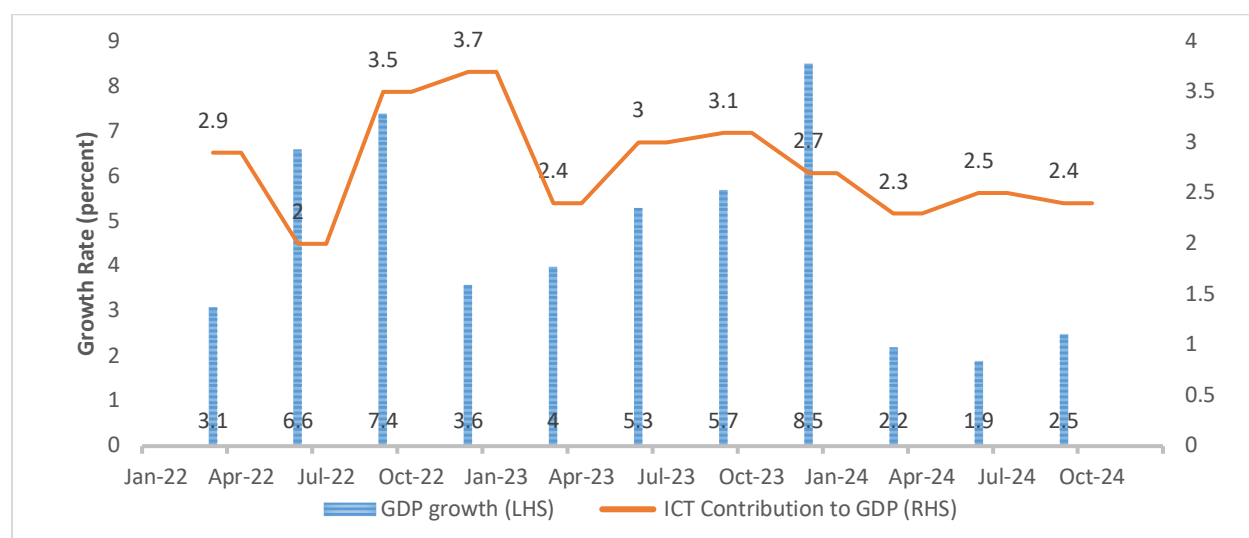
3.0. DEVELOPMENTS IN THE MACROECONOMIC ENVIRONMENT

3.1. Economic Growth Performance

There was notable positive growth in the Gross Domestic Product (GDP) observed in 2024 implying that the economic activity in the country increased. In the third quarter of 2024, the economy grew by 2.5 percent from 5.7 percent in the third quarter of 2023 representing a decline of 3.2 percent points. The increase in economic activity observed in the third quarter of 2024 was attributed to Information and Communication, construction, public administration and defense, mining and quarrying, education, manufacturing, real estate activities and human health and social work activities sectors. Notably, the ICT sector contributed significantly to Zambia's economic growth in the third quarter, accounting for 1.3 percent points of the total 2.5 percent GDP growth rate. The sector achieved a strong growth rate of 11.8 percent during the third quarter of 2024, highlighting consistent adoption of ICT services even when overall growth was subdued. It is anticipated that economic activity in the sector will continue as entities reap more benefits from the use of digital technologies. This growth is further expected to improve efficiency in other sectors and gradually improve GDP growth rates. The Ministry of Finance and National Planning has projected GDP growth rate for 2025 at 6.6 percent, which would be the highest since the 6.8 percent growth rate recorded in 2012. Consequently, it is expected that the ICT sector will benefit from the anticipated rebound in economic activity as this will increase demand for ICT services²⁰

²⁰ https://www.mofnp.gov.zm/?page_id=4096

Figure 5: Economic Growth Performance; 2022Q3 – 2024Q3



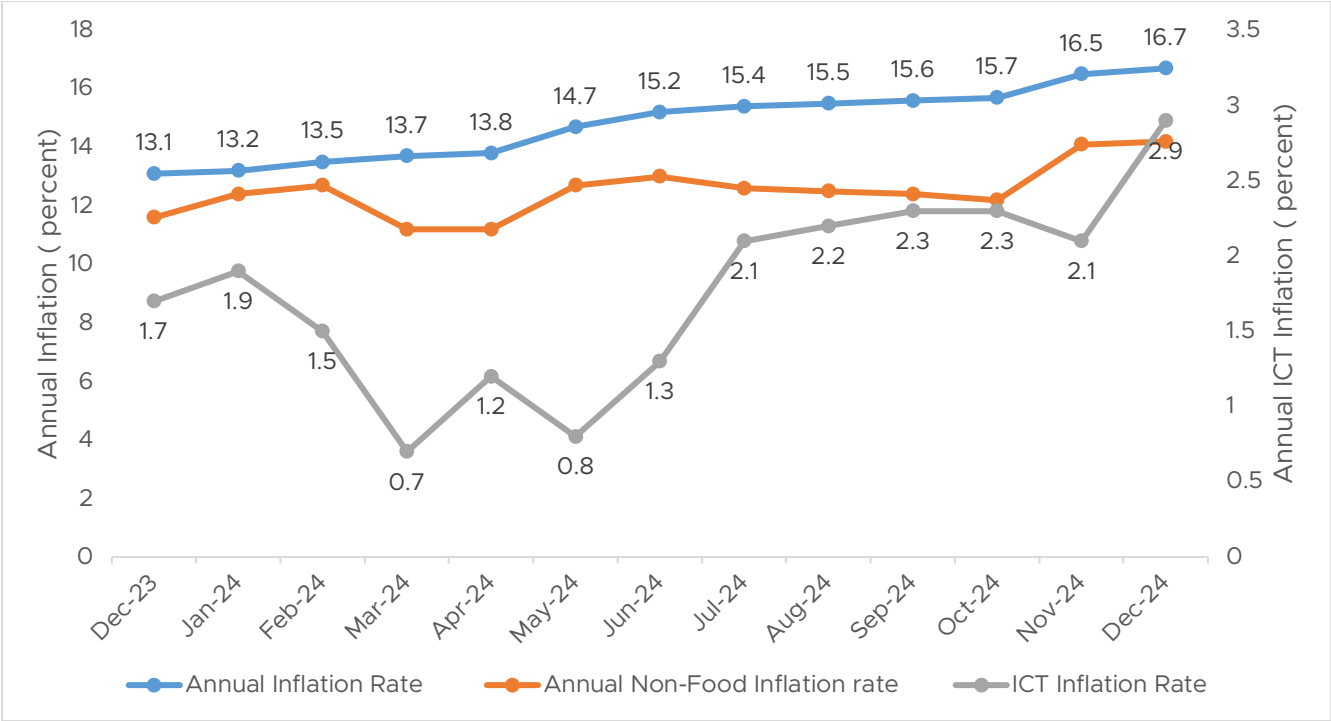
Source: Constructed using Zambia Statistical Agency Data

3.2. Inflation Rate Performance

The year-on-year inflation rate measured using the Consumer Price Index (CPI) increased to 16.7 percent in December of 2024 from 13.1 percent in December of 2023, reflecting a continued rise in the prices of goods and services over the review period. The lowest rate of inflation in 2024 was 13.2 percent observed in January while the highest rate of inflation was 16.7 percent recorded in December 2024. The annual non-food inflation was relatively lower, estimated at 14.2 percent as of December 2024, increasing from 11.6 percent at the end of 2023. Non-food inflation was mostly attributed to increases in items such as electricity, the purchase of motor vehicles, and passenger transport by air and fuel. Further, there was an observed increase in the annual inflation rate for ICT services as it increased from 1.7 percent to 2.9 percent over the review period. The increase in inflation for the ICT sector was mostly attributed to the increased cost of key inputs mainly driven by the increases in the price of fuel and electricity as well as the depreciation of the local currency. The increase in the inflation rate is expected to have an adverse impact on the cost of key inputs for the provision of ICT services as well as affordability of products and services for consumers. The Bank of Zambia projects that the annual inflation rate will fall to 13.9 percent by the end

of 2025, thereby reducing the rate of increase of goods and services²¹. This is expected to benefit the ICT sector as it will enhance the predictability of costs of local inputs and planned projects.

Figure 6: Inflation Rate Performance; Dec 2023 – Dec 2024



Source: Constructed using Zambia Statistics Agency Data

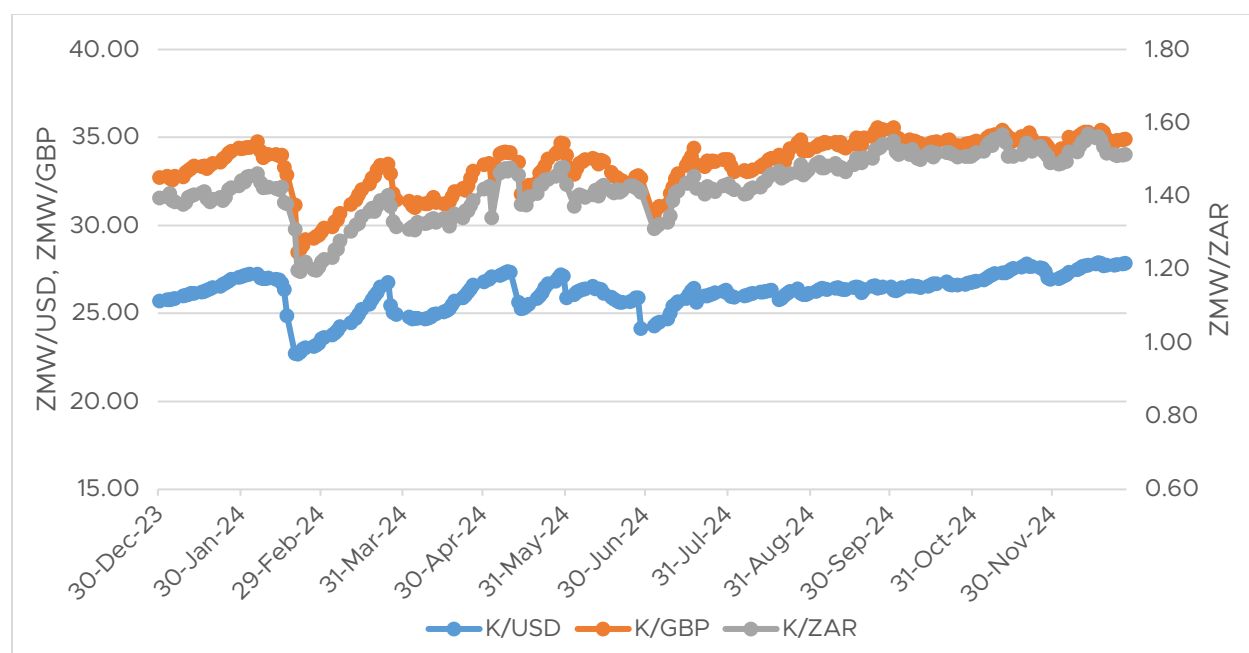
3.3.Performance of the Local Currency

The Zambian kwacha depreciated against other major trading currencies in 2024 relative to 2023. In January 2024, the kwacha was trading at ZMW 25.81 per United States Dollar (USD) and depreciated by 4.9 percent to ZMW 27.07 per USD by December 2024. A similar trend was observed with the British Pound (GBP) as the Zambian kwacha depreciated by 4.6 percent during the review period and depreciated by 14.3 percent against the South African Rand (ZAR). The monetary policy rate was raised to 14 percent in 2024 relative to 11 percent at the end of 2023 to control inflation, however, the kwacha depreciated against other currencies. This decline can be attributed to several factors such as the high cost

21 Bank of Zambia Presentation at the 2025 National Symposium on the 2025 Budget

of borrowing which dampens both domestic and foreign investment, persistent inflationary pressure, and external factors such as tightening of monetary policies in major economies. The decline in the value of the local currency against other currencies was mostly attributed to a reduction in domestic output for key goods and services such as maize and electricity, thereby increasing the demand for foreign goods and causing a reduction in exports that provided the required exports.. This depreciation of the local currency implied that there was an increase in the cost of production as the cost of internationally sourced inputs increased thereby increasing the cost of doing business. Zambia's positive economic outlook for 2025 is expected to be driven by recovery in key sectors such as energy, agriculture and mining. Investments in energy infrastructure and renewable sources are expected to reduce costs, while agricultural growth, supported by technological advancements and financing, is expected to stabilize food prices. The mining sector, supported by rising demand and new investments, is expected to expand production and boost export earnings. Together, these developments are expected to increase the supply of foreign currency through increased exports and reduce the demand for forex through enhanced domestic supply.

Figure 7: Exchange Rate Performance; Dec 2023 – Dec 24

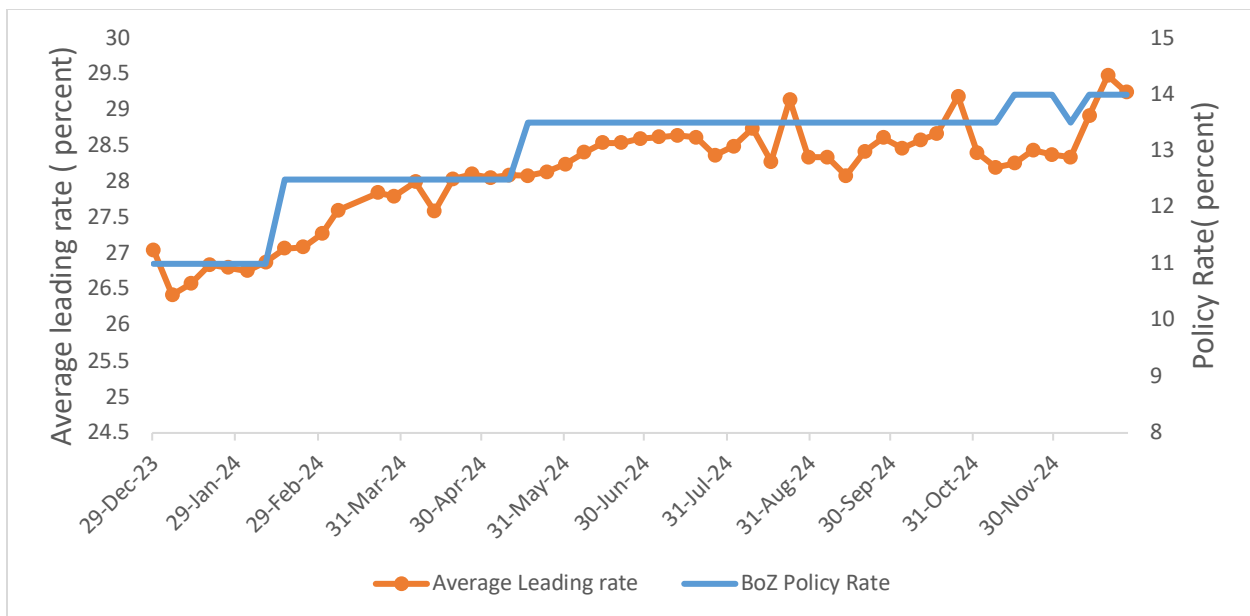


Source: Constructed using Bank of Zambia data

3.4. Average Lending Rates Performance

The average commercial bank lending rates, which depict the country's average cost of borrowing, increased gradually throughout the year 2024. Starting at approximately 27 percent at the end of 2023, the average lending rate showed a slight decrease in January 2024 to 26.4 percent mostly due to seasonal effects. However, it gradually increased throughout the year, reaching a peak of 29.5 percent in December 2024. The increase in interest rates was mostly attributed to the increase in the Monetary Policy Rate (MPC). The Bank of Zambia policy rate increased from 11 percent at the end of 2023 to 14 percent at the end of 2024, increasing by about 300 basis points over the review period. The MPC rate was increased throughout the year to steer the inflation rate towards the medium-term target range of 6 to 8 percent. The increase in the rate of borrowing is likely to also have an adverse effect on the overall cost of doing business as the cost of local currency credit increased. Going forward, tightening of monetary policy is expected to curb inflationary pressure. Furthermore, the potential for efficiency-driven innovation and cost optimization within businesses, particularly in sectors sensitive to interest rates, may mitigate the short-term adverse effects, positioning the economy for resilience and sustainable development as inflationary pressures subside. With the expected reduction in inflation, monetary policy is expected to loosen thereby reducing the cost of commercial bank lending.

Figure 8: Average Lending Rate Performance; Dec 2023 – Nov 24

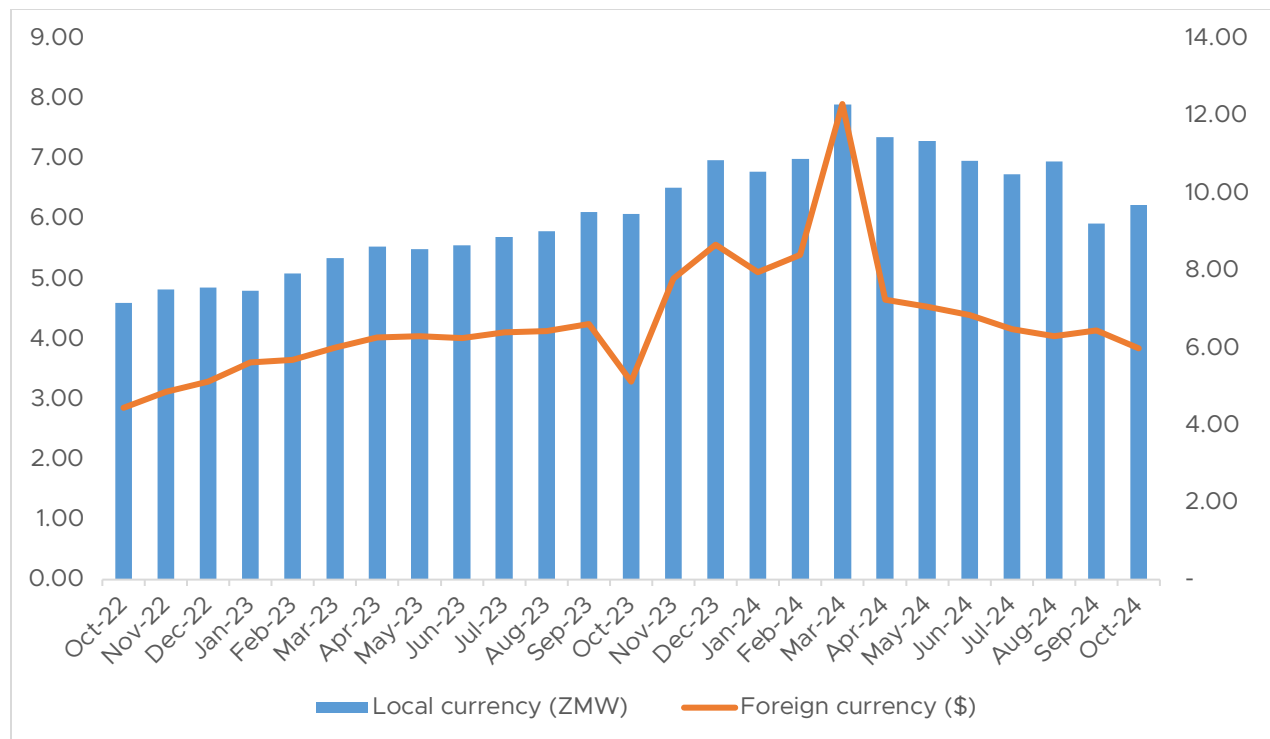


Source: Constructed using Bank of Zambia data

3.5. Access to Commercial Bank Credit in the ICT sector

The allocation of commercial bank local currency credit to the Transport, Storage and Communications Sector generally declined between 2023 and 2024. The total local currency credit allocated to the sector increased from ZMW 69.8 billion between October 2022 and October 2023 to ZMW 88.7 billion between October 2023 and October 2024, representing an increase of 27.1 percent over the review period. The increase in local currency credit was mostly attributed to the increasing demand for investment in the communication, transport and storage sector partly attributed to increasing e-commerce activity in the country. Similarly, the foreign currency credit allocated to the Transport, Storage and Communication sector increased over the review period from \$750.7 million to \$965.6 million representing an increment of 28.7 percent. The overall increase in credit allocated to this sector is expected to increase the infrastructure investments in the sector, demonstrating the growing investment potential in the sector and increasing possibility of attaining universal access to electronic communication networks amongst the population.

Figure 9: Commercial Bank Credit allocated to Transport, Storage, and Communication Sector; Oct 2022 – Oct 2024



Source: Constructed using Bank of Zambia data

3.6. Development of Stability and Resilience Fund

The Government through the Bank of Zambia launched a Stability and Resilience Fund (SRF) in 2024 aimed at stabilizing the financial sector following the 2023/24 drought. A review of the financial sector's performance of 2024 showed significant increase in average lending rates, increase in non-performing loans (NPLs) as well as increase in inflation rate and depreciation of the local currency as domestic production decreased and export demand increased. Specifically, the drought resulted in reduced food production and electricity supply which further affected productivity in various sectors as electricity loadshedding persisted. Given the central bank's mandate of promoting price and financial stability, a ZMW 5-billion access window was opened in December 2024 and is expected to run for a period of 12 months. The facility will be accessible to Financial Service Providers (FSPs) at the MPC rate for onward lending to businesses in the agricultural sector as well as those affected by loadshedding. The facility is thereby expected to provide cheaper financing for businesses that were negatively impacted by the drought and electricity loadshedding. Operators in the ICT sector, particularly SMEs, are anticipated to benefit from this facility thereby enhancing their business' capabilities and ensuring consumers can access digital services at affordable prices.

3.7.2025 Tax Policies Revisions in the ICT sector

The 2025 National Budget was presented by the Minister of Finance and National Planning (MOFNP) on 27th September 2024. The budget, which was dubbed *"Building resilience for inclusive growth and improved livelihoods"* was premised on economic recovery and promoting growth aimed at improving the livelihoods of the poor. The 2025 budget address highlighted several developments in the ICT sector and recognized the sector as pivotal to the success of key sectors of our economy. Specifically, the budget highlighted some of the main ongoing policy initiatives including infrastructure investments by private and public entities, expansion of network access through licensing of satellite services, digitalization of healthcare services, enhanced access to digital financial services (DFS) and enhanced digital skills²². Additionally, the Government introduced SI no. 91 of 2024 for the Customs and Excise Act that suspended excise duty on Internet services

²²https://www.parliament.gov.zm/sites/default/files/documents/articles/2025percent20BUDGETpercent20SPEECHpercent20Opercent20FINAL_240927_164702.pdf

to public education institutions and public higher education institutions amongst others. Furthermore, a tax amendment, Income Tax Act No. 22 of 2024, mandates the Mobile Network Operators (MNOs) and Internet Service Providers (ISPs) to integrate the Taxpayer Identification Number (TPIN) requirement into their Know Your Customer (KYC) processes²³. The suspension of excise duty on Internet services to educational facilities is expected to increase adoption of these services and enhance e-education. However, the implementation of TPIN requirements in the sim registration processes may reduce compliance amongst consumers and increase use of fraudulently registered sim cards.

²³ <https://www.parliament.gov.zm/node/12097>

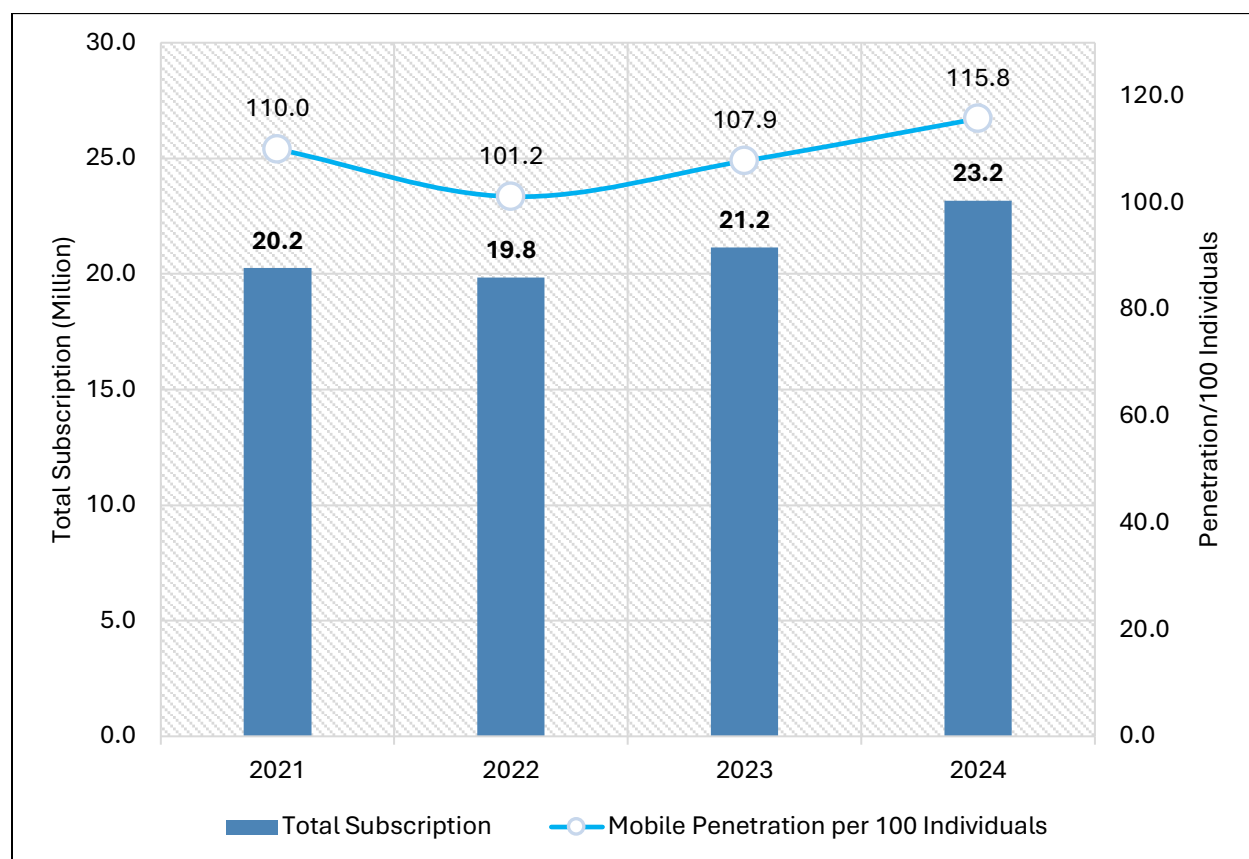
4.0. PERFORMANCE OF THE ICT SECTOR

4.1. Mobile Telephone Services Market

4.1.1. Active Mobile Network Subscription

Zambia's mobile telephone market experienced significant growth in 2024, with active mobile cellular subscriptions increasing by 9.5 percent year-on-year (YoY), rising from 21.1 million in 2023 to 23.2 million in 2024. This expansion resulted in a higher mobile penetration rate, which increased from 107.9 to 115.8 per 100 inhabitants over the same period.

Figure 10: Trends in Active Mobile Cellular Subscriptions 2021 to 2024

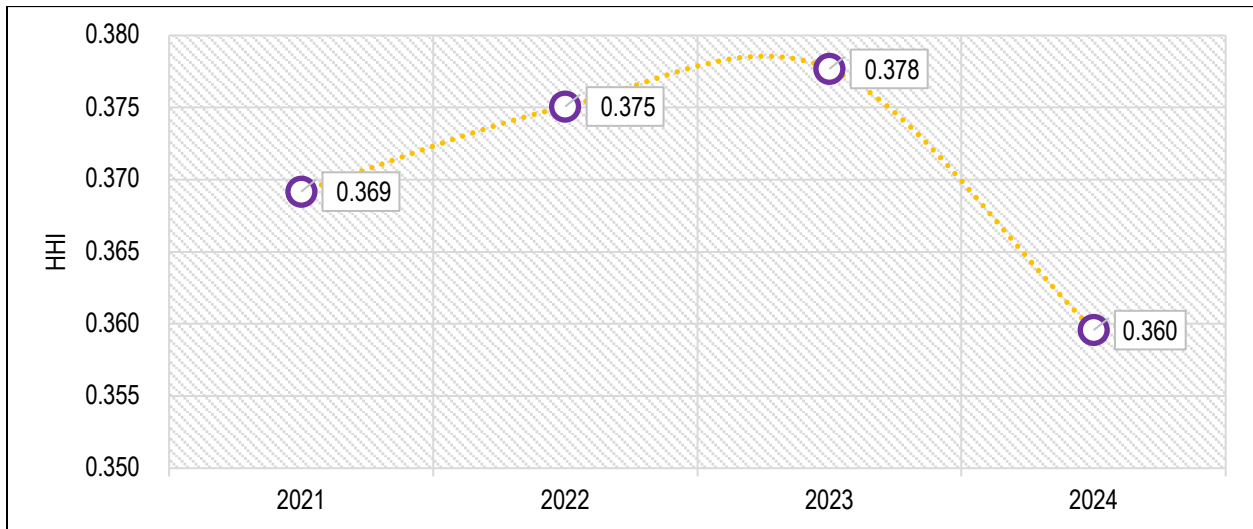


Source: Operator submissions

4.1.2. Market Shares of Mobile Telephone Subscriptions and Trends in Market Concentration

A shift in market concentration was observed through the Herfindahl-Hirschman Index (HHI), which decreased by 4.8 percent, from 0.378 in 2023 to 0.360 in 2024. This reduction reflected the impact of Zed Mobile's entry, indicating increasing competition. However, the market remained highly concentrated in 2024, with the continued dominance of the three major operators.

Figure 11: Trends in Mobile Cellular Market Concentration 2021 - 2024

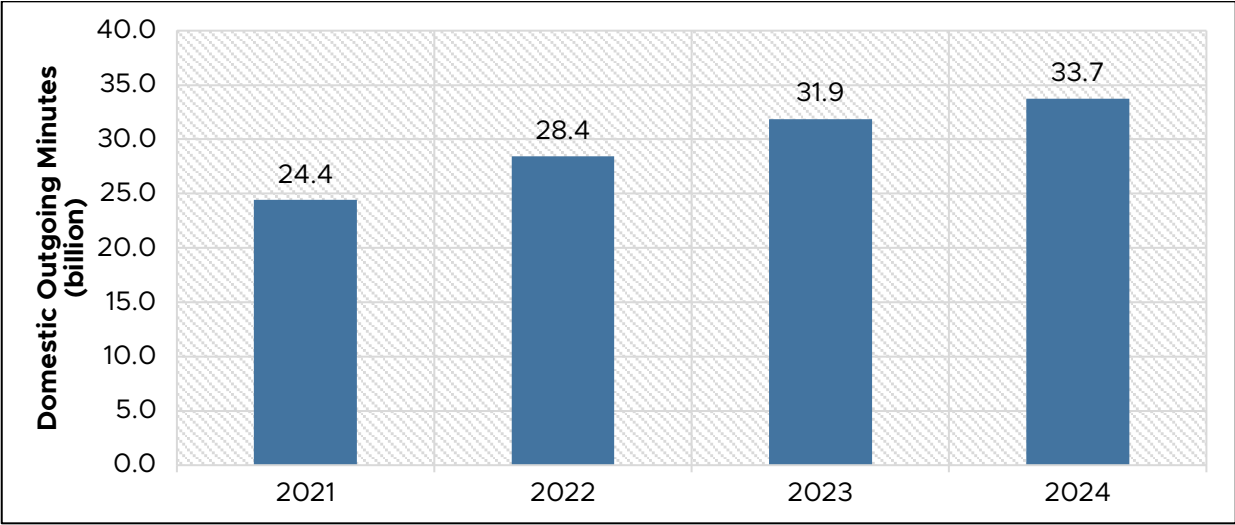


Source: Operator submissions

4.1.3. Mobile Cellular Voice and SMS Traffic

Domestic outgoing traffic in the mobile cellular subsector continued to grow in 2024, rising by 5.9 percent to 33.7 billion minutes from 31.9 billion minutes in 2023. This increase was largely driven by the affordability of bundled service offerings provided by mobile operators.

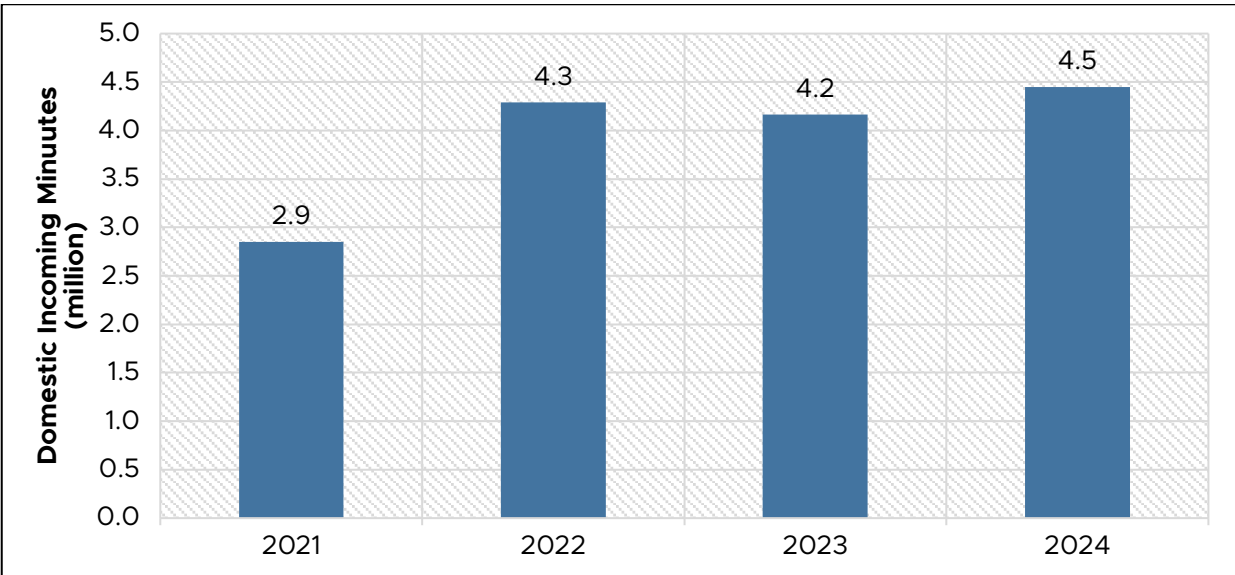
Figure 12: Trends in Domestic Outgoing Traffic in Minutes: 2021 to 2024



Source: Operator submissions

Similarly, domestic incoming traffic saw a modest increase of 6.9 percent in 2024, rising from 4.2 billion in 2023 to 4.5 billion minutes. This growth was primarily driven by increased call volumes on the networks, reflecting shifting usage patterns and promotional offers that encouraged more on-net and cross-network calling.

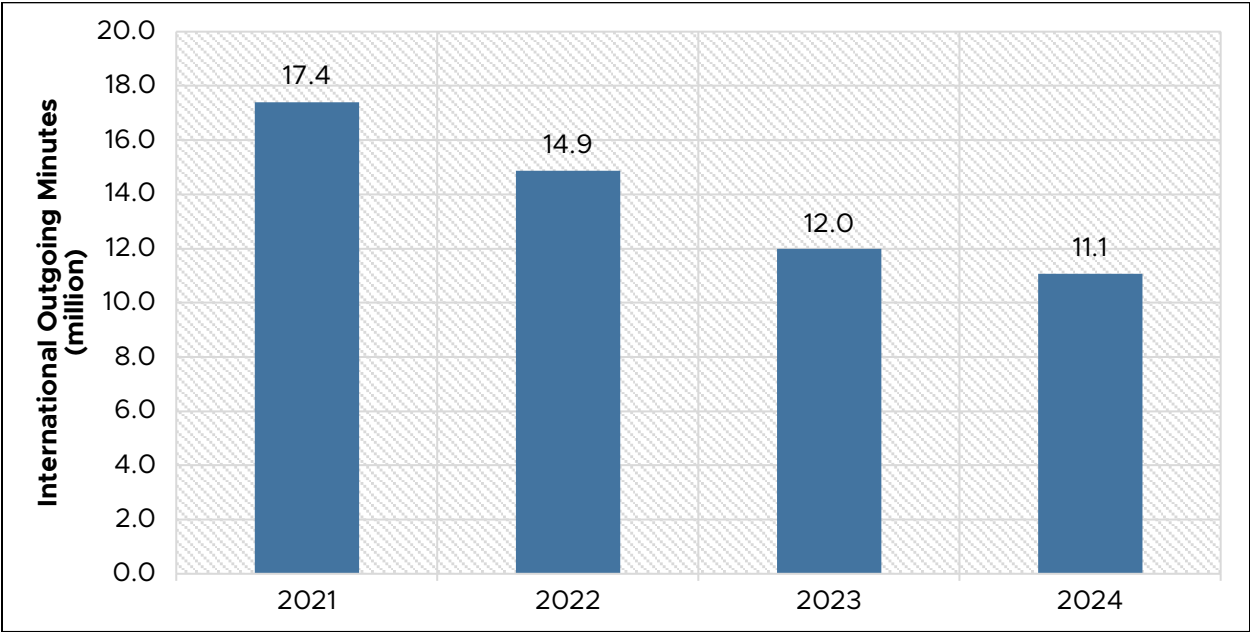
Figure 13: Trends in Domestic Incoming Traffic in Minutes: 2021 to 2024



Source: Operator submissions

The total volume of international outgoing traffic continued to decline in 2024. Outgoing international call traffic fell by 7.2 percent, dropping from 12.0 million minutes in 2023 to 11.1 million minutes in 2024. Most operators experienced a decline, primarily due to the growing adoption of Internet-based applications for messaging, voice, and video calls, as well as alternative communication platforms such as online communities and group chats.

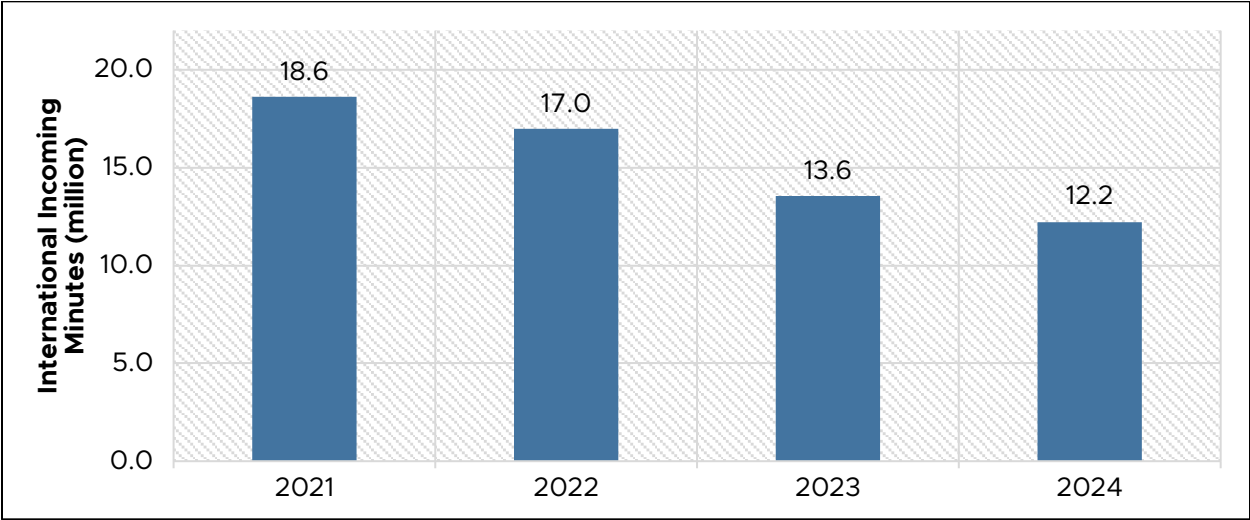
Figure 14: Trends in International Outgoing Traffic in Minutes: 2021 to 2024



Source: Operator submissions

Similarly, international incoming traffic continued to decline in 2024, with overall incoming call volumes dropping by 9.6 percent from 13.6 million minutes in 2023 to 12.3 million minutes in 2024. This decline was largely driven by the increasing use of Internet-based applications for voice calls, messaging, and other communication needs, which offer more cost-effective alternatives through bundled service packages.

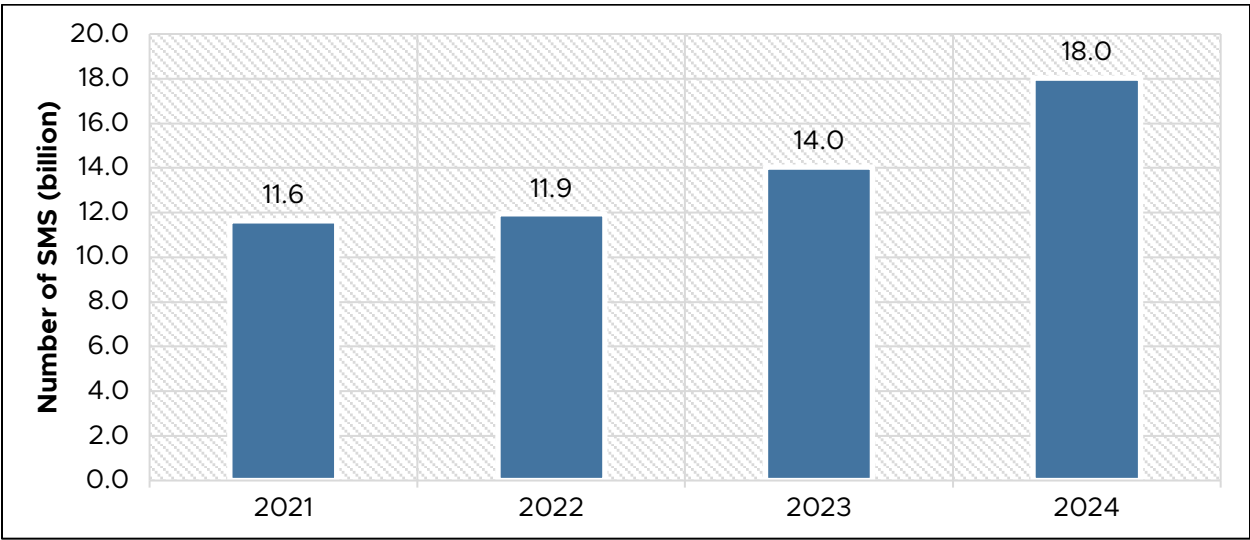
Figure 15: Trends in International Incoming Traffic Minutes: 2021 to 2024



Source: Operator submissions

Overall, SMS traffic grew by 28.3 percent in 2024, from 14.0 billion to 18.0 billion messages, driven by the expanded use of bulk SMS services by businesses, government agencies, and financial institutions. Despite the rise of Internet-based messaging, SMS remains essential for institutional communication. Its continued growth is also fueled by the affordability of bundled SMS offerings.

Figure 16: Trends in SMS Traffic 2021 – 2024

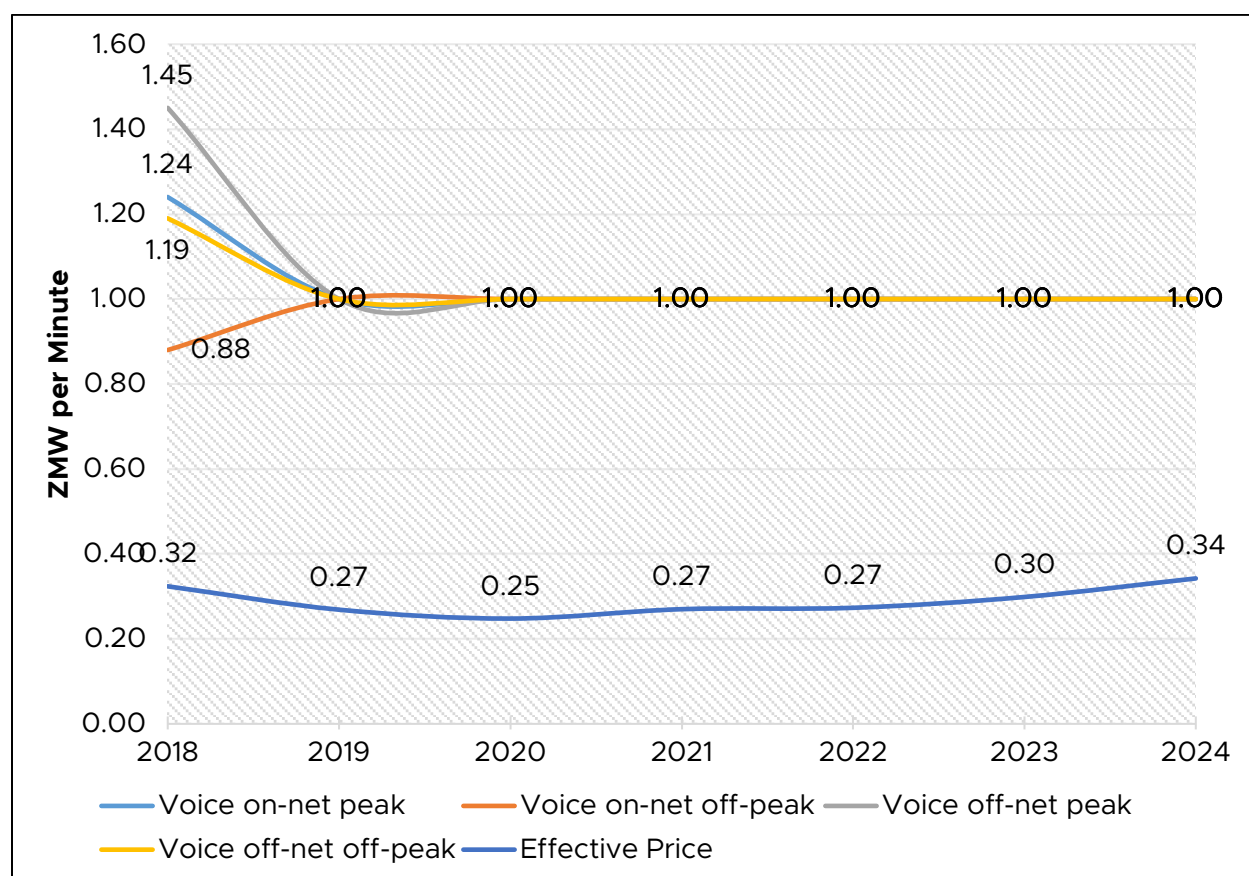


Source: Operator submissions

4.1.4. Mobile Voice Tariffs

At the end of 2024, the headline mobile call tariff remained stable at an average of ZMW 1.00 per minute for both on-net and off-net calls during peak and off-peak hours. However, the effective tariff—calculated as the ratio of revenue to outgoing voice traffic—increased from ZMW 0.30 in 2023 to ZMW 0.34. This rise was primarily due to a slower growth rate in outgoing voice traffic, influenced by tariff adjustments and changes in bundled service benefits. These adjustments were driven by currency depreciation and higher operational costs, particularly those associated with the impact of load shedding on service provision.

Figure 17: Mobile Voice Tariffs 'Per Minute in ZMW': 2018-2024



Source: Operator Submissions

A benchmark of headline tariffs on mobile voice services across eighteen countries from within the region revealed that these tariffs were somewhat competitive in 2024. The country ranked 'ninth' on Peak On-net and 'tenth' on Peak Off-net, while it ranked 'seventh' for Off-peak On-net and Off-net calls. This represented a one-step decline in affordability performance observed at the end of 2023. The decline in ratings on mostly attributed to increasing competitiveness within the region.

Table 3: Regional Benchmark of Headline Tariffs

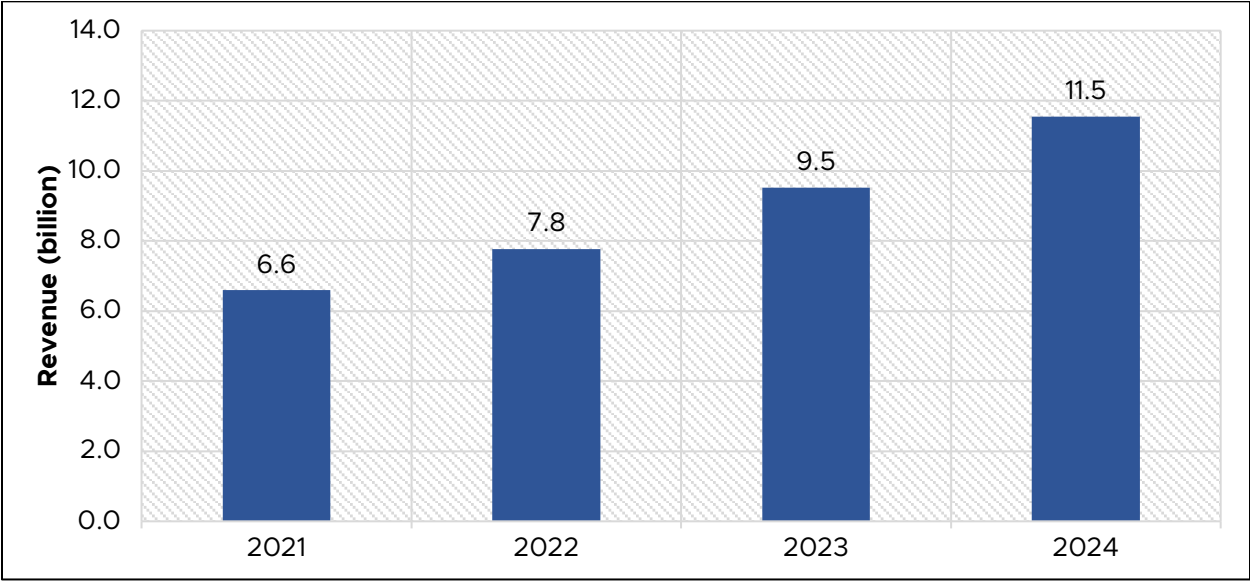
Country	ON-NET - USD/Min				OFF-NET - USD/Min			
	Mean Peak	Rank	Mean Off-Peak	Rank	Mean Peak	Rank	Mean Off-Peak	Rank
Angola	0.0351	8	0.0350	9	0.0491	9	0.0406	8
Botswana	0.0981	17	0.0590	12	0.0981	16	0.0590	11
Kenya	0.0227	3	0.0223	4	0.0251	3	0.0248	4
Lesotho	0.0891	16	0.0891	17	0.0891	15	0.0891	17
Madagascar	0.0343	7	0.0343	8	0.0507	10	0.0507	9
Malawi	0.0280	6	0.0280	7	0.0288	4	0.0288	6
Mauritius	0.0235	4	0.0235	5	0.0288	5	0.0706	13
Mozambique	0.0819	15	0.0819	16	0.0819	14	0.0819	16
Namibia	0.0783	14	0.0783	15	0.7830	18	0.0783	15
Nigeria	0.0162	2	0.0174	3	0.0174	2	0.0174	3
Rwanda	0.0276	5	0.0104	2	0.0302	6	0.0130	2
Seychelles	0.2497	18	0.1175	18	0.2850	17	0.1482	18
South Africa	0.0780	13	0.0780	14	0.0780	13	0.0780	14
Swaziland	0.0487	10	0.0259	6	0.0487	8	0.0259	5
Tanzania	0.0083	1	0.0083	1	0.0083	1	0.0083	1
Uganda	0.0657	12	0.0657	13	0.0657	12	0.0657	12
Zambia	0.0356	9	0.0356	10	0.0356	7	0.0356	7
Zimbabwe	0.0518	11	0.0518	11	0.0518	11	0.0518	10

Source: MNO Websites

4.1.5. Mobile Revenue Performance

Zambia's mobile cellular subsector experienced significant revenue growth in 2024, with total revenues increasing by 21.3 percent from ZMW 9.5 billion in 2023 to ZMW 11.5 billion. This growth reflects the expanding adoption of ICT services and the increasing reliance on mobile connectivity for communication, commerce, and digital transactions. The overall rise in revenue was driven by the growing demand for mobile services, including data and digital financial transactions, which continue to shape the sector. This upward trend is expected to support further reinvestments and expansion within the subsector.

Figure 18: Trends in MNO Revenue Performance, 2021 to 2024

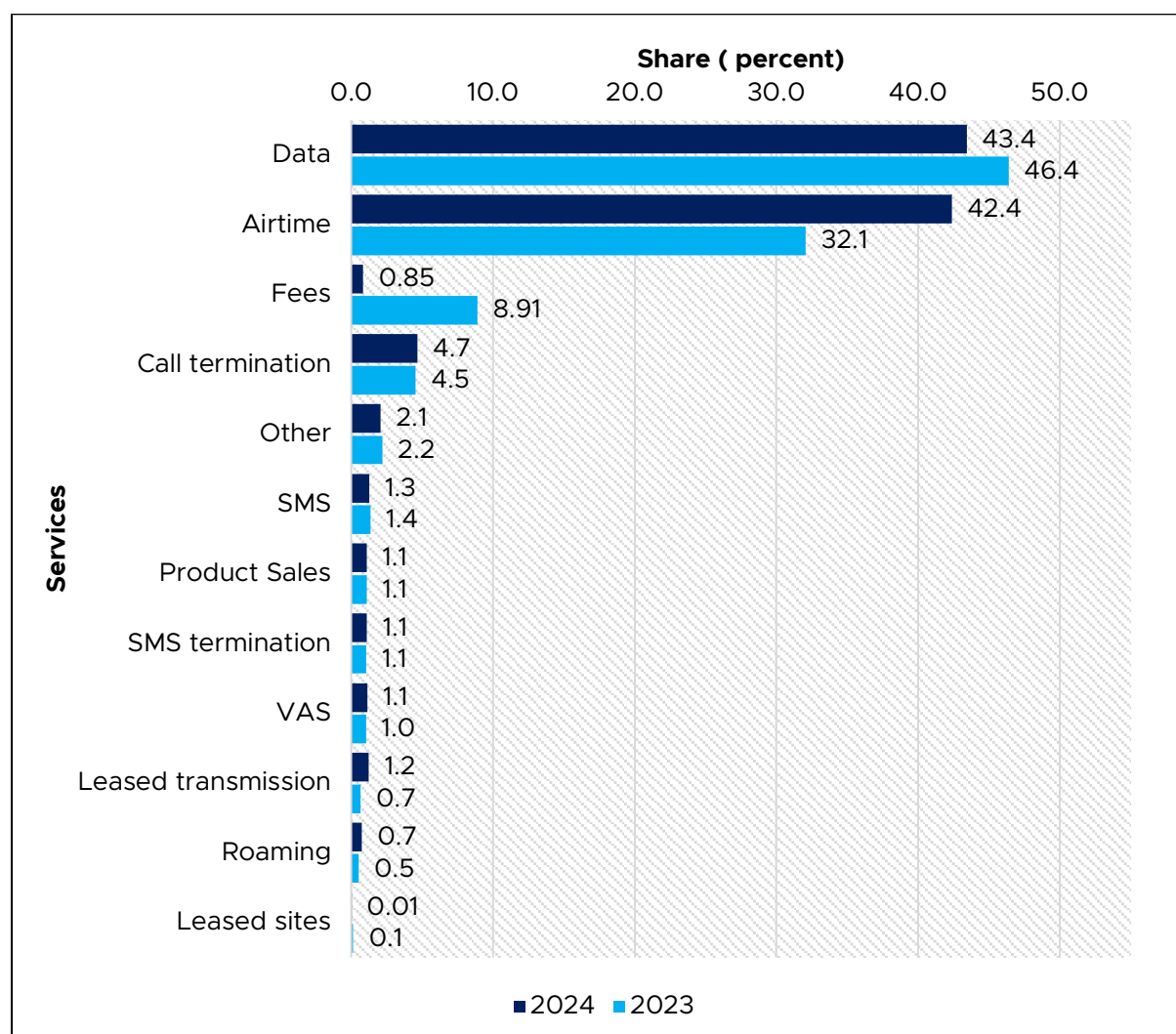


Source: Operator submissions

A detailed analysis of revenue sources reveals a shift in contribution patterns. While data services remained the largest revenue driver, accounting for 43.4 percent of total mobile network revenue, this marked a decline of 3.0 percentage points from 2023. In contrast, airtime revenue saw significant growth, accounting for 42.4 percent of revenues in 2024 from 32.1 percent in the previous year. This increase suggests that traditional voice services remained resilient, supported by bundled offers that integrated voice, SMS, and data, driving overall usage.

Despite overall revenue growth, certain streams declined, reflecting the ongoing transition to data-driven communication. Revenue from fees, SMS, and leased sites continued to decrease, influenced by the growing adoption of over-the-top (OTT) messaging applications such as WhatsApp, Messenger, and Telegram. Additionally, roaming services remained the smallest revenue contributor, in line with the rising use of VoIP and international data-based communication tools that reduce reliance on traditional roaming.

Figure 19: Contribution to Total Revenue by Service for MNO, 2023 to 2024

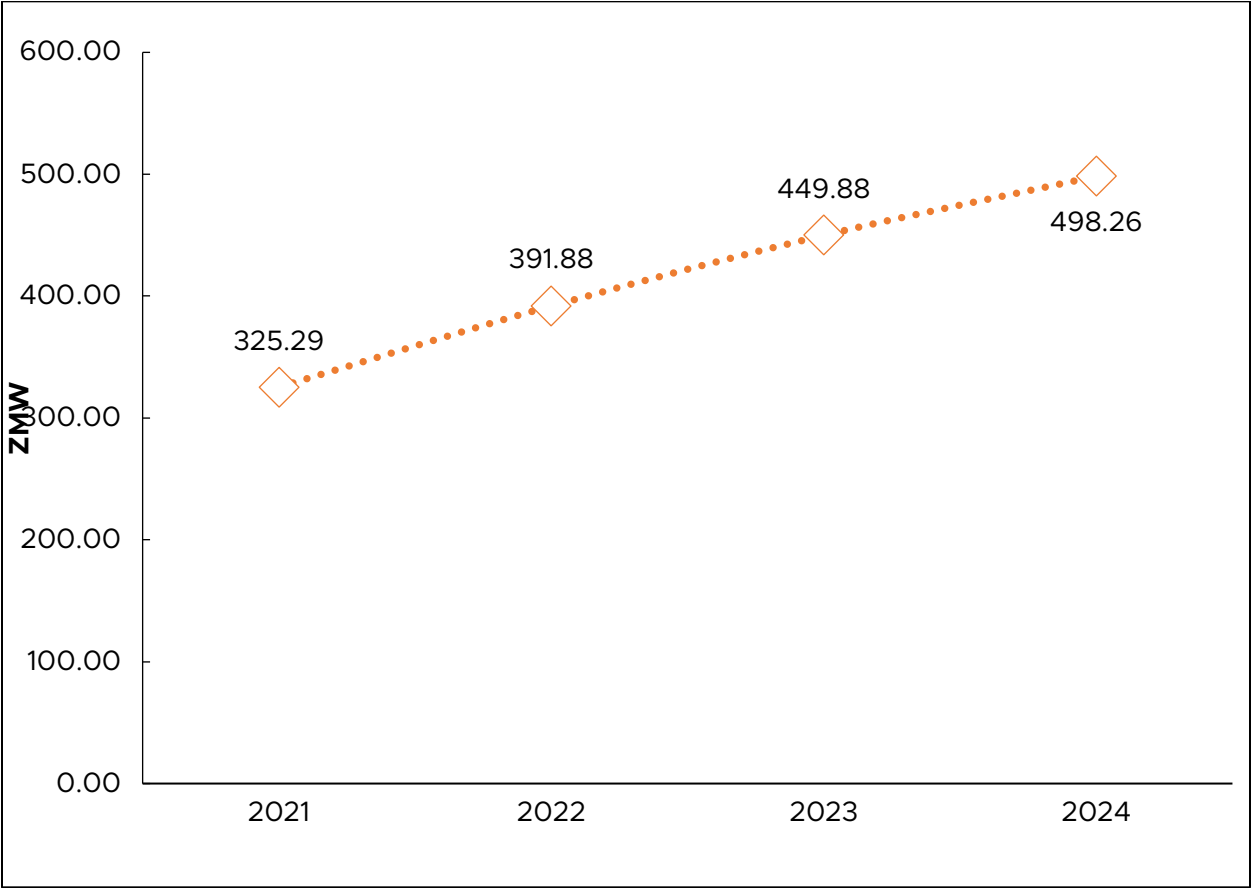


Source: Operator submissions

4.1.6. MNO Average Revenue per User

The Average Revenue per User (ARPU) increased by 10.8 percent in 2024, reaching ZMW 498.26, driven by higher usage of mobile services, particularly data, digital services, and value-added offerings such as mobile money and premium content. However, ARPU trends varied, with some providers experiencing growth while others faced declines, reflecting differences in customer spending behavior, pricing strategies, and market positioning.

Figure 20: Trends in Average Revenues per User: 2021 - 2024



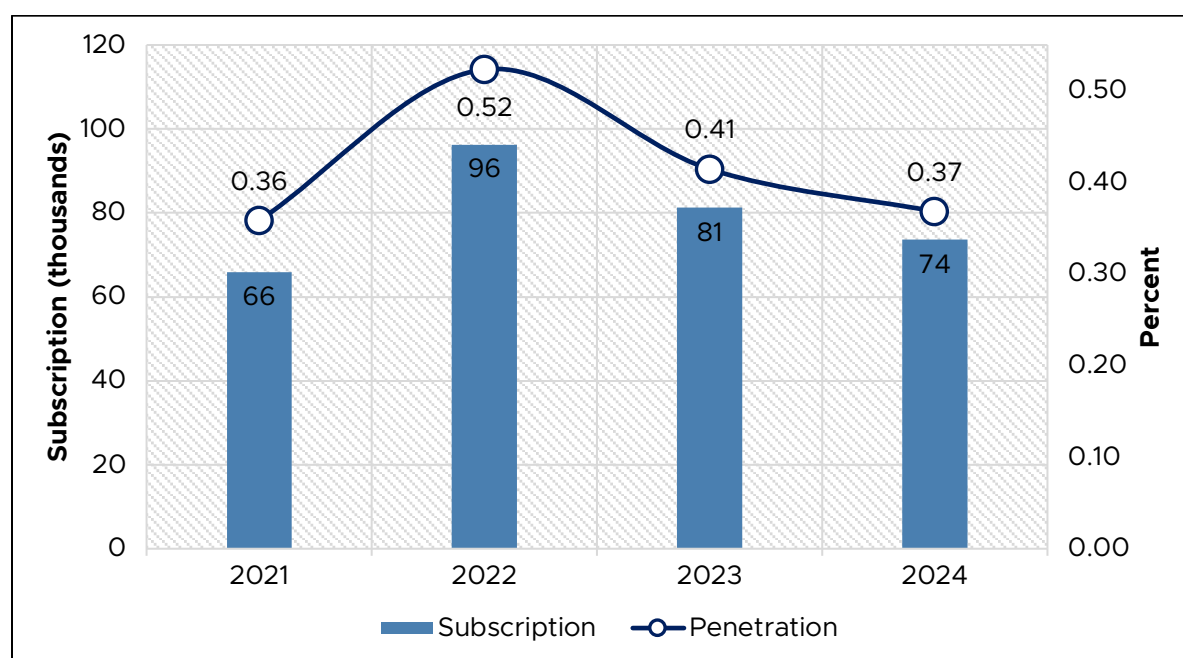
Source: Operator submissions

4.2. Fixed Telephony Market

4.2.1. PSTN Subscriptions

The fixed telephone (PSTN) market in Zambia continued its declining trend in 2024, with total subscriptions dropping by 9.3 percent, from 81,264 in 2023 to 73,688 in 2024. This decline led to a reduction in fixed-line penetration, which fell from 0.41 to 0.37 per 100 inhabitants over the same period. The shrinking subscriber base can be largely attributed to the increasing preference for mobile telephony and Internet-based communication solutions. Businesses and households are progressively abandoning traditional landlines in favor of mobile services due to their convenience, flexibility, and cost-effectiveness.

Figure 21: Trends in PSTN Active Subscriptions; 2021 – 2024

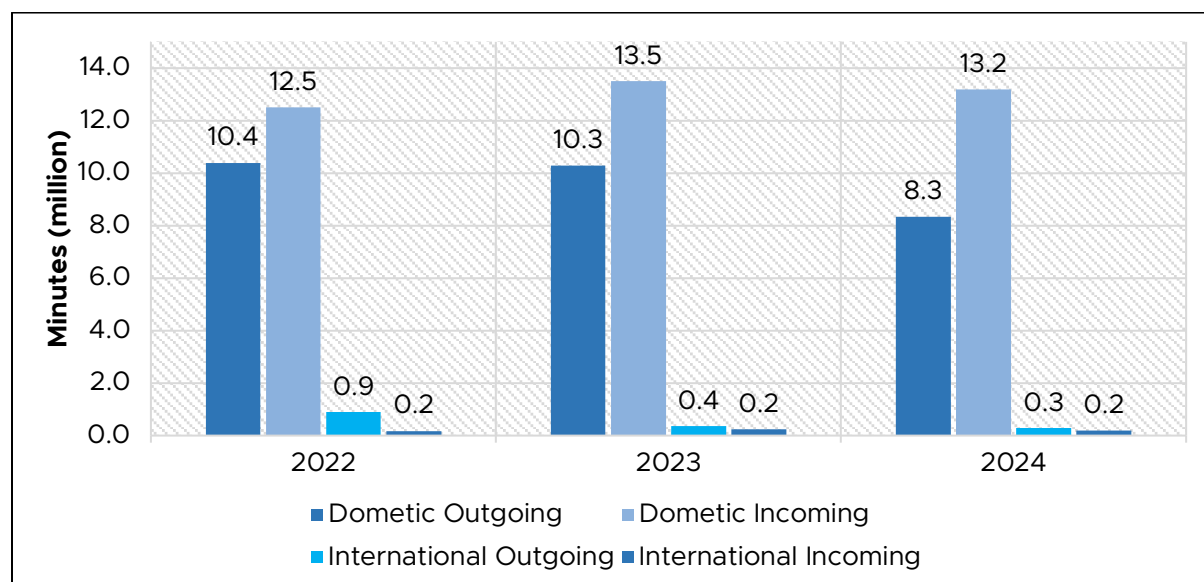


Source: Operator submissions

4.2.2. PSTN Traffic

Traffic volumes for both domestic and international fixed telephone calls declined significantly between 2023 and 2024, reflecting the ongoing shift away from fixed-line services. Total domestic outgoing traffic decreased by 18.9 percent, dropping from 10.3 million minutes in 2023 to 8.3 million minutes in 2024. Domestic call traffic to PSTN lines also declined slightly, falling by 2.3 percent from 13.5 million minutes in 2023 to 13.2 million minutes in 2024. The most substantial decline was observed in international fixed-line call traffic. Outgoing international traffic dropped by 20.2 percent, from 360,000 minutes in 2023 to 287,000 minutes in 2024. Similarly, incoming international traffic declined by 17.1 percent, from 231,000 minutes to 192,000 minutes over the same period. The decline in PSTN call volumes is largely driven by the growing adoption of Voice over Internet Protocol (VoIP) services among businesses and individuals, offering a cheaper and more efficient alternative to traditional fixed-line calls.

Figure 22: Trends in PSTN Traffic, 2022 – 2024

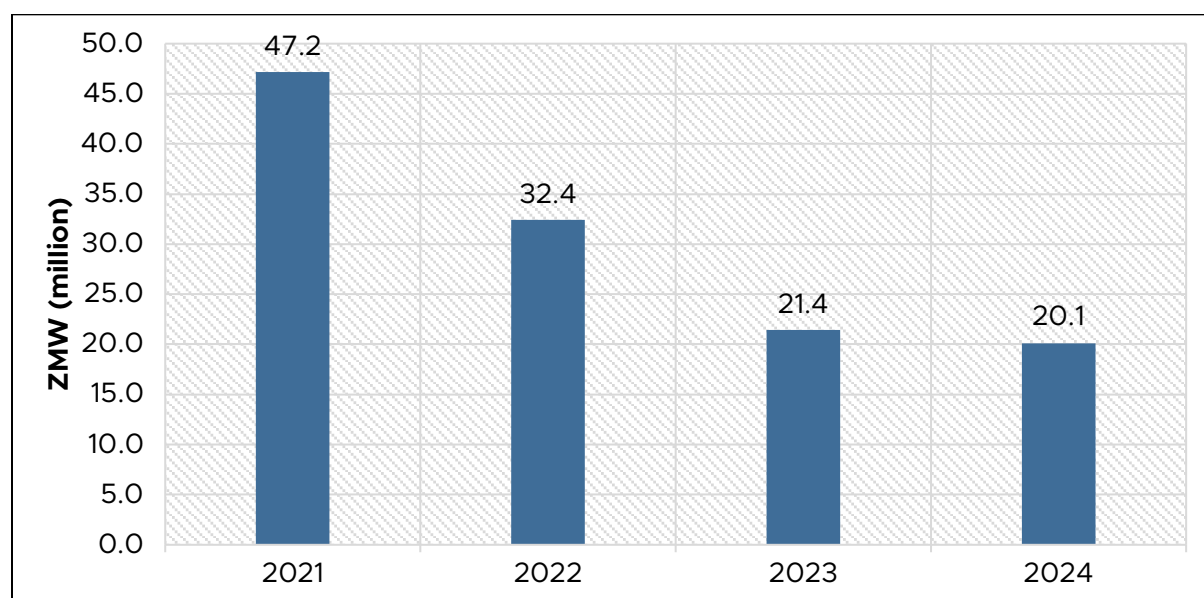


Source: Operator submissions

4.2.3. PSTN Revenue

The fixed telephone sector's revenue continued its downward trajectory, with earnings declining by 6.1 percent year-on-year, from ZMW 21.4 million in 2023 to ZMW 20.1 million in 2024. This decline in revenue is directly linked to the fall in fixed-line subscriptions and call traffic, as consumers and businesses shift towards mobile and digital communication solutions. Despite this decline, corporate entities remain the primary users of fixed telephony services, primarily due to their need for dedicated voice communication lines and reliability in office environments.

Figure 23: Trends in PSTN Revenues, 2021 – 2024



Source: Operator submissions

4.3. Internet Services

4.3.1. Fixed and Mobile Internet Subscription

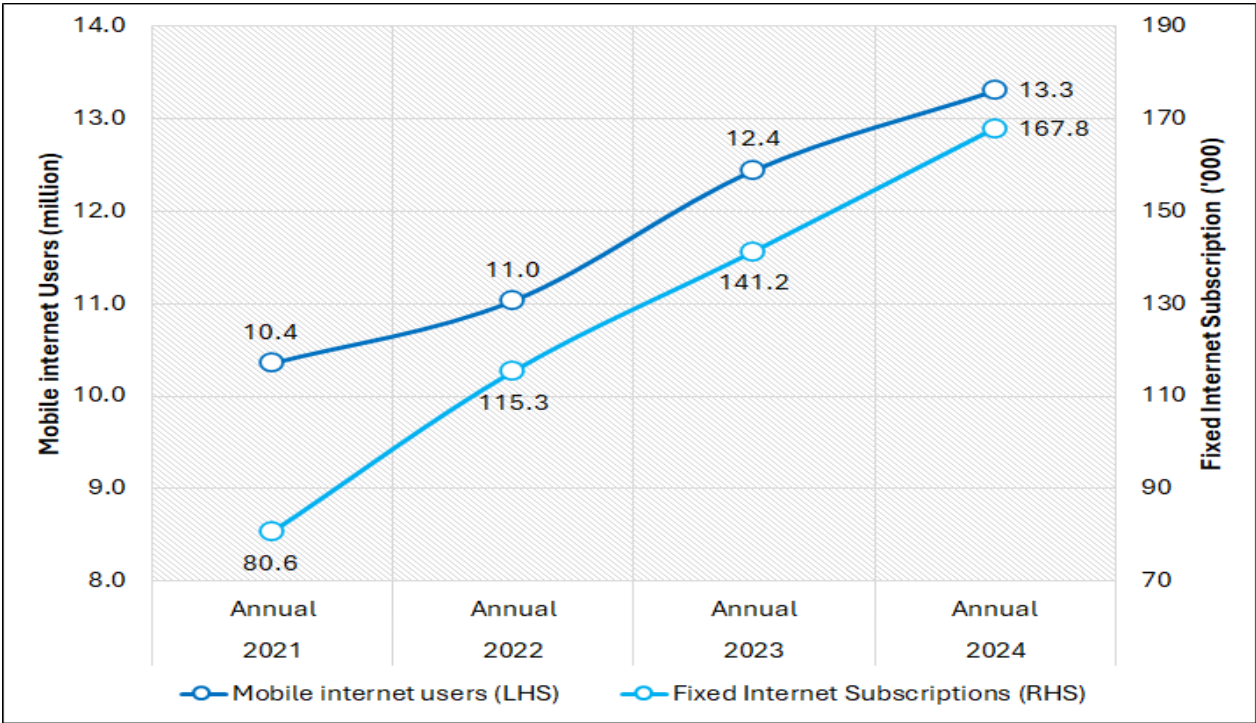
Zambia's overall Internet subscriptions grew by 7.0 percent in 2024, rising from 12.6 million in 2023 to 13.5 million. This growth increased the Internet penetration rate from 64.2 to 67.3 per 100 inhabitants, reflecting steady progress toward a more digitally connected society. Mobile Internet remained the dominant access method, accounting for over 99 percent of total subscriptions. Specifically, fixed Internet subscriptions increased by 18.6 percent, reaching 167,770 in 2024, while mobile Internet subscriptions grew by 6.9 percent to 13.3 million in the same period (see Figure 24). The expansion of network coverage and affordability of digital services continue to drive Internet adoption. Mobile Internet subscriptions are expected to rise further, supported by ongoing investments in 3G, 4G, and 5G networks. These efforts include upgrading 2G sites, deploying new infrastructure, and promoting mobile broadband adoption through ICT device distribution in schools and other priority sectors.

Despite its reliability and high capacity, fixed Internet remains primarily used by corporate clients due to its high costs, which limit household adoption. As a result, most individuals prefer mobile Internet, which offers greater affordability and

accessibility. Additionally, as mobile service providers expand their enterprise solutions, some businesses are shifting between mobile and fixed Internet services.

The mobile Internet market experienced shifts in 2024, with some providers expanding their reach while others saw declines. A new entrant captured a small but notable share, indicating early market penetration and potential for future growth. Although fixed Internet providers offer services through fixed modems, mobile network operators (MNOs) continue to dominate due to their extensive subscriber bases and widespread coverage, making mobile Internet the preferred option for most users. Meanwhile, the fixed Internet market remained highly concentrated, with the top five providers accounting for 96 percent of total subscriptions despite the presence of over 12 active ISPs. While some providers expanded their market share due to growing demand for home and enterprise broadband, others experienced declines. Despite the rising demand for broadband, fixed Internet services continue to be driven mainly by corporate clients, while mobile Internet remains the preferred choice for many households.

Figure 24: Trends in Internet Subscription; 2021 to 2024



Source: Operator submissions

The price of a data only monthly bundle and that of voice and data bundle for Zambia at as December 2024 was benchmarked against similar packages within the region. The data-only bundle, measured using a 2GB monthly data bundle, was estimated at \$ 2.03 while the voice and data bundle, measured using a bundle with at least 2GB of data, 70 SMS and 150 all-net minutes, was estimated at \$ 5.47. This is translated into a value of 1.9 percent for a data-only bundle as a ratio of Gross National Income (GNI) per capita while a voice and data bundle was estimated at 5 percent of GNI per capita. The country was observed to have competitive pricing on mobile data services as it attained the affordability target of the UN broadband Commission of 2 percent of GNI per capita.

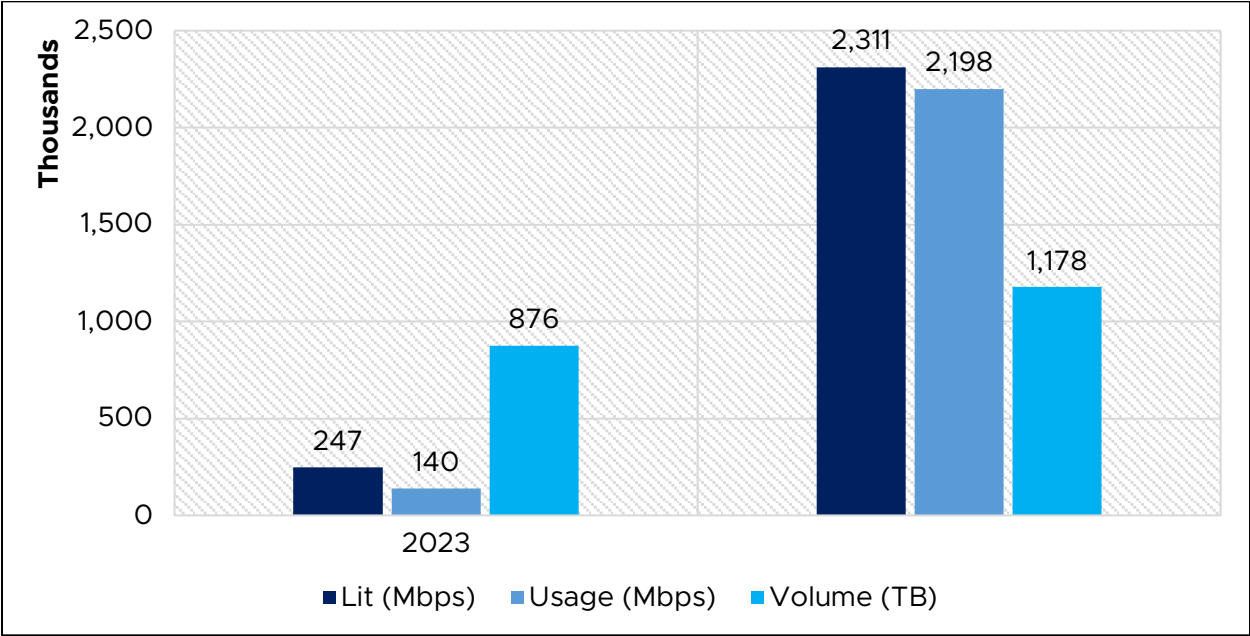
Table 4: Regional Benchmarking of Data and Voice Bundles

Country Name	Data bundle as ratio of GNI	Rank	Price of Data and Voice consumption Bundle as percent of GNI per capita	Rank
Angola	1.24 percent	3	2.23 percent	2
Botswana	2.56 percent	14	2.00 percent	1
Kenya	1.11 percent	1	2.29 percent	3
Lesotho	5.31 percent	9	16.61 percent	14
Madagascar	19.77 percent	11	16.07 percent	12
Mozambique	11.96 percent	8	16.28 percent	13
Namibia	3.67 percent	12	3.29 percent	4
Nigeria	8.38 percent	13	3.97 percent	6
Rwanda	2.97 percent	5	8.51 percent	11
South Africa	0.44 percent	4	7.79 percent	10
Swaziland	2.22 percent	10	3.77 percent	5
Tanzania	4.13 percent	7	5.65 percent	8
Uganda	3.39 percent	6	7.42 percent	9
Zambia	1.89 percent	2	5.09 percent	7

4.3.2. Bandwidth Capacity and Utilisation

The total bandwidth capacity contracted by mobile network operators surged to 2.3 terabits per second (Tbps) in 2024, compared to 247 gigabits per second (Gbps) in 2023. Utilization efficiency increased sharply, with 95.1 percent of contracted capacity being utilized, compared to 56.6 percent in 2023. Total data volume generated by MNOs rose by 34.5 percent, reaching 1.2 exabytes (EB), reflecting a significant increase in Internet usage. This improvement in bandwidth utilization suggests that operators are effectively optimizing network resources to accommodate rising demand for high-speed data services.

Figure 25: Bandwidth capacity and utilization by MNO, 2023 to 2024



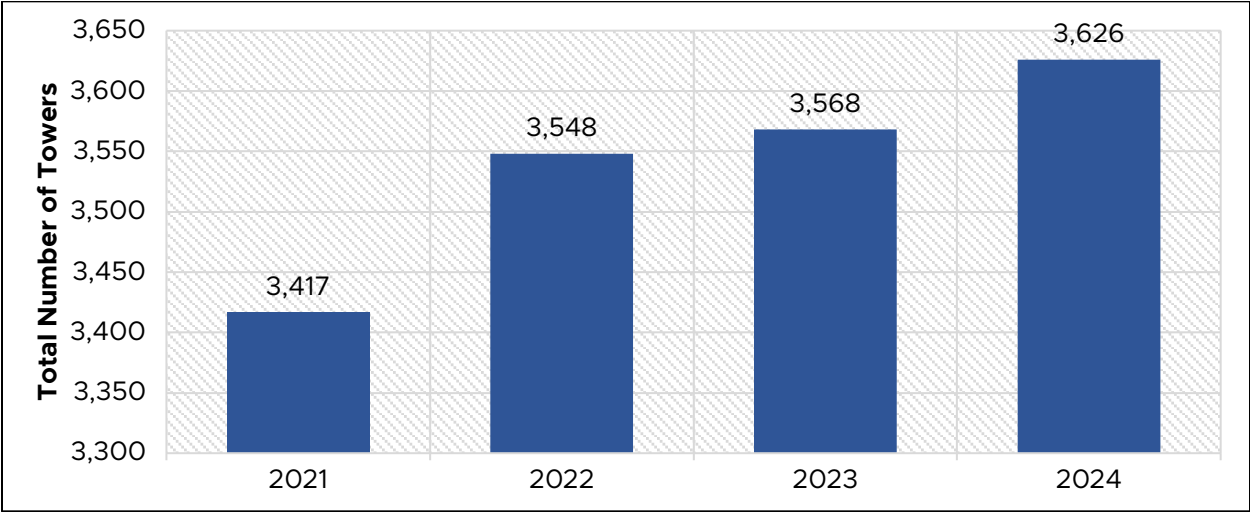
Source: Operator submissions

4.4. Passive Infrastructure

4.4.1. Ownership of Tower Infrastructure

The total number of telecommunications towers in Zambia grew by 1.6 percent in 2024, increasing from 3,568 to 3,626 towers, with 58 new installations. Nearly half of these were deployed in underserved areas under the Universal Access Project (UAP). Other infrastructure providers also expanded their networks, though at varying scales. Despite this growth, the modest pace of expansion highlights the need for greater investment in mobile infrastructure to meet the rising demand for connectivity, particularly in rural and underserved regions.

Figure 26: Trends of Tower Infrastructure: 2021 to 2024

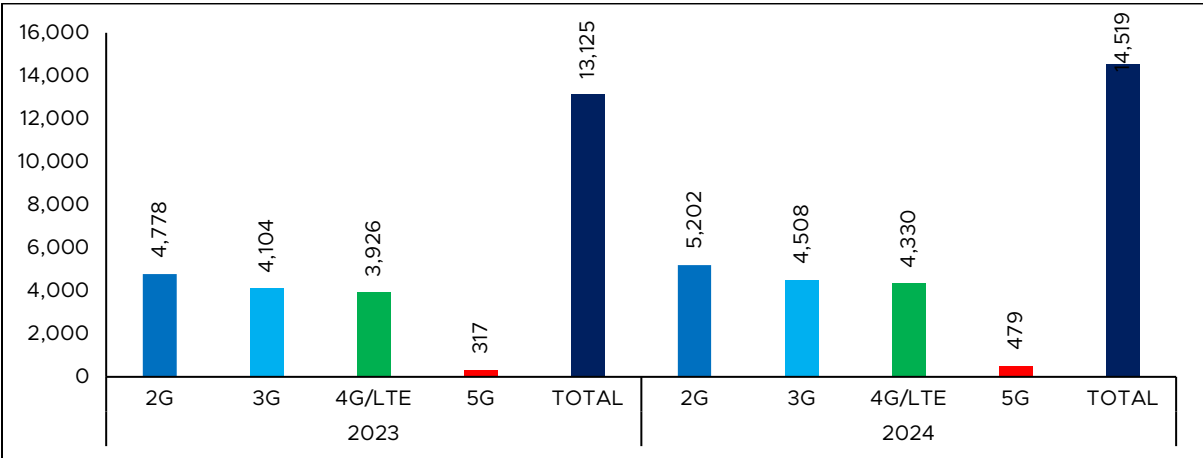


Source: Operator submissions

4.4.2. Telecommunication Sites

The total number of telecommunications sites in Zambia increased by 10.6 percent in 2024, rising from 13,125 to 14,519. This growth was driven by network expansions across multiple technologies. Notably, 5G sites saw the highest growth at 51.1 percent, reflecting ongoing investments in high-speed connectivity. Coverage infrastructure for basic mobile services also expanded, with a 2G site increase of 8.9 percent. Meanwhile, 3G and 4G sites grew by 9.8 percent and 10.3 percent, respectively, as part of efforts to enhance service quality and data accessibility.

Figure 27: Trends in Telecommunication Sites 2023 - 2024



Source: Operator Submissions

4.5. Data Storage Facilities

4.5.1. Capacity and Utilisation of Data Storage Facilities

In 2024, Zambia's data center and cloud services sector continued to expand, driven by increasing demand for Infrastructure-as-a-Service (IaaS) and Software-as-a-Service (SaaS) solutions. Service providers offered colocation racks, domain hosting, virtual servers, cloud storage, dedicated Internet access, and security services. Key performance indicators reflected significant growth in data storage capacity and bandwidth usage, with higher utilization rates across providers. Despite this expansion, the total number of customers declined, suggesting a shift toward fewer but higher-value enterprise clients with larger storage and service demands.

Table 5: Data Centre service providers' performance statistics, 2023 to 2024

PERIOD	Physical Racks		Own Data Storage		Bandwidth Usage		Custo mers	Reven ue
	Capacity	Usage	Capacit y	Usage	Capac ity	Usage	Numb er	ZMW' 000
2023	221	56 percent	453.26 PB	1.58 PB	433 Mbps	28 percen t	5,696	72,50 6.40
2024	340	63 percent	463.93 PB	168.21 PB	496.7 7 PB	50 percen t	1,230	88,244 .20
YoY Change	53.8	12.3	2.4	10,558.5	14.8	77.3	-78.4	21.7

Source: Operator submissions

4.5.2. Financial Performance of Data Centre Infrastructure Providers

In 2024, cloud service providers recorded strong financial growth, with total revenue rising by 21.7 percent year-on-year from ZMW 72.5 million in 2023 to ZMW 88.2 million. This expansion was driven by increased enterprise adoption of cloud computing, particularly in finance, e-commerce, and government digital transformation initiatives. The sustained growth in demand for cloud solutions underscores the sector's expanding role in Zambia's digital economy.

4.6. Transmission Network Market

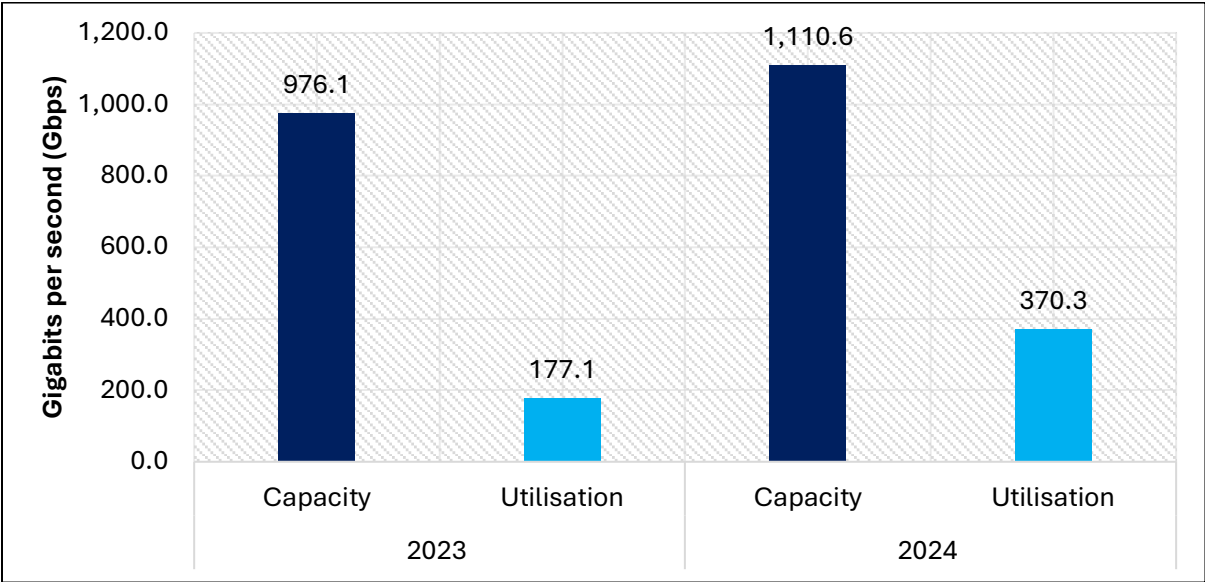
4.6.1. Network Capacity and Utilization in the Transmission Network Market

The transmission network market experienced significant growth in 2024, with total available network capacity among wholesale carriers increasing by 13.8 percent to 1.1 terabits per second (Tbps), up from 1.0 Tbps in 2023. Capacity utilization nearly doubled, rising from 177.1 Gbps to 370.3 Gbps, reflecting increasing demand for high-speed, stable connectivity.

This surge was primarily driven by higher utilization rates across major wholesale network providers. While some operators expanded their available capacity significantly, others saw a sharp rise in utilization despite maintaining the same capacity levels. Overall, wholesale carriers accounted for the majority of both available capacity and usage, emphasizing their critical role in supporting internet service providers (ISPs), corporate enterprises, and government infrastructure projects.

The growing demand for transmission networks is largely attributed to increased broadband adoption, rising enterprise data needs, and expanding digital infrastructure initiatives. These trends highlight the sector’s strategic importance in facilitating national connectivity and supporting digital transformation efforts across various sectors.

Figure 28: Trends in Network Transmission Capacity and Utilization, 2023 to 2024



Source: Operator submissions

4.6.2. Transmission Infrastructure

Zambia’s fibre-optic backbone network expanded significantly in 2024, with the total national fibre network length increasing by 22.9 percent from 31,915 km in 2023 to 39,232 km. This growth was driven by major investments in backbone and metro fibre networks, strengthening wholesale transmission capacity and international connectivity. Additionally, a 700 km open-access metro fibre project was completed in ten cities, further enhancing urban broadband infrastructure. The country’s total installed capacity rose by 34.7 percent to 2.2 Tbps, while used capacity grew by 2.4 percent to 993.2 Gbps. These developments reflect the rising demand for high-speed, reliable connectivity, particularly among corporate enterprises, cloud service providers, and SMEs seeking enhanced digital solutions.

Table 6: Wholesale Carriers Fibre Network span (2024)

Period	Fibre Network Length (Km)	Installed Capacity (Gbps)	Used Capacity (Gbps)
2024 TOTAL	39,231.8	2,196.8	993.2
2023 TOTAL	31,915.0	1,630.8	970.3
YoY Change	22.9 percent	34.7 percent	2.4 percent

Source: Operator submissions

4.7. Wholesale Transmission Infrastructure

4.7.1. Airtel Networks Backbone Network Infrastructure

Airtel's fibre-optic backbone spans 6,221 km nationwide, forming five interconnected fibre rings with a 100 Gbps capacity. The network covers all ten provinces and connects to eight international gateways, linking to undersea cables and global backbone networks. Additionally, it integrates with metro fibre networks in Livingstone, Lusaka, Kabwe, Ndola, Solwezi, Kitwe, Mufulira, and Chililabombwe, covering 1,455 km with 898 Points of Presence (POPs). Airtel plans to further expand its national and international fibre rings to improve network redundancy and connectivity reliability.

Figure 29: Airtel Networks Backbone Fibre Network Infrastructure (2024)

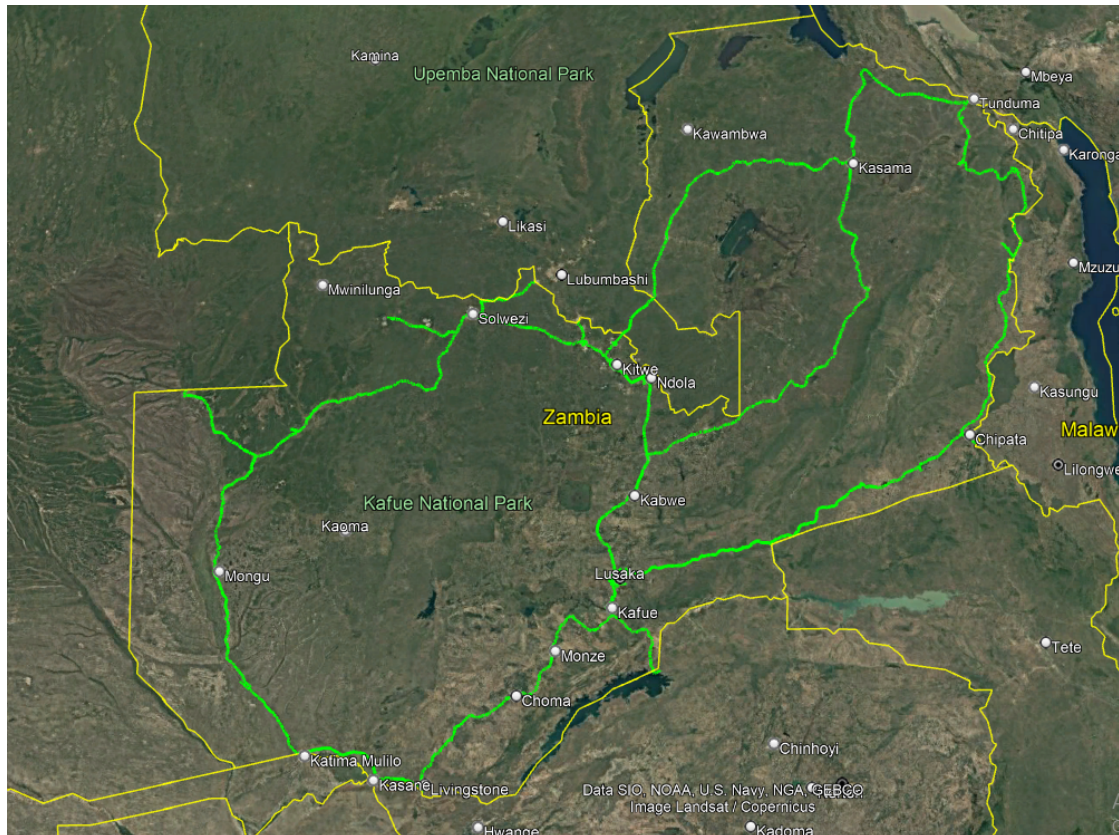


Source: Operator submissions

4.7.2. Bayobab Backbone Fibre Network Map

Bayobab's 7,152 km optic fibre backbone network spans nationwide and continues to expand both locally and internationally. Its Internet traffic transits through Botswana, DRC, Namibia, Tanzania, and Zimbabwe, enhancing cross-border connectivity. Additionally, Bayobab purchases Internet transit and pays for peering in parts of its network to optimize performance.

Figure 30: Bayobab Backbone Fibre Network (2024)

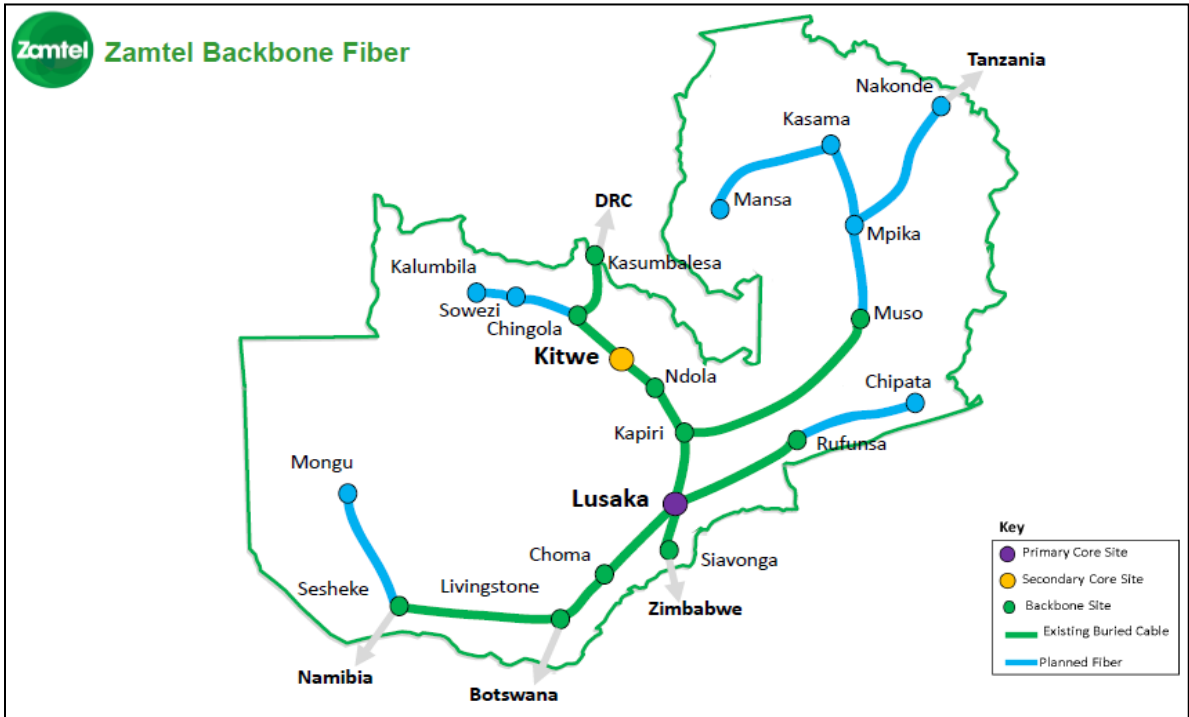


Source: Operator submissions

4.7.3. Zamtel Backbone Network Map

In 2024, Zamtel’s optic fibre backbone network spanned 1,876 km nationwide, primarily along the line of rail, with planned expansions into additional districts. The network connects to international fibre routes through Botswana, Tanzania, Namibia, and two other countries, providing access to undersea fibre-optic cables and enhancing network redundancy.

Figure 31: Zamtel Fibre Back bone infrastructure (2024)

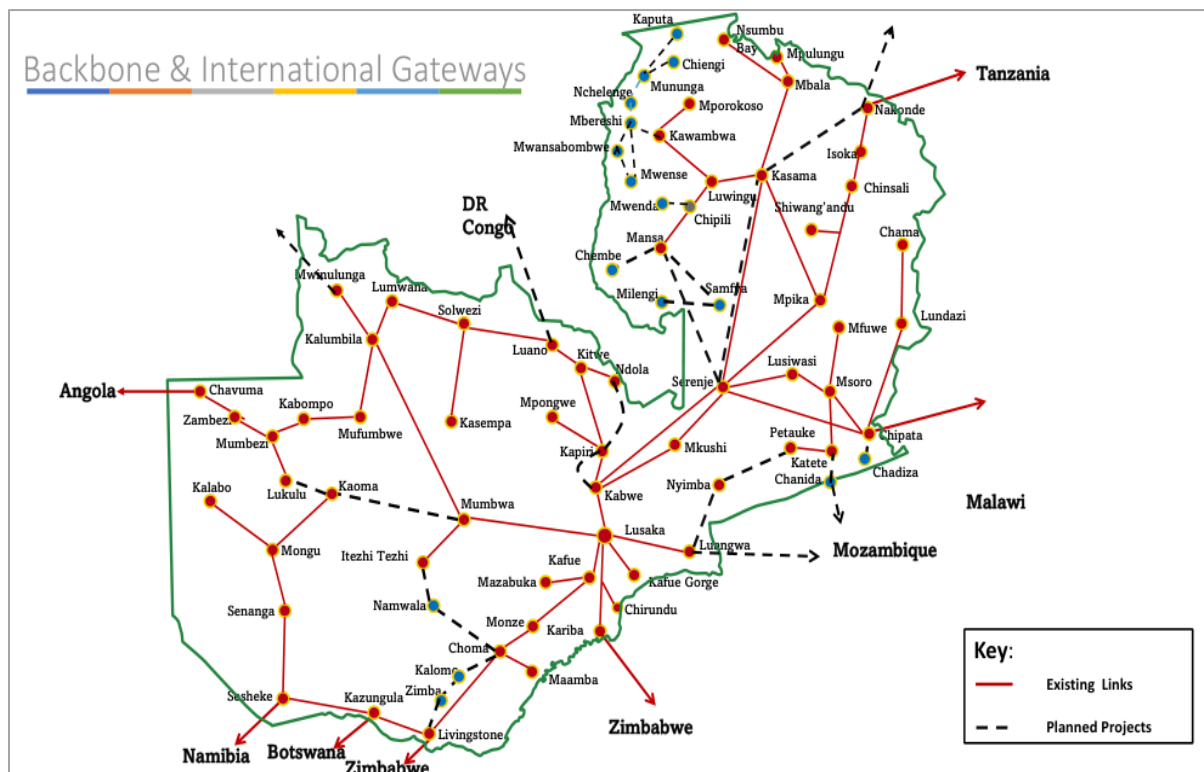


Source: Operator submissions

4.7.4. Fibrecom backbone Infrastructure Network Map

Fibrecom has deployed over 18,000 km of optic fibre cables across Zambia, covering all provincial centers with a 4.0 TB transmission capacity. The network continues to expand alongside power grid projects, with plans for national fibre rings to enhance redundancy. It currently features six international gateways connecting to undersea fibre networks via Angola, Namibia, Botswana, Zimbabwe, Malawi, and Tanzania, with additional gateways planned through Mozambique, DRC, and Tanzania.

Figure 32: Fibrecom Backbone Fibre Network (2024)

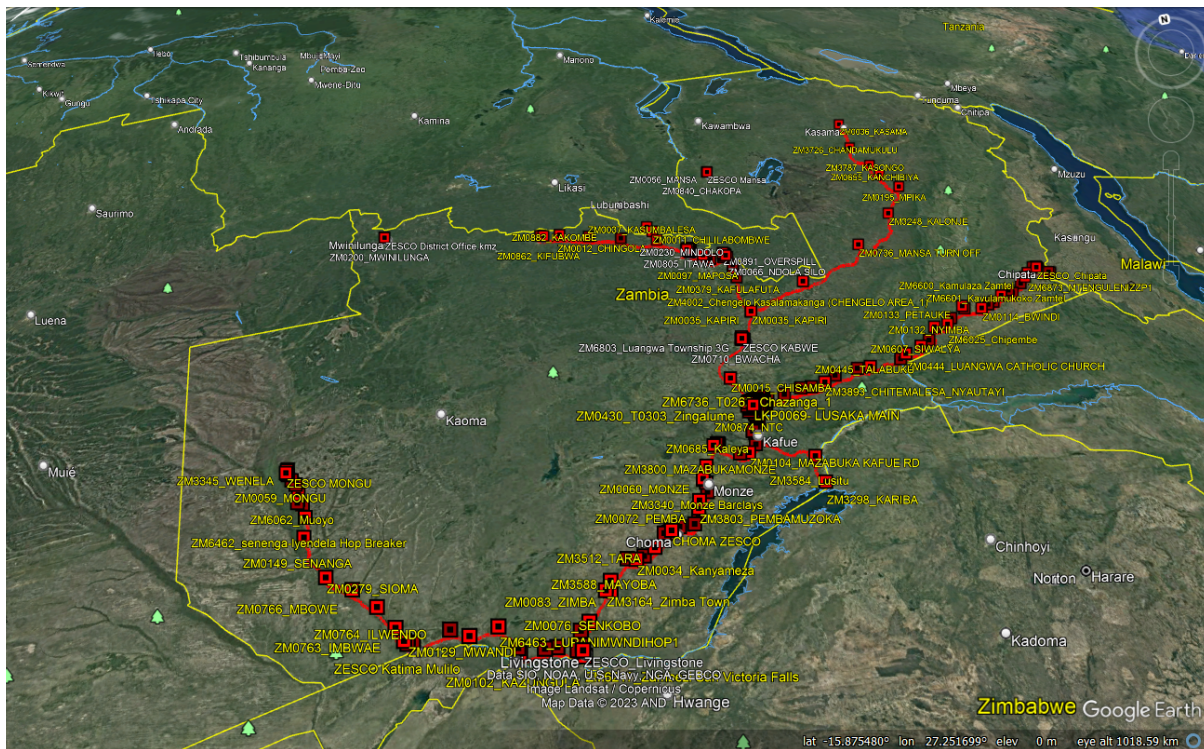


Source: Operator submissions

4.7.5. Paratus Fibre Network Map

Paratus, in partnership with Meta, completed the rollout of a 10 Gbps, 880 km open-access fibre network across ten cities, including Lusaka, Kitwe, Ndola, Livingstone, Chingola, Chililabombwe, Solwezi, Chambishi, Kabwe, and Mufulira. This expansion enhances high-speed, secure connectivity in underserved areas while increasing Paratus' total fibre infrastructure to 880 km. The network supports reliable last-mile access for consumers and wholesale services for MNOs and fixed ISPs.

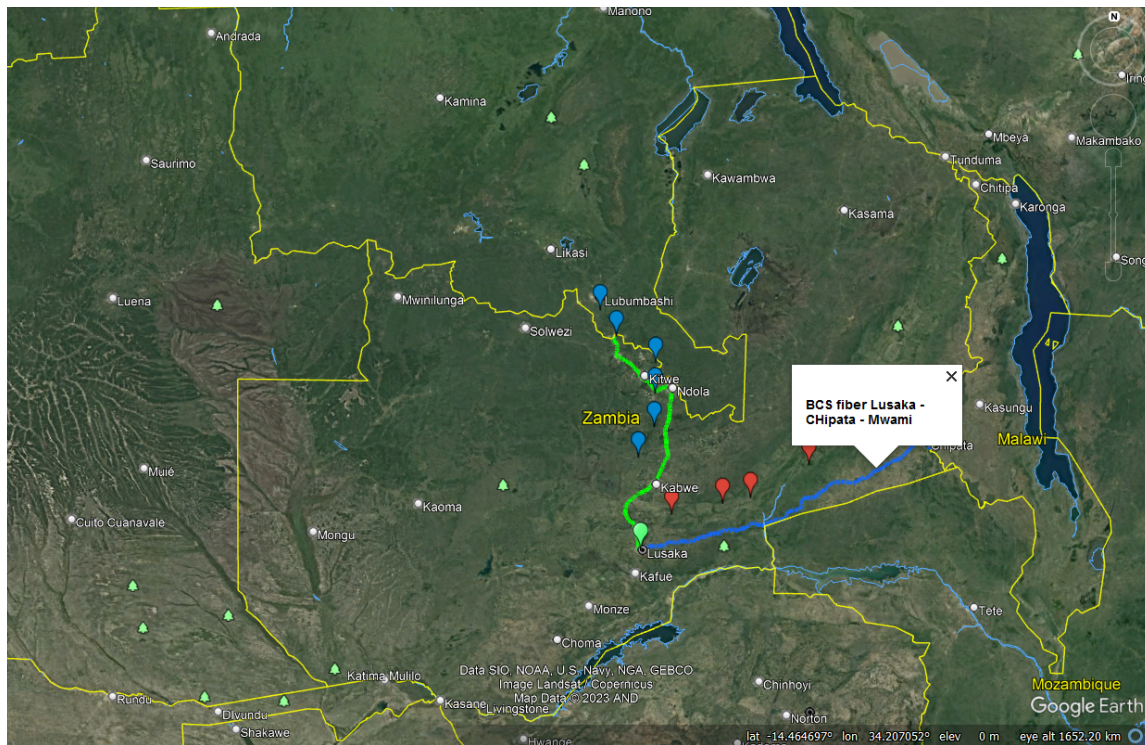
Figure 33: Paratus Backbone Fibre Network (2024)



4.7.6. BCS Fibre Network Map

In 2024, BCS deployed 1,351.5 km of optic fibre backbone network across Zambia. Domestically, the network extends through the Eastern, Copperbelt, North-Western, and Central regions, covering multiple districts within these areas. Additionally, it is connected to international undersea optic fibre networks via a gateway in Malawi, enhancing cross-border connectivity.

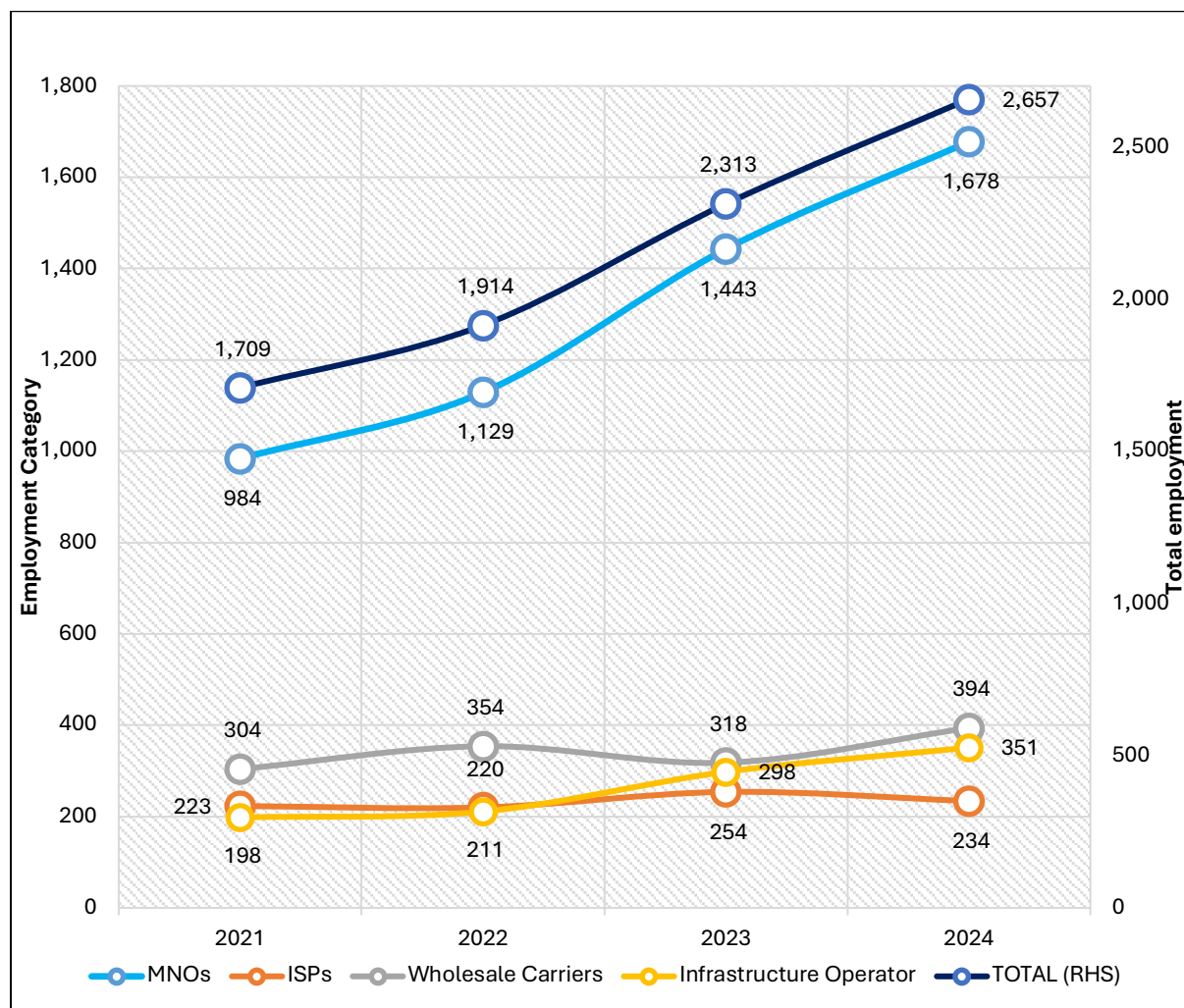
Figure 34: BCS Backbone Fibre Network (2024)



4.8. Employment in the ICT Sector

Overall employment among licensees increased in 2024 compared to 2023. The total number of people employed in Zambia's ICT sector grew by 14.9 percent in 2024, increasing from 2,313 in 2023 to 2,657. Wholesale carriers saw the highest employment growth, increasing by 23.9 percent. The infrastructure subsector recorded a more modest increase of 17.8 percent. Meanwhile, Mobile Network Operators (MNOs) increased their employment numbers by 16.3 percent, and remained the largest employers, accounting for 63.3 percent of total ICT sector employment. The rising demand for skilled ICT professionals is linked to the expansion of 4G and 5G networks, growth in cloud services, and the increasing monetization of digital platforms.

Figure 35: Employment in the ICT Sector, 2021 to 2024



Source: Operator submissions

5.0 **SECTORIAL POLICY AND REGULATORY REVIEW**

The Authority undertakes periodic assessments on the policy and regulatory environment in the ICT sector that are aimed at identifying any positive enablers to the operations of the players in the sector as well as establishing any existing or emerging constraints in the business environment that could limit growth. The assessments are based on qualitative interviews with all the operators on the market. As part of the assessments, operators are also engaged to provide proposals on how the identified challenges could be addressed as well as how the general business environment could be enhanced. In December 2024, the Authority undertook the annual sectorial policy and regulatory review which would inform part of its focus in the subsequent year. The sentiments on the business environment from the industry are outlined in the ensuing sections.

5.1. Positive Factors Influencing Growth on the Market

- a) **Expanded Product Portfolio;** given the growing demand for ICT services in the country as well as the increased competition intensity arising from the increased number of service providers, operators in the sector expanded their product portfolio to widen their revenue streams as well as expand their market. Some of the noted market opportunities during the year included the provision of leased lines, colocation services, transit services, Software-Defined Wide Area Network (SD-WAN), corporate and home solutions and Virtual Private Network (VPNs) etc. in a bid to address consumer demands. Similarly, some operators have increased their interconnection points to neighboring countries to increase capacity and improve their quality of service. Consequently, these operators have been able to expand their products portfolio thereby replacing other revenue streams that may have shrunk.
- b) **Improvements in Regulatory processes;** most operators noted a positive response from the Authority and support from the Ministry of Technology and Science (MOTS) during the year that helped them through operational challenges such as loadshedding. Specifically, the Authority was noted to be responsive to operator concerns by approving proposed tariff changes when operational costs increased.

- c) **Digitalization of Government services;** operators observed a notable increase in the demand for electronic communication services which were partly attributed to the increasing digitalization of government services. With over 300 government services available on the Government Service Bus (GBS), the need for and usage of digital platforms amongst corporates and individuals has notably increased. Similarly, other key services such as tax or social security compliance which are also available online have enhanced usage of digital platforms thereby increasing business opportunities for ICT operators. It was further noted that Zambia Revenue Authority (ZRA) had provided a platform for businesses to appoint courier companies to clear shipment on their behalf, thereby increasing business opportunities for courier companies as well as their demand for Internet services.
- d) **Phasing out of scratch cards;** Mobile Network Operators (MNO) noted the impact of the phasing out of scratch cards as beneficial to their operations during the year. Notably, the phasing out, which was completed during 2024, reduced the operational costs for MNOs, allowing the operators to reallocate these resources to other productive activities. Further, the phasing out of scratch cards has allowed for the efficiency in service provision and allowed for a digital footprint of these activities.
- e) **Infrastructure investment:** the infrastructure investment made in the recent past has resulted in increased access to electronic communication services. The sector observed increases in telecommunication infrastructure by both public and private entities resulting in an increase in mobile cellular geographical coverage to 77 percent and population coverage to 95.7 percent at end of 2024. There has also been increased investments in advanced technologies such as 5G which accounted for 3 percent of total telecommunication sites at the end of December 2024. This has resulted in increased access and demand for telecommunication services as well as improved quality of services. Consequently, these investments have increased opportunities for onboarding new customers onto operator networks and usage demand amongst existing customers.
- f) **Development of e-commerce;** ICT operators observed an increase in e-commerce activities in the country, which have consequently increased the

demand for stable Internet services. Specifically, the increased use of e-commerce, gig platforms and fintech has increased the need for reliable Internet services as well as courier services. Additionally, the reduction in the cost of transportation services due to the increased supply of motor bikes and bicycles has reduced the cost of courier services, making it accessible to a wider customer base. Consequently, the increased prominence of e-commerce in urban areas, has amplified business opportunities for ICT and courier operators.

5.2.Constraints to Growth on the Market

- a) **High Tax Incidence in the ICT sector:** despite the reduction of corporate taxes for the ICT sector in 2023, operators were of the view that the sector was still characterized by high taxes that curtailed growth within the sector. Notably, corporate taxes in the sector are currently set at 35 percent, 5 percent points above that of other sectors whilst excise duty on electronic communication services are set at 17.5 percent. The relatively higher corporate taxes have reduced the scope for new investments and re-investments in the sector. Similarly, high consumption taxes essentially reduce the affordability of ICT services and can slow down the country's progress in adoption and usage of ICT services.
- b) **Zesco Load Management:** following the 2023/24 drought, the country's power utility company introduced power rationing schedules in March of 2024 that extended up to three (3) hours of electricity access a day. This directly impacted on the operations in the ICT sector negatively as most telecommunication infrastructure required energy to function. Consequently, there was a decline in network availability as well as increase in the cost of production as operators had to switch to alternative sources of energy to keep their apparatus functioning.
- c) **High Energy costs:** the depreciation of the local currency as well as volatility in international oil prices during the year resulted in high fuel pump prices. Furthermore, the monthly revisions of fuel prices were reported to have made project planning difficult for operators as prices changed regularly. Further,

given the increased reliance on generators amongst operators, the increased cost of this key commodity translated into increased operational costs.

- d) **Challenges in the Macroeconomic Fundamentals:** there was a notable decline in the performance of most macroeconomic variables during the review period as a result of supply constraints in the real sector. Of particular interest was the increase in the inflation rate which reached a 10-year period high of 16.7 percent in December 2024 and depreciation of the local currency to a peak of ZMW/USD 27.8. The increase in inflation rate and depreciation of the local currency translated into an increased cost of doing business.
- e) **Low Smartphone Penetration:** low smartphone penetration rate, reported at about 18.6 percent of the population in 2022, was observed as a hindrance to further adoption of broadband services. Given that one of the main hindrances to usage of Internet services is the cost of an Internet enabled device and that about 99 percent of Internet users rely on mobile broadband services, smartphone accessibility is of crucial importance to enhancing Internet usage. The continued low smartphone adoption consequently slowed down the demand for Internet services in the country.
- f) **Impact of the Mobile Money Levy and Extension of Excise Duty on Airtime:** The mobile money levy Act no. 25 of 2024 brought in a levy on mobile money transactions where a progressive tax is applied on every mobile money transactions. The implementation of this bill was perceived to have affected usage of money mobile payments as it increased the cost of using these platforms. Additionally, the revision of definition of airtime that enabled the extension of excise duty on fixed Internet services, resulted in reduced adoption of Internet services as affordability declined.

5.3.Proposals for Enhancing the Business Environment

- a) **Revise ICT sector tax Policy;** the operators continued to express concern over the high tax burden in the sector which was perceived to be reducing uptake of ICT services as well as reinvestment opportunities in the sector. Specifically, it is proposed that the corporate taxes in the sector are aligned to that of other sectors at 30 percent to enhance investment and innovation in the sector. It is

also proposed that excise duty on electronic communications services as well as mobile money levies are removed to enhance usage of ICT services and align with government agenda of digital transformation. Operators further proposed reductions on customs duties to enhance infrastructure investments in the ICT sector.

- b) **Enhance compliance in the postal sector:** most postal and courier operators requested that compliance in the sector is enhanced to curb operations by unlicensed operators. This is because there has been an increase in operations by unlicensed couriers thereby robbing licensed operators of business opportunities. Furthermore, the risk to consumers using courier services increased as there was limited liability on parcel management by unlicensed courier companies.
- c) **Standard application procedures across regulators;** the operators observed that they were expected to register or apply for several regulatory or statutory requirements. Notably, operators may require approvals or certifications from the Authority, Zambia Environmental Management Agency (ZEMA), Patents and Company Registration Agency (PACRA), local council, Civil Aviation Authority (CAA) etc. It is proposed that the required applications are made available through a single window to ease the regulatory burden on the operators. There is also a call for an improved licensing framework to encourage the development of innovative products.
- d) **Reconsider the introduction of TPIN on KYC rules;** following the enactment of the Income Tax (Amendment) Act No. 22 of 2024 which requires Mobile Network Operators (MNOs) and Internet Service Providers (ISPs) to integrate the Taxpayer Identification Number (TPIN) requirement into their Know Your Customer (KYC) processes, MNOs are of the view that this move will reduce compliance levels amongst consumers. It is proposed that this Act is revoked as the implementation of TPIN requirements is expected to discourage consumers from engaging in the registration process thereby resorting to acquisition of unregistered sim cards or avoidance of use of this technology all together.

- e) **Enhance digital skills;** there was a call by operators for government to put in place initiatives that will encourage assumption of digital skills amongst consumers. Improving digital skills in the country is expected to improve the adoption of digital technologies as well as reduce the incidence of online risks. Furthermore, it was observed that there was an increase in the demand for advanced digital skills amongst operators to meet the growing demand for various products and services. It is proposed that the number of professionals with advanced digital skills is increased.
- f) **Enhance Implementation of Cyber Security and Cyber Crimes Act and the Data Protection Act:** operators are of the view that the full implementation of the Cyber Security and Cyber Security Act and the Data Protection Act will enhance the business processes of operators in the ICT sector by enhancing safety on digital platforms. Furthermore, the implementation of these Acts is expected to directly affect the business of selected operators as it will increase business opportunities.

6.0 OUTLOOK FOR THE ICT SECTOR IN 2025

The outlook for the year 2025 based on the trends noted on the market as well as sentiments gathered from operators are summarized below:

- a) **Growth in ICT Uptake and Usage:** the number of subscribers for mobile network and fixed network services continued on an upward trajectory in 2024 despite the macroeconomic challenges in the country. This increase in the adoption of ICT services has been attributed to increased access to ICT services and as well as improvements in product diversity and innovation tailored to the unique needs of the consumers. It is projected that the number of mobile cellular subscribers is expected to increase to 24.5 million at the end of 2025 from 23.2 million subscriptions at the end of 2024 representing an annual growth rate of 5 percent. Further, the number of mobile cellular subscriptions is expected to increase to 25.7 million subscriptions at the end of 2026 and 26.9 million subscriptions at the end of 2027. The increase in the number of subscriptions is expected to translate into higher Internet usage and mobile cellular traffic resulting in an overall growth of the ICT sector.
- b) **Investment in Infrastructure:** there has been a notable increase in ICT infrastructure investments in the country which is expected to encourage further adoption of ICT products and services. Notably, there has been significant growth in the number of telecommunication sites, the expansion of optic fiber networks, and the establishment of additional international connectivity routes. These strategic investments are expected to continue, aimed at enhancing network coverage and capacity, which are essential for improving the quality of service by both new and existing operators. Further, the Universal Access fund will continue to invest in unserved and underserved areas to extend connectivity.
- c) **Exemptions on Excise Duty:** Statutory Instrument (SI) no. 91 of 2024 for the Customs and Excise Act which suspends excise duty on Internet services to public education institutions and public higher education institutions is expected to increase the usage of ICT services. Suspension of excise duty entails a proportional reduction in the cost of Internet services by 17.5 percent thereby increasing the affordability of these services.

Consequently, it is expected that the demand for ICT services amongst the exempted institutions will increase in the short term. However, there may be some challenges regarding the effective administration of the incentive.

- d) **Product Portfolio:** Notable product innovations were observed amongst ICT operators as they developed products tailored to consumption trends, to increase their revenues as well as to remain competitive. The development of these products is expected to continue and encourage further adoption and usage of ICT services amongst consumers. The role of Satellite technologies is expected to increasingly play a more prominent role in the sector with new developments related to direct-to-cell technology that provide phone coverage from space already under testing globally.
- e) **Positive Macro Economic Outlook:** the Ministry of Finance and National Planning along with the International Monetary Fund (IMF) have projected GDP growth rate at 6.8 percent in 2025. This follows an estimated 2.5 percent GDP growth rate in 2024 resulting from the effects of the 2023/24 drought. An above average rainfall pattern is projected in the 2024/25 season which could lead to lower food prices and reduced load shedding which in turn are anticipated to slow down inflation, support the local currency and reduce the overall cost of doing business. Furthermore, mining output is expected to increase as new investments commence operations and expansions from existing players which could further support growth and the local currency. Consequently, the projected increase in economic activity is expected to increase demand for ICT products and services during the ensuing period.



ZICTA

Head Office

Stand No. 4909, Corner of Independence
and United Nations Avenues
P.O. Box 36871, Lusaka—Zambia
info@zicta.zm, www.zicta.zm
Toll Free: 7070
Tel: +260 211 378200

Copperbelt

Plot 2735, Liberia Road
Trade Fair Grounds
Ndola—Zambia
Tel: +260 212 651032

Muchinga

Plot 888, Nkakula Street
Chinsali—Zambia
Tel: +260 211 378244

Choma

Plot No. 53031, JK Office Complex
Corner of Hospital Road
Choma—Zambia
Tel: +260 211 000000

Chipata

Plot No. 56, Bishop John Osmer's
Office Complex, Church Road
Chipata—Zambia
Tel: +260 211 378246

