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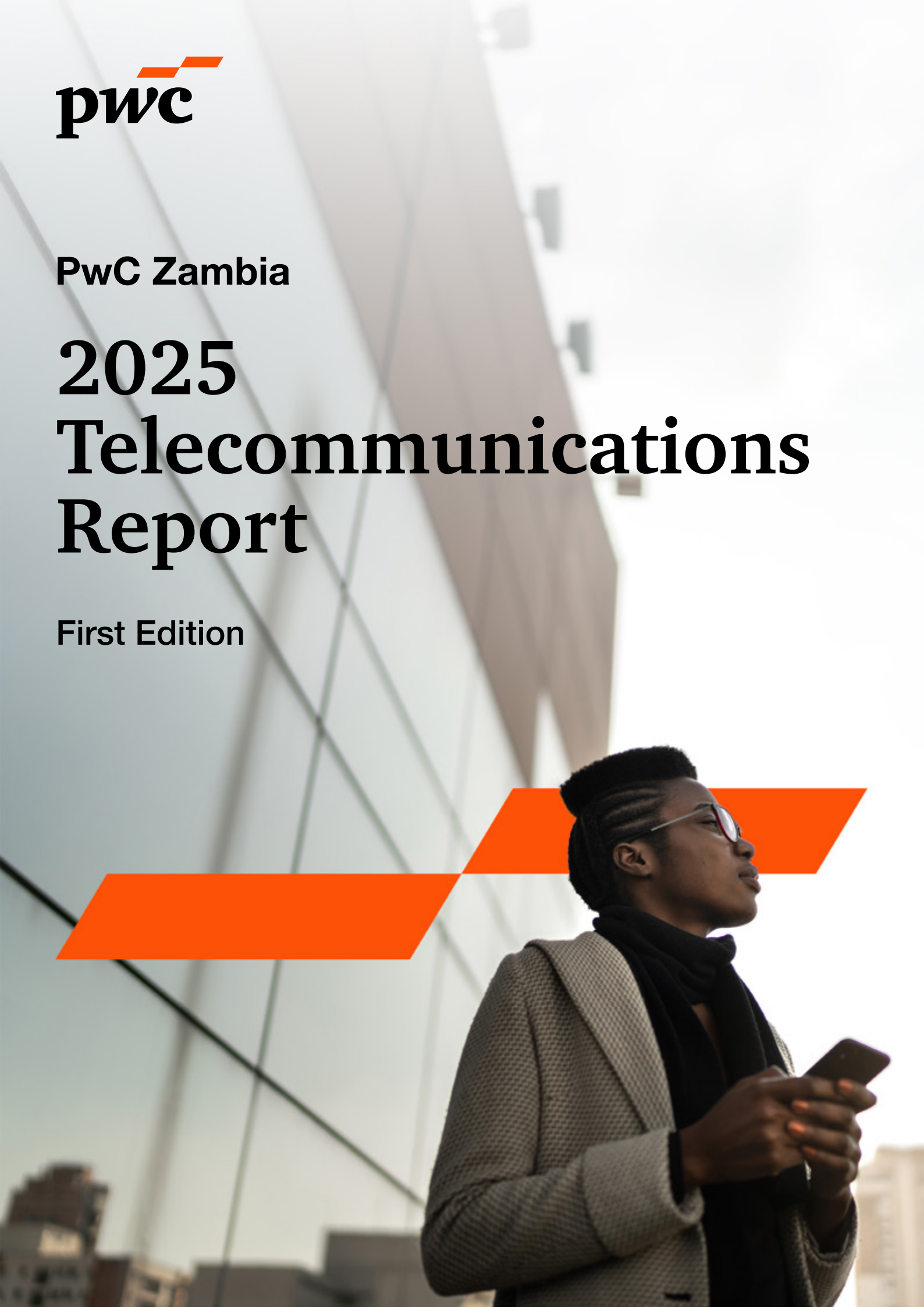
PwC Zambia

2025 Telecommunications Report

First Edition



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Foreword

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We are delighted to present the first edition of the PwC Zambia Telecommunications Report.

The telecommunications sector plays a vital role in Zambia's development, not only because it enables communication between individuals and businesses but also because it is a powerful driver of economic activity through mobile financial services.

Zambia's telecommunications industry has undergone significant transformation in recent years, fuelled by technological advancements and supported by targeted government initiatives. This report analyses the current state of the ICT sector, with a focus on the three largest mobile network operators in Zambia, highlighting key trends and emerging technologies, as well as ongoing challenges and future opportunities for the industry.

The insights presented here are intended for a wide range of stakeholders—policymakers, investors, service providers and consumers—and offer a clear view of the sector's progress, its growth potential and the areas that require more attention.

We are extremely grateful to Airtel Networks, MTN Zambia and Zamtel for collaborating with us in the planning and execution of our analysis and subsequent report preparation. We are also thankful for input from the sector's regulator, the Zambia Information and Communication Technology Authority, and other key stakeholders, including the Ministry of Technology and Science, the Ministry of Finance and National Planning, the Zambia Revenue Authority, the Zambia Statistics Agency and the Bank of Zambia.

Finally, a special thank you to the PwC team who worked so diligently to deliver this publication.

Introduction

The information and communications technology (ICT) sector grew significantly during the Covid-19 pandemic. Increased demand for digital services led to a rise in mobile subscriptions, domestic calls, internet subscriptions and usage as people adapted to partial lockdowns and social distancing.

Government has made a concerted effort to encourage the use of ICT as a tool for economic growth and social inclusion in Zambia in recent years. Steps taken by the government to support this include establishing the Ministry of Technology and Science in 2021 and the launch of the Smart Zambia Institute, a division under the Office of the President. The Smart Zambia Institute has been pivotal in expanding the use of ICT, with substantial investments made in ICT infrastructure such as data centres, a computer assembly plant, ICT training centres and the Smart Education programme. These developments have been complemented by the expansion of broadband access and improved connectivity to international submarine cables, resulting in more affordable fixed-line and mobile services for end-users.

Increased availability of devices, especially smart ones, has also contributed significantly to the growth in the use of services provided by mobile phone companies.

Report methodology

To gather insights for this report, PwC Zambia conducted a survey targeting the three largest mobile network operators in Zambia: Airtel Networks, MTN Zambia and Zamtel. Each operator received a formal information request covering a range of quantitative and qualitative questions relevant to the mobile telecommunications and mobile money sectors.

The data collected included but was not limited to:

- Subscriber numbers (both mobile and mobile money users).
- Volume and value of mobile money transactions.
- Market share estimates.
- Tax contributions (including corporate tax, value added tax and sector-specific levies).
- Perceptions of key risks and opportunities facing the industry.

All three companies responded to the survey and provided the requested information. In addition, PwC Zambia conducted follow-up interviews with senior management at each organisation to clarify responses, validate data points and explore emerging themes in greater depth.

This mixed-methods approach ensured both quantitative accuracy and qualitative context, enabling a more comprehensive understanding of the sector's current dynamics and future outlook.

We also spoke to key industry stakeholders through interviews and obtained data for this study from them. The main stakeholders we engaged with included:

- Zambia Information and Communication Technology Authority (ZICTA)
- The Ministry of Technology and Science
- The Ministry of Finance and National Planning
- The Zambia Revenue Authority (ZRA)
- The Zambia Statistics Agency
- The Bank of Zambia

01

Overview of the telecommunication sector in Zambia

The telecommunications sector in Zambia has evolved significantly since the liberalisation of the economy in the early 1990s.

Zamtel, which was established in 1994 following the breakup of the Posts and Telecommunications Corporation, retained a monopoly over the international gateway and fixed-line services for many years. However, it struggled to compete with new entrants due to outdated infrastructure, limited investment and an oversized workforce. Meanwhile, private operators such as Celtel Zambia (later Zain, now Airtel Networks) and MTN Zambia rapidly expanded their mobile networks and service offerings. This marked the beginning of competition in a sector that had previously been dominated by the state-owned Zambia Telecommunication Company (Zamtel). Zambia's telecommunications sector is served by four mobile network operators:

- Airtel Networks
- MTN Zambia
- Zamtel
- ZedMobile (a recent entrant)

All three of the biggest operators in Zambia—MTN Zambia, Airtel Networks and Zamtel—have launched 5G services, marking a new era of high-speed connectivity. Their service portfolios include mobile voice, data, mobile money and digital solutions, with significant investments made in expanding 3G, 4G LTE and now 5G infrastructure.

Key milestones by operator:

- Airtel Zambia started in 1997 and introduced 2G in 1998, 3G in 2009, 4G in 2017 and 5G in 2022. It launched Airtel Money in 2009 and rebranded in 2013.
- MTN Zambia began operations in 2005 and introduced 2G in 2005, 3G in 2010, 4G in 2014 and 5G in 2022. It launched MTN Money in 2010 and celebrated 20 years in Zambia in 2025.
- Zamtel launched Global System for Mobile Communication (GSM) services in 2003, 3G in 2011, 4G in 2014, and is rolling out 5G in 2025 as part of its new corporate strategy. It introduced Zamtel Money in 2017.

Table 1: Airtel Network's key milestones

Key milestone timeline Airtel Networks	
Event	**Date**
1.Date of commencement of operations	1997
2. Date of Introduction of 2G	1998
2G on air date	
3. Date of listing and market capitalization	2008
4. Mobile Money	2009
5. Smart phone introduction	2009
6. 3G on air date	2009
7. From Celtel Zambia to Airtel Networks	2013
8. 4G on air date	2017
9. 5G on air date	2022

Source: Airtel Networks

Table 2: MTN Zambia's key milestones

Key milestone timeline MTN Zambia	
Event	**Date**
1. Date of commencement of operations	2005
2. Date of introduction of 2G	
2G on air date	2005
3. 3G on air date	2010
4. MTN Money launched	2010
5. Date of smart phone production	2010
6. 4G on air date	2014
4. 5G on air date	2022
5. Date of rebranding	2022

Source: MTN Zambia

Table 3: Zamtel's key milestones

Key milestone timelines Zamtel	
Event	**Date**
1. Date company was established	1994
2. Analogue mobile services (2G Pre GSM)	1995
3. Date of introduction of 2G	
GSM (2G) launched	2003
4. Smartphone financing roll out	2005
5. Mobile internet—3G	2011
6. 4G LTE launched	2014
7. Zamtel Money launched	2017
8. LTE A-Upgrade	2017
9. 5G network rollout	2025
10. Rebranding drive	The first major rebrand was 2011 (Post lap-green) Early 2025

Source: Zamtel

The Zambian government, through the Ministry of Technology and Science, has undertaken several initiatives to promote ICT for economic growth and social inclusion. Here are some of the key actions and projects:

- Smart Zambia Institute: This overarching programme includes several components aimed at digital transformation such as Smart Education, equipping schools with digital tools like electronic blackboards and Huawei's Idea Hub devices to enhance learning.[1]
- Smart Village Project (2024–2025): In partnership with Huawei, Zambia launched a Smart Village Showcase, which deploys micro solar power plants and RuralStar base stations to bring electricity and internet to rural areas.[2]
- Public-private partnerships: Government has collaborated with companies like Huawei and Airtel Networks to expand 4G/5G networks and bridge the digital divide. It has also developed joint programmes with international partners like Finland to promote youth entrepreneurship and digital skills development.[3]

The 2024 budget was geared towards developing the ICT sector, with plans to phase out GSM networks and ensure all mobile infrastructure is LTE-enabled. The introduction of 5G services by MTN Zambia and Airtel Zambia marked a significant milestone. Having made remarkable progress in recent years, Zambia is on an exciting path towards a digital future. This demonstrates the nation's dedication to enhancing digital connectivity and closing the digital divide.

1 Ministry of Technology and Science of Zambia and Huawei Jointly Launch the Global Smart Village Showcase, Exploring New Digital Transformation Modes for Villages—Huawei Enterprise
2 Ministry of Technology and Science of Zambia and Huawei Jointly Launch the Global Smart Village Showcase, Exploring New Digital Transformation Modes for Villages—Huawei Enterprise
3 Ministry of Technology and Science—MOTs

02

Telecommunications sector facts and figures

2.1 ICT sector's overall contribution to Zambia's GDP

In 2024 the ICT sector's share of nominal GDP was 2.8%. From 2019 to 2024, Zambia's ICT sector contributed between 0.9% to 1.8% to growth in national domestic product (GDP), according to the Ministry of Finance and National Planning's 2024 Annual Report. This growth was supported by targeted infrastructure investments, such as the expansion of 4G coverage and the initial rollout of 5G services by MTN Zambia and Airtel Networks. The establishment of the Ministry of Technology and Science in 2021 provided a central body for ICT policy coordination, leading to a more structured implementation of digital initiatives. For example, the Smart Zambia Institute had facilitated the digitisation of government services and trained over 5,000 public servants in basic ICT skills by 2023. These developments reflect a shift from general sectoral expansion to measurable, policy-driven outcomes.

The launch of 5G services by MTN Zambia and Airtel Networks in 2022 also contributed to the country's economic growth during this period. The introduction of 5G has improved connectivity and reduced costs for consumers, further boosting the sector's economic impact. The government's focus on phasing out GSM networks, which was one of the earlier and widely used mobile network technologies, and enhancing LTE infrastructure, which is a much faster and more advanced mobile network technology, has also contributed to the sector's growth.

The ICT sector's contribution to Zambia's GDP growth between 2019 and 2024 is shown in Table 4 below:

Table 4: ICT sector contribution to real GDP growth

Contribution to real GDP growth	2019	2020	2021	2022	2023	2024
Information and communication sector	0.80%	0.70%	1.20%	3.20%	1.50%	1.80%

Source: Ministry of Finance and National Planning 2024 Annual Economic Report

Although the ICT sector may seem relatively small when measured by direct economic output, its true value lies in its role as a powerful enabler across almost all other sectors of the economy. ICT provides the digital infrastructure, tools and innovations that drive efficiency, productivity and innovation in industries such as healthcare, education, finance, agriculture, manufacturing and transportation.

For example, in the financial sector, ICT underpins digital banking, mobile payments and fintech innovations that expand access to financial services. In Agriculture, it enables precision farming through sensors, drones and data driven decision making. Even in traditional sectors like manufacturing, ICT facilitates automation, supply chain optimisation and smart factory operations.

In short, ICT acts as a foundational layer that enhances the capabilities of other sectors, making it a critical driver of digital transformation and economic development. Its indirect contributions often far exceed its direct footprint, positioning it as a strategic asset in the national development agenda.

According to recent information from the Zambia Statics Agency, the ICT sector was the top contributor to GDP growth in 2024, adding 1.8% to national GDP.[4] ICT sector growth was driven by increased digital adoption, infrastructure development and the expansion of mobile and internet services. This growth underscores the sector's expanding role in driving innovation, supporting digital transformation and fostering economic resilience across various industries in Zambia.

4 Preliminary Annual GDP 2024—Zambia Statistics Agency

2.2 The telecommunications sector's overall contribution to taxes

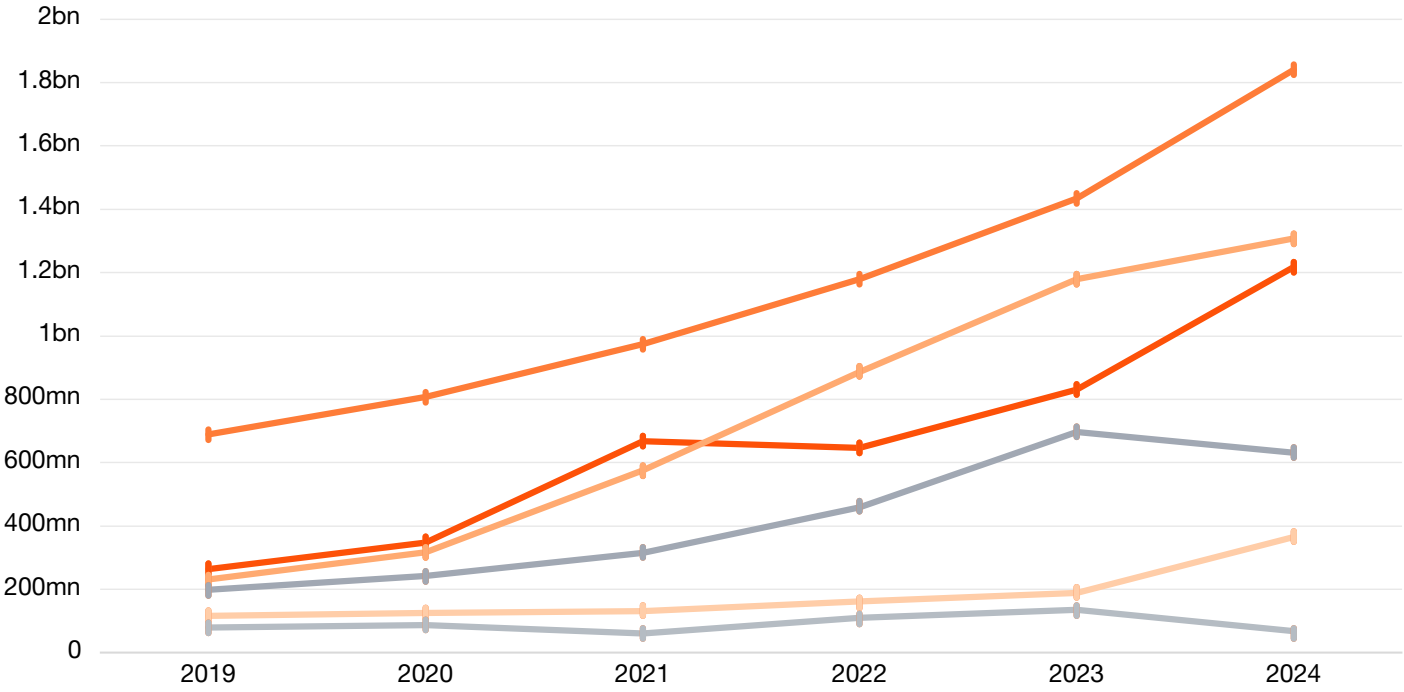
Tax contributions from Zambia's three biggest mobile network operator increased significantly between 2019 and 2024, rising from K1.6bn to K5.4bn during the period. This sharp increase underscores the growing fiscal role of the ICT sector in the national economy. Among the various tax types, domestic excise duty and corporate tax have consistently been the largest contributors, with corporate tax alone contributing K1.3bn in 2024. Despite a recent policy shift that reduced the corporate tax rate for telecoms from a tiered 30%/40% structure to a flat 35%, the sector still bears a disproportionately high tax burden compared to other sectors, which typically face a 30% corporate tax rate[5].

The 2024 ZICTA Annual Market Report highlights the sector's resilience and growth despite economic headwinds such as load shedding, currency depreciation and inflation. Mobile network operators saw a 21% increase in total revenue to K11.5bn, driven by rising mobile and internet subscriptions and a surge in mobile money transactions.[6] However, ZICTA also acknowledged that the high tax burden remains a key concern for operators, potentially stifling investment and innovation. The report calls for a more enabling fiscal environment to support digital transformation and infrastructure expansion, especially as the sector plays a pivotal role in national development.

In conclusion, while the tax rate reduction offers some relief, the telecommunications sector continues to shoulder a heavy tax load. With the ICT industry being a cornerstone of Zambia's digital economy, a more balanced and growth-oriented tax policy is essential to sustain its momentum and unlock its full potential.

5 GSMA_Zambia-Report_Oct-2024_Final.pdf
6 2024_annual_market_report.pdf

Figure 2: Tax contributions (ZMW)



	2019	2020	2021	2022	2023	2024
VAT	263,311,076	347,025,888	667,846,120	645,559,039	831,247,565	1,218,730,792
Domestic, Excise, Duty	689,813,967	807,016,503	973,305,726	1,179,738,790	1,433,753,285	1,841,614,462
Corporate, Tax	230,398,829	316,448,977	575,011,861	885,270,114	1,179,076,358	1,307,408,888
Employment, Tax	116,551,943	126,075,812	131,458,881	162,104,138	189,275,990	364,490,893
Witholding, Tax	198,371,645	241,283,449	314,825,133	458,745,145	696,356,825	630,421,615
Import, Tax, (Customs, Duty)	79,332,036	86,324,365	59,828,560	109,381,914	135,638,145	67,948,433

Source: Airtel, MTN, and Zamtel

Corporate income tax (CIT)

The Zambian government introduced a uniform CIT rate of 35% for telecommunications companies on 1 January 2023. This replaced the previous dual-rate system, which taxed income up to K250,000 at 30% and income above that threshold at 40%. While this move simplified the tax structure, the new rate is notably higher than the standard CIT rate of 30% applied to other sectors, placing an additional tax burden on telecommunications companies.

Excise duty

Telecommunication services in Zambia are also subject to an excise duty of 17.5% on airtime purchases, covering voice calls, short message service (SMS), multimedia service (MMS) and internet bandwidth. This rate is among the highest in the region and substantially increases the cost of telecommunications services for both consumers and businesses.

Value added tax (VAT)

The standard VAT rate in Zambia is 16% and this applies to telecommunication services such as airtime and data. However, as of 1 January 2023, the government introduced a 0% rate on the importation of telecommunications equipment to reduce operational costs for telecommunications companies and encourage investment in network infrastructure.

Implications of the current tax regime

The higher tax rates in the telecommunications sector have several noteworthy implications:

- Higher taxes lead to increased costs for telecommunication companies, which may be passed onto consumers through higher prices for services.
- A heavy tax burden may discourage both domestic and foreign investment in the sector. This could slow down innovation, limit the expansion of services and stall improvements in infrastructure.
- Compared to other industries taxed at lower rates, telecommunication companies face a competitive disadvantage, potentially distorting market dynamics and resource allocation.
- Increased service costs and reduced investment can limit consumer access to affordable and high-quality communication services, thereby affecting digital inclusion and socio-economic development.

While the Zambian government has made efforts to alleviate some tax burdens, particularly through the VAT zero rating of imported telecommunication equipment, the overall tax regime remains relatively stringent for telecommunications companies compared to other industries. A more balanced approach such as tax incentives for infrastructure development could stimulate growth, attract investment and expand access to affordable services, ultimately benefiting the sector and the broader economy.

Tax revenue contribution analysis

In 2024, ZRA achieved a gross revenue collection of K148.6bn. This performance was driven predominantly by the mining and quarrying sector, which remained the highest contributor, with K41.8bn in gross revenue. The wholesale and retail sector followed, generating K28.8bn, while the manufacturing sector contributed K15.4bn.

The telecommunications sector reported a comparatively lower gross revenue contribution of K6.1bn, positioning it sixth among the leading revenue-generating sectors.

With respect to net revenue collections, the wholesale and retail sector accounted for the largest share at 21.5% of total net collections, equivalent to 4.1% of GDP. The mining and quarrying sector was the second largest contributor, representing 20% of net collections and 3.8% of GDP. The telecommunications sector contributed 4.6% of total net revenue collections, corresponding to a tax-to-GDP ratio of 0.9%.

The relatively modest revenue contribution from the telecommunications sector, despite the imposition of high tax rates, can be attributed to several underlying factors. These include the sector's capital-intensive operational model, reinvestment requirements for infrastructure development and diminishing profit margins due to intense market competition[7].

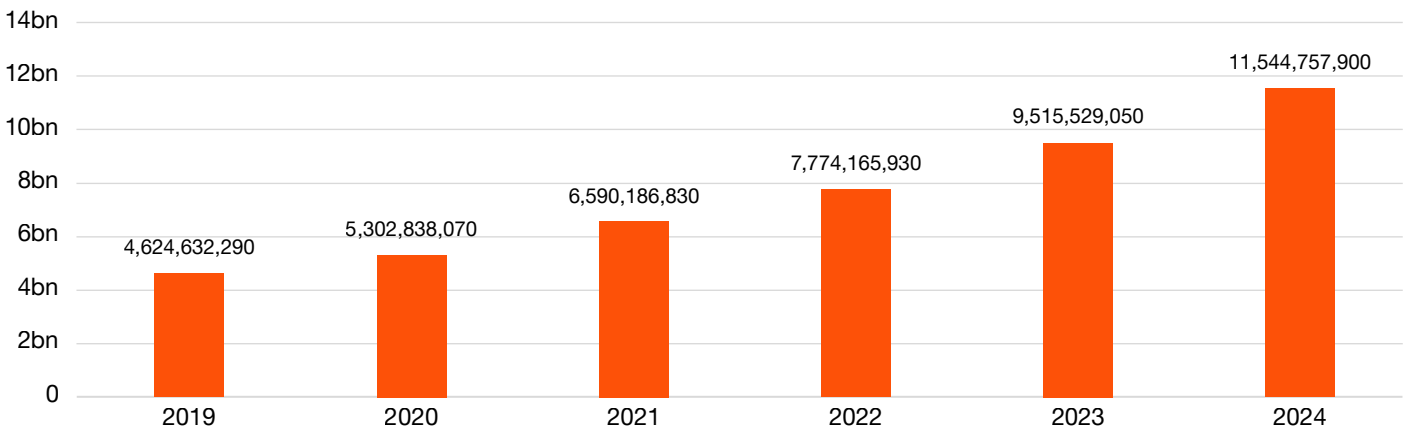
7 Annual-Report-2024.pdf

2.3 Mobile revenue performance

Between 2019 and 2024, Zambia's mobile cellular revenue, which includes revenue from voice services, data services, SMS and messaging and airtime sales, experienced steady and substantial growth, rising from approximately K4.6bn to K11.5bn. The year-on-year percentage increases were 14.7% (2019–2020), 24.3% (2020–2021), 18% (2021–2022), 22.4% (2022–2023) and 21.3% (2023–2024), reflecting a strong upward trend driven by expanding mobile service adoption, increased data usage and digital financial transactions. This consistent growth highlights the sector's resilience and its critical role in supporting Zambia's broader digital and economic transformation.

In 2024, Zambia's mobile cellular sector recorded a notable 21.3% revenue increase, rising from K9.5bn in 2023 to K11.5bn. This growth was driven by growing demand for mobile connectivity, data services and digital financial transactions. While data services remained the largest revenue source at 43.4%, data services' share declined slightly, whereas airtime revenue surged by 42.4%, reflecting continued reliance on voice services supported by bundled packages. Meanwhile, revenues from SMS, fees and leased sites declined due to the widespread use of over-the-top messaging apps like WhatsApp and Telegram, and roaming services remained minimal amid the shift to internet-based communication.[8]

Figure 3: Mobile revenue performance



Source: ZICTA

8 2024 ZICTA Annual Report

2.4 Mobile subscribers, mobile money subscribers and transactions going through mobile money

Mobile subscribers

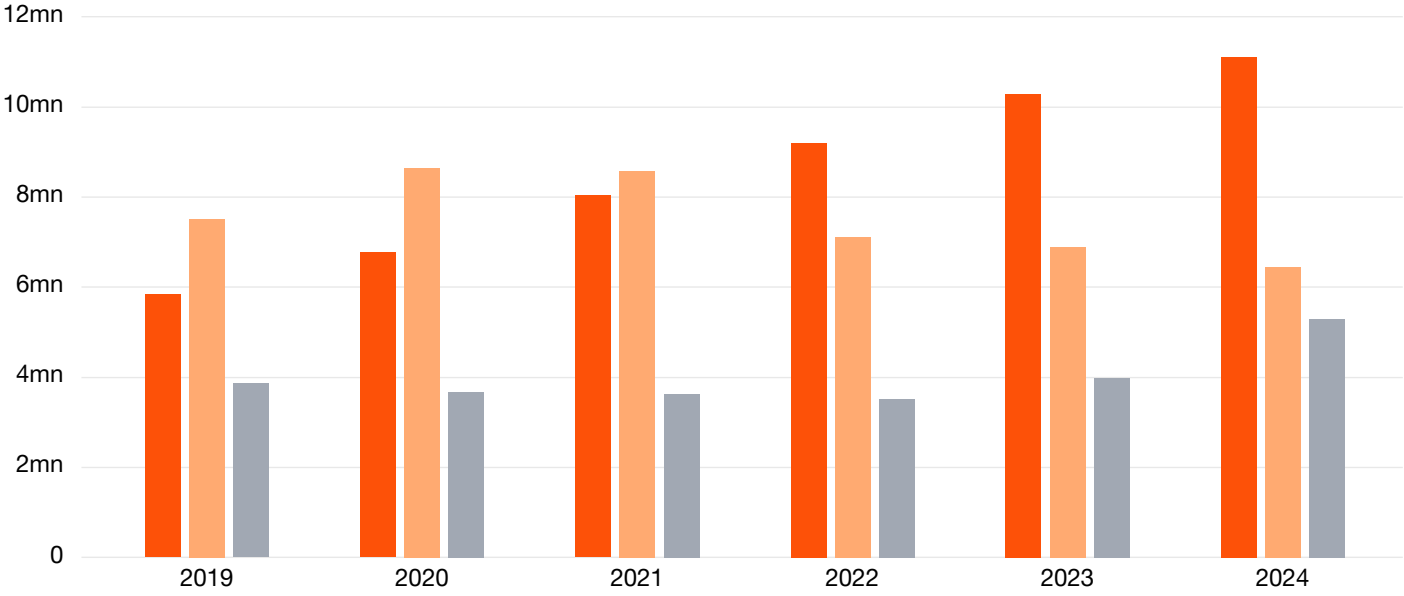
In 2019, competition among Zambia's three biggest mobile network operators, MTN Zambia, Airtel Networks and Zamtel, was fierce. That year, MTN Zambia led the market with 7,519,397 subscribers, followed by Airtel Networks with 5,836,926 and Zamtel with 3,864,284. In 2020, all three operators experienced shifts in their subscriber bases. MTN Zambia grew to 8,656,154 subscribers, Airtel Networks increased to 6,771,906, while Zamtel saw a slight decline to 3,676,148.

By 2021, Airtel Networks had made significant gains, attaining 8,043,806 subscribers, while MTN Zambia declined slightly to 8,569,227. Zamtel's numbers continued to decrease, falling to 3,634,078. The trend continued into 2022, with Airtel Networks further expanding its lead to 9,195,828 subscribers. In contrast, MTN Zambia's subscriber base dropped to 7,112,482 and Zamtel's fell to 3,529,690.

In 2023, Airtel Networks' subscriber base continued to grow, reaching 10,279,140 subscribers. MTN Zambia's numbers declined further to 6,885,738, while Zamtel saw a modest increase to 3,986,325. The total number of active mobile phone subscriptions in Zambia rose to 21.1mn, up from 19.8mn in 2022. This growth pushed the mobile penetration rate to 107.6%, reflecting the increased adoption of mobile services across the country.

In 2024, the sector maintained its growth momentum. Airtel Networks reached 11,102,293 subscribers, MTN Zambia declined again to 6,452,376, while Zamtel experienced a notable increase to 5,295,844. Overall, the total number of active mobile phone subscriptions rose 9.9% to 23mn. Meanwhile, the mobile penetration rate rose to 115.8%, underscoring the population's growing reliance on mobile connectivity and the expanding role of mobile services in everyday life.

Figure 4: Subscriber numbers



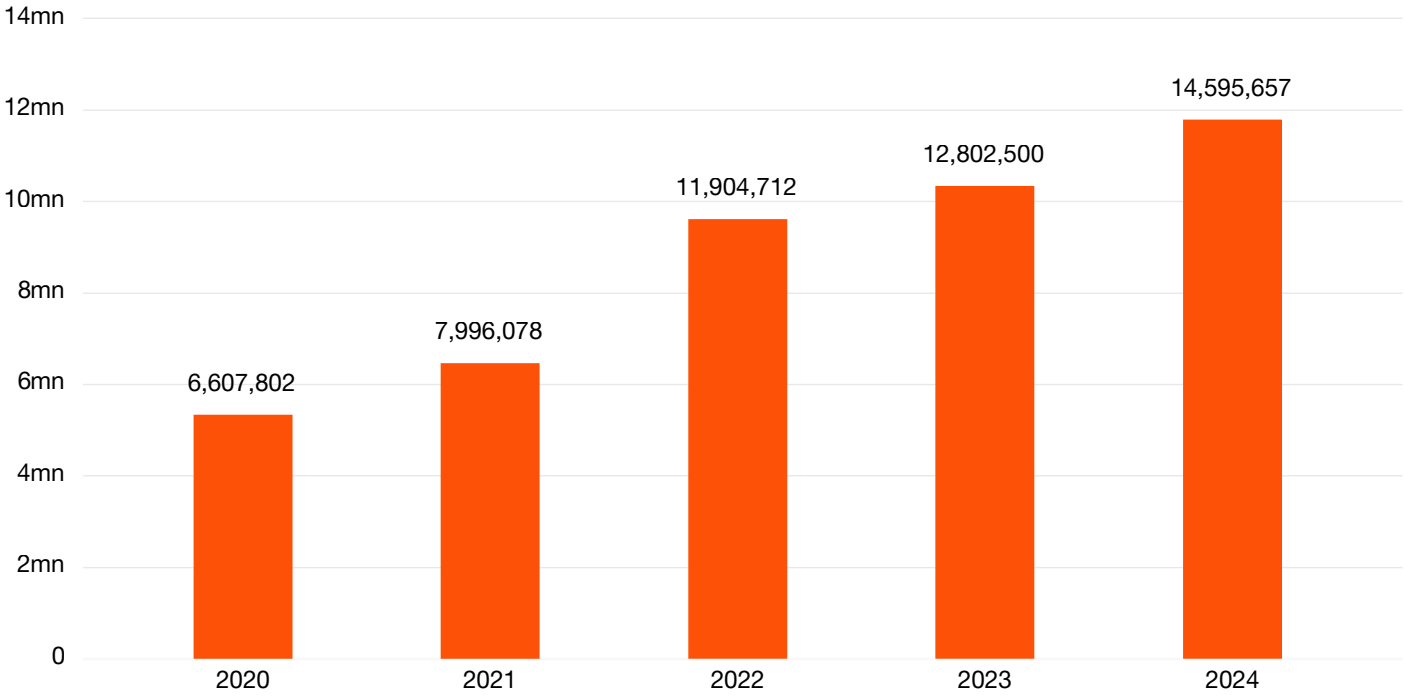
	2019	2020	2021	2022	2023	2024
AIRTEL	5,836,926	6,771,906	8,043,806	9,195,828	10,279,140	11,102,293
MTN	7,519,397	8,656,154	8,569,227	7,112,482	6,885,738	6,452,376
ZAMTEL	3,864,284	3,676,148	3,634,078	3,529,690	3,986,325	5,295,844

Source: Ministry of Finance and National Planning Annual Reports

Mobile money subscribers, agents and transactions

Mobile money has played a pivotal role in advancing financial inclusion in Zambia, offering accessible financial services to underserved populations. It has boosted trade, empowered SMEs, created jobs, encouraged savings and investment, increased government revenue and reduced reliance on cash, contributing significantly to economic growth and stability.

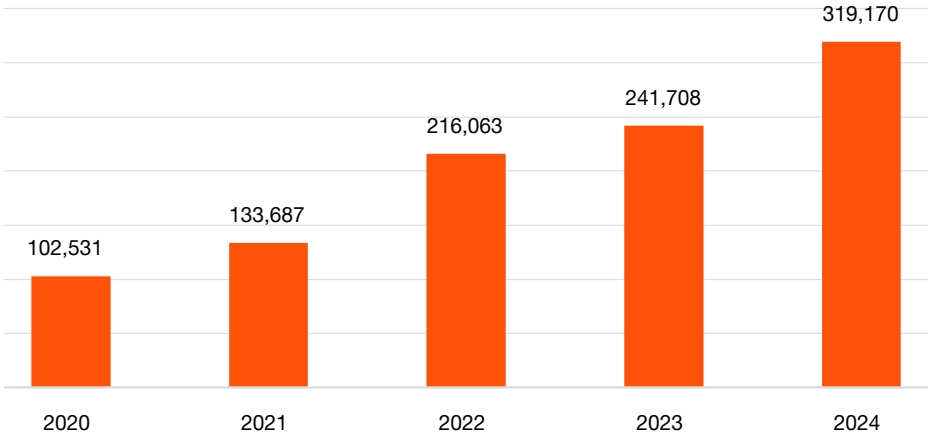
Figure 5: Mobile money subscribers across networks



Source: MTN Zambia, Airtel Networks, Zamtel

Mobile Money has become a corner stone of Financial inclusion in Zambia, with Subscriber numbers rising from approximately 6.6mn in 2020 to 14.6mn in 2024. This growth reflects increasing access to digital financial services, especially in underserved areas. There was a notable surge in the number of mobile money subscribers in 2022 when Zamtel entered the mobile money market, contributing to an increase of 4mn new subscribers that year. This expansion has supported trade, empowered small businesses and enhanced economic participation across the country.

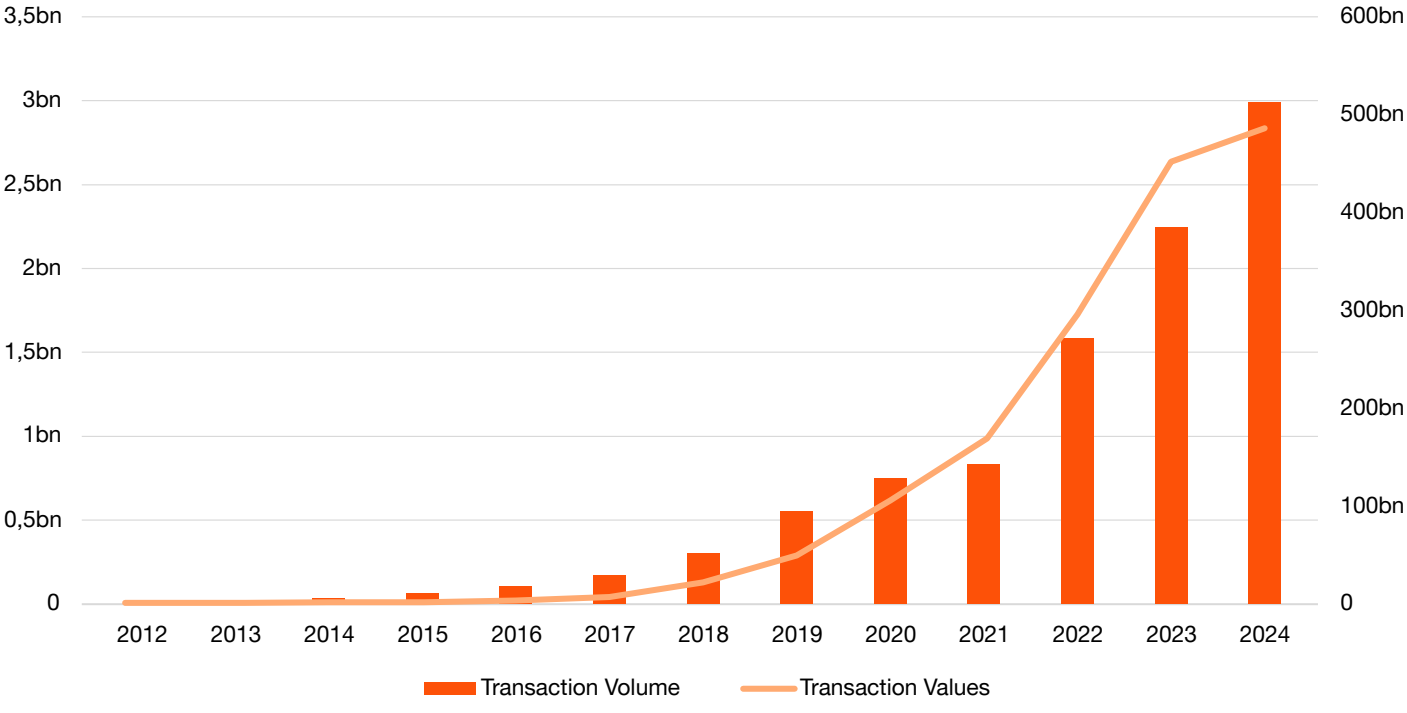
Figure 6: Mobile money agents



Source: MTN Zambia, Airtel Networks, Zamtel

The Mobile Money Agents in Zambia between 2020 and 2024 experienced a significant increase in the number of mobile money agents, growing from 102,531 in 2020 to 319,170 in 2024. This represents an overall growth of approximately 211%. The most substantial year-over-year growth occurred between 2021 and 2022, with a rise of 62%. This trend reflects the increasing adoption and reliance on mobile financial services in Zambia, likely driven by greater financial inclusion efforts, technological advancements, and the need for accessible banking alternatives, especially in underserved and rural areas.

Figure 7: Mobile money transactions



Source: Bank of Zambia

Mobile money transactions in Zambia have experienced exponential growth over the last few years reflecting the country's rapid digital financial transformation. Transaction volumes surged from approximately 17.4mn in 2012 to nearly 3bn in 2024, while transaction values expanded from about K1.2bn to over K486bn. While overall growth has risen steadily during this period, there have also been periods of particularly strong growth in mobile money transactions. For instance, between 2016 and 2017, transaction volumes grew by 63%, and between 2017 and 2018 they grew by over 76%, while transaction values rose by more than 200% in 2018 alone, indicating a major leap in adoption and usage. There was another growth phase between 2019 and 2022, when volumes and values increased by 81.8% and 122.8% respectively in 2019 and continued to rise sharply through to the end of 2022. The entry of Zamtel into the mobile money market in 2022 likely contributed to this momentum by increasing competition and expanding service reach. Although growth rates began to moderate slightly after 2023, with transaction values increasing by just 7.6% in 2024, the overall trend underscores mobile money's critical role in enhancing financial inclusion, supporting digital commerce and driving economic activity across Zambia.

Table 5: Mobile money transactions in volume and value

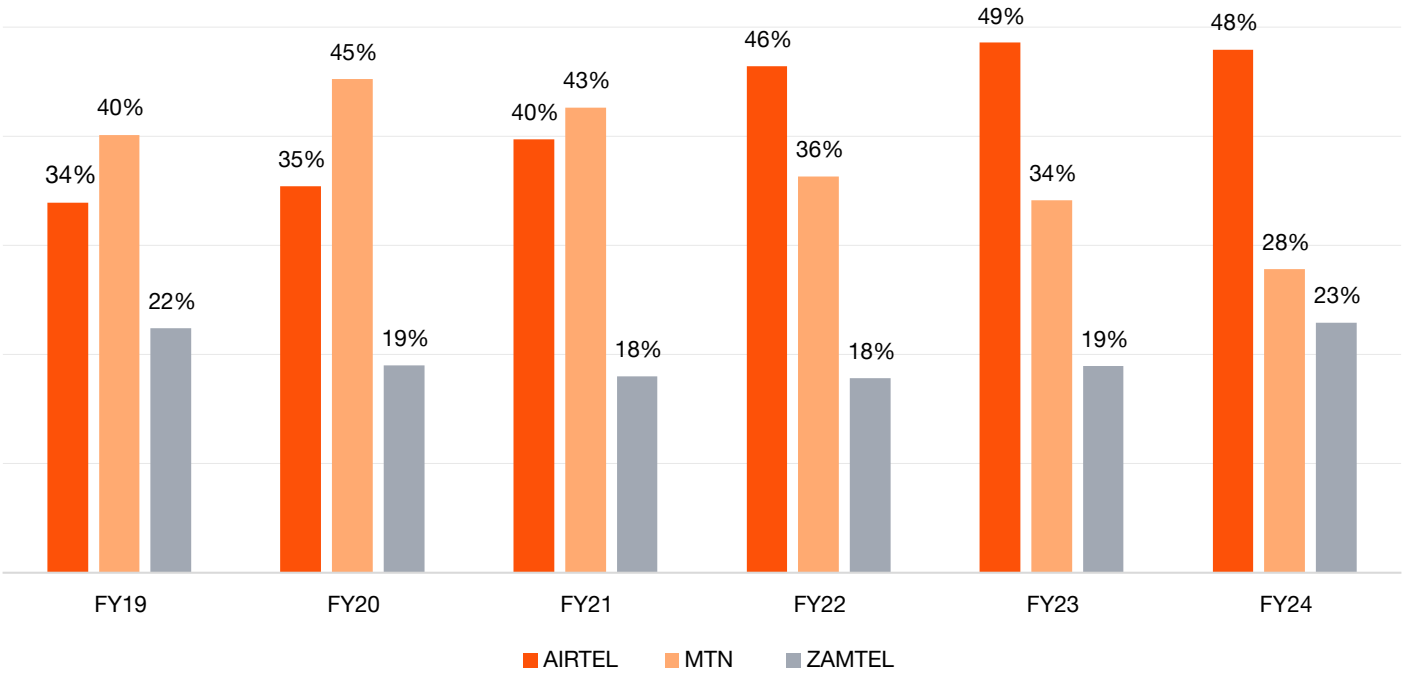
Mobile money		
Year	**Transaction volume**	**Transaction values**
2012	17,430,411	1,163,628,529
2013	24,412,326	957,288,216
2014	35,457,948	1,574,394,938
2015	62,516,656	2,069,611,070
2016	105,934,181	3,561,121,959
2017	172,429,911	7,287,745,101
2018	303,955,243	22,191,565,753
2019	552,638,552	49,445,749,890
2020	750,514,157	105,815,050,439
2021	834,068,499	169,351,442,167
2022	1,581,355,224	295,828,075,728
2023	2,242,443,898	451,984,602,780
2024	2,990,936,749	486,270,278,799

Source: Bank Of Zambia

2.5 Mobile network operations' market share and market penetration rate

From 2019 to 2024, the Zambian mobile network operators' market has seen notable shifts in market share among the three major players. Airtel Networks has consistently grown its market share, reaching a peak of 48.6% in 2023 before slightly decreasing to 47.9% in 2024. In contrast, MTN Zambia's market share has steadily declined from 43.7% in 2019 to 27.8% in 2024, meaning the company has lost its dominant market position. Zamtel, while holding the smallest share, has experienced fluctuations over the years, with a notable market share recovery to 22.9% in 2024 after its market share fell to a low of 17.8% in 2022. This competitive landscape highlights Airtel Networks' rise to dominance, MTN Zambia's decline and Zamtel's efforts to regain market presence.[9]

Figure 8: Market share rate



Source: Annual Economic Reports Ministry of Finance and National Planning.

In 2024 there was a new entrant to the market, ZedMobile, which held 1.4% of the mobile network operators' market share that year.

9 Ministry of Finance and National Planning Annual Economic Reports.

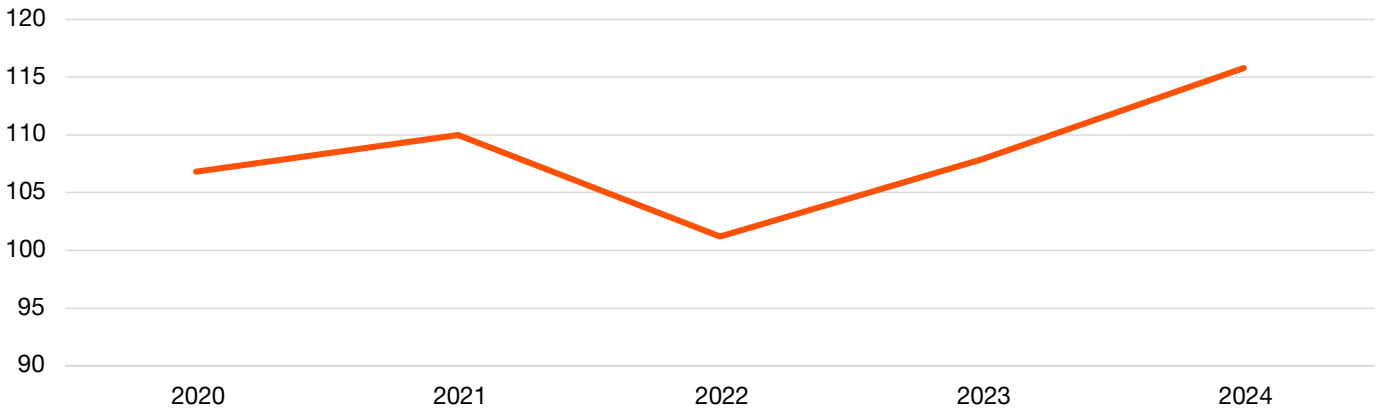
Market penetration rate

The market penetration rate in the telecommunications sector refers to the percentage of the population that subscribes to a specific telecommunications service, such as mobile service provider, internet or broadband. It is a key indicator of how widely telecommunications services are adopted in a country. The market penetration rate in the telecommunications sector is calculated by dividing the number of active users of a service, such as mobile phone subscribers or internet users, by the total population of the country, and then multiplying the result by 100 to express it as a percentage. This rate shows how widely a service is used within the population. For example, if Zambia has 22mn active mobile SIM cards and a population of 20mn, the mobile penetration rate would be 110%, indicating that some people use more than one SIM card.

From 2020 to 2024, the market penetration rate for telecommunications companies in Zambia experienced notable fluctuations. Starting at 106.8% in 2020, it increased by 3% to 110% in 2021, indicating growth in subscriber numbers. However, in 2022, the rate dropped by 8% to 101.2%, suggesting a decline or market saturation. The penetration rate rebounded in 2023 with a 6.6% increase to 107.9%, showing recovery and renewed growth. Finally, in 2024, the rate continued to rise by 7% to 115.8%, reflecting strong market expansion and subscriber acquisition. Overall, despite some fluctuations, the trend indicates positive growth for the telecommunications sector in Zambia.

We can reasonably infer that the high mobile penetration rate suggests many individuals own more than one mobile device. This is especially likely when considering that certain segments of the population, such as young children, typically do not own phones, which skews the average upward among the adult population.

Figure 9: Market penetration rate for telecommunications companies in Zambia (2020-2024)



Source: The Zambia Information and Communication Technology Institute

2.5 ICT sector employment rate

Between 2021 and 2024, the number of people employed in Zambia's ICT sector grew consistently, rising from 1,709 to 2,657 employees. A large portion of this workforce was employed by mobile network operators, whose share has increased steadily over the years. In 2021, mobile network operators accounted for 984 employees, representing 57.6% of the sector. This figure grew to 1,129 in 2022 (59%), 1,443 in 2023 (62.4%) and reached 1,678 in 2024, making up 63.2% of total ICT employment. These trends highlight how mobile network operators are driving job creation within the sector, fuelled by growing demand for mobile services, infrastructure expansion and digital connectivity across the country.

Table 6: Employment rate in the ICT sector versus mobile network operators

Employment rate in the ICT sector		
Year	**Total headcount across ICT Sector**	**MNO'S total head count**
2021	1,709	984
2022	1,914	1,129
2023	2,313	1,443
2024	2,657	1,678

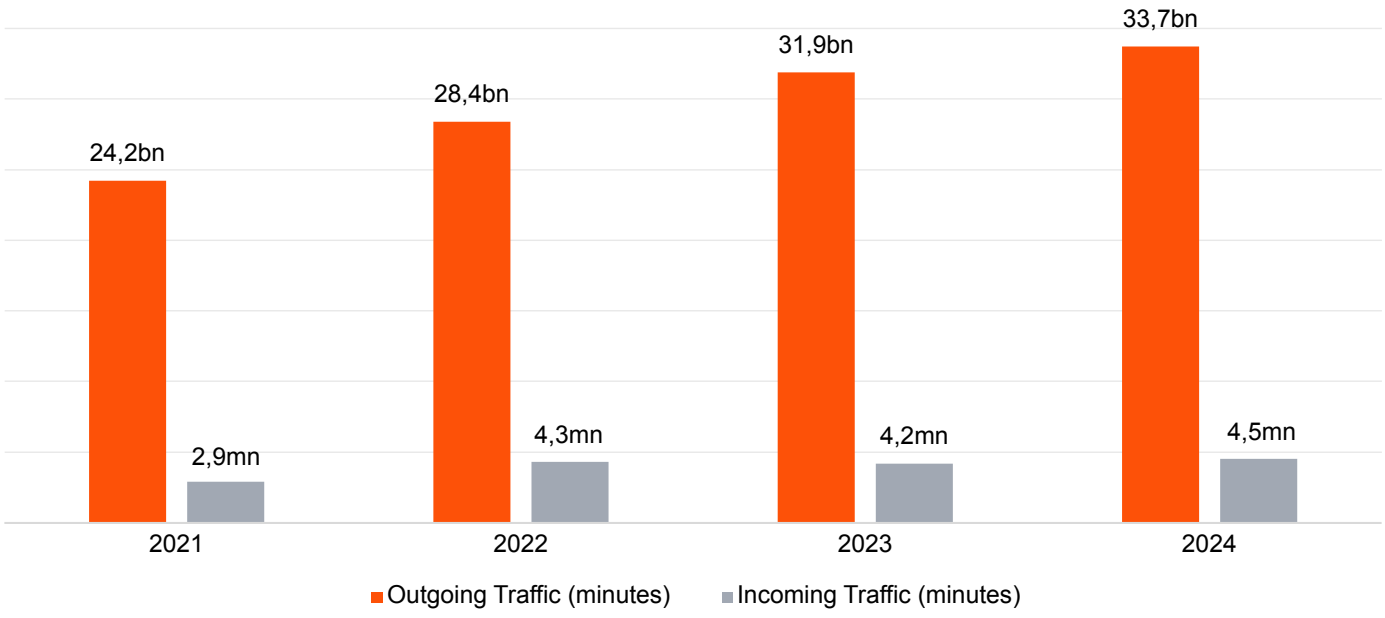
Source: ZICTA 2024 Annual report

Mobile traffic in incoming and outgoing calls

In the period between 2021 and 2024, Zambia's domestic call traffic exhibited notable trends in both outgoing and incoming communications. Outgoing traffic, measured in billions of minutes, showed a consistent upward trajectory, increasing from 24.2bn minutes in 2021 to 33.7bn minutes in 2024. However, the rate of growth in outgoing traffic has gradually decelerated over the years, dropping from a 17.4% increase between 2021 and 2022 to 12.3% the following year and finally to 5.6% between 2023 to 2024.

In contrast, incoming traffic, which is measured in millions of minutes, displayed more fluctuations. It surged by 48.3% from 2021 to 2022, indicating a sharp rise in received calls. However, this was followed by a small decline of 2.3% in 2023, before rebounding with a 7.1% increase in 2024. Despite these changes, the volume of incoming traffic remained substantially lower than outgoing traffic throughout the period, highlighting a strong outbound communication pattern in Zambia's domestic call behaviour.[10]

Figure 10: Domestic outgoing and incoming traffic in minutes

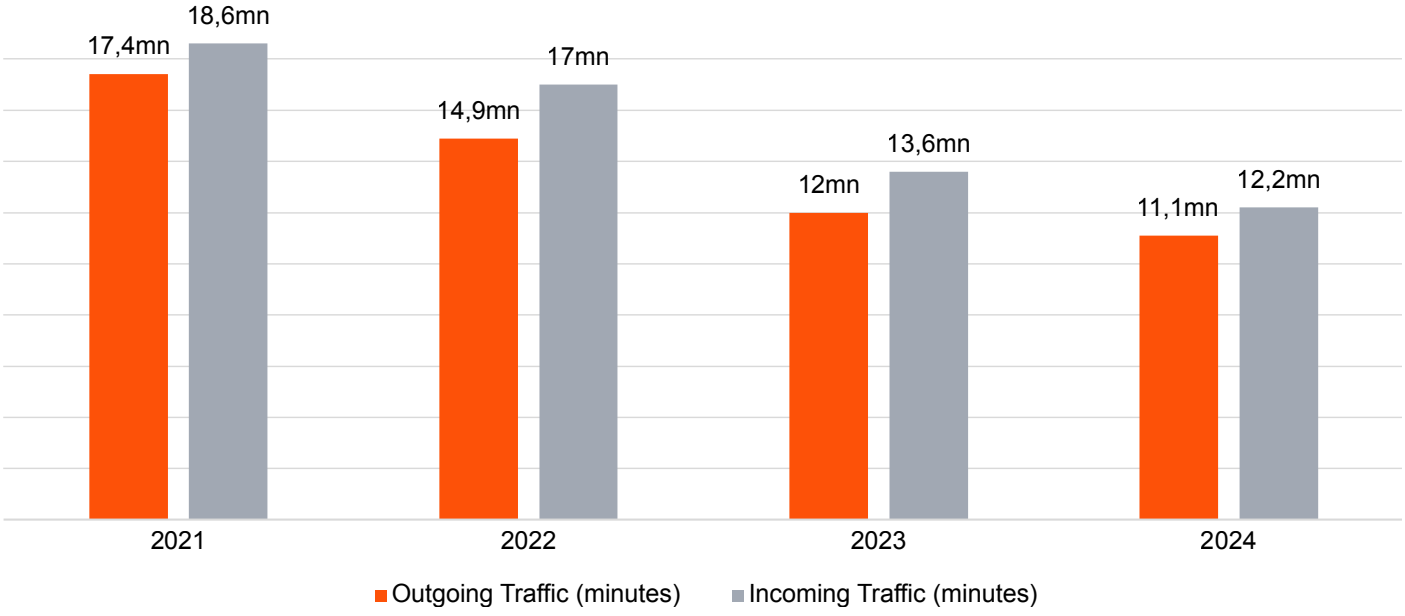


Source: ZICTA 2024 Annual Report

10 ZICTA 2024 Annual Report

Between 2021 and 2024, international calling traffic experienced a consistent decline in both outgoing and incoming minutes. Outgoing traffic dropped from 17.4mn minutes in 2021 to 11.1mn minutes in 2024, reflecting a cumulative decrease of over 36%. Similarly, incoming traffic fell from 18.6mn to 12.2mn minutes during the same period. The biggest year-over-year declines occurred between 2022 and 2023, with outgoing traffic decreasing by 19.5% and incoming traffic by 20%. These downward trends suggest a shift away from traditional international voice calls, likely influenced by the growing use of internet-based communication platforms such as WhatsApp, Instagram and Facebook changing consumer preferences, and possibly evolving pricing structures in the telecommunications sector.

Figure 11: International outgoing and incoming traffic in minutes



Source: ZICTA 2024 Annual report

2.6 Investments in the ICT sector

Between 2019 and 2024, capital expenditure in Zambia's ICT sector demonstrated a dynamic investment pattern, reflecting both strategic infrastructure development and shifting funding priorities. Capital expenditure was K1.3bn in 2019, growing by 13.1% in 2020 to K1.5bn. Capital expenditure grew significantly in 2021, with investments skyrocketing to K6.6bn, a 335.7% increase. This was likely driven by major infrastructure rollouts such as mobile network expansion and broadband deployment. This upward momentum continued into 2022, with capital expenditure growing a further 16.8% to K7.7bn. However, 2023 saw a sharp contraction, with capital expenditure falling by 75.7% to K1.9bn, possibly due to the completion of large-scale projects or a temporary slowdown in investment. Finally, in 2024, capital expenditure in the ICT sector rebounded with a 51.1% increase, bringing the total capital expenditure to K2.8bn. This trend highlights the cyclical nature of infrastructure investment in the ICT sector, with periods of intense capital injection followed by consolidation and renewed growth.[11]

Table 7: ICT sector capital investments

Capital investments	
Year	**Capex Value (ZMW '000)**
2019	K1,337,050
2020	K1,512,710
2021	K6,590,186
2022	K7,699,434
2023	K1,867,777
2024	K2,822,728

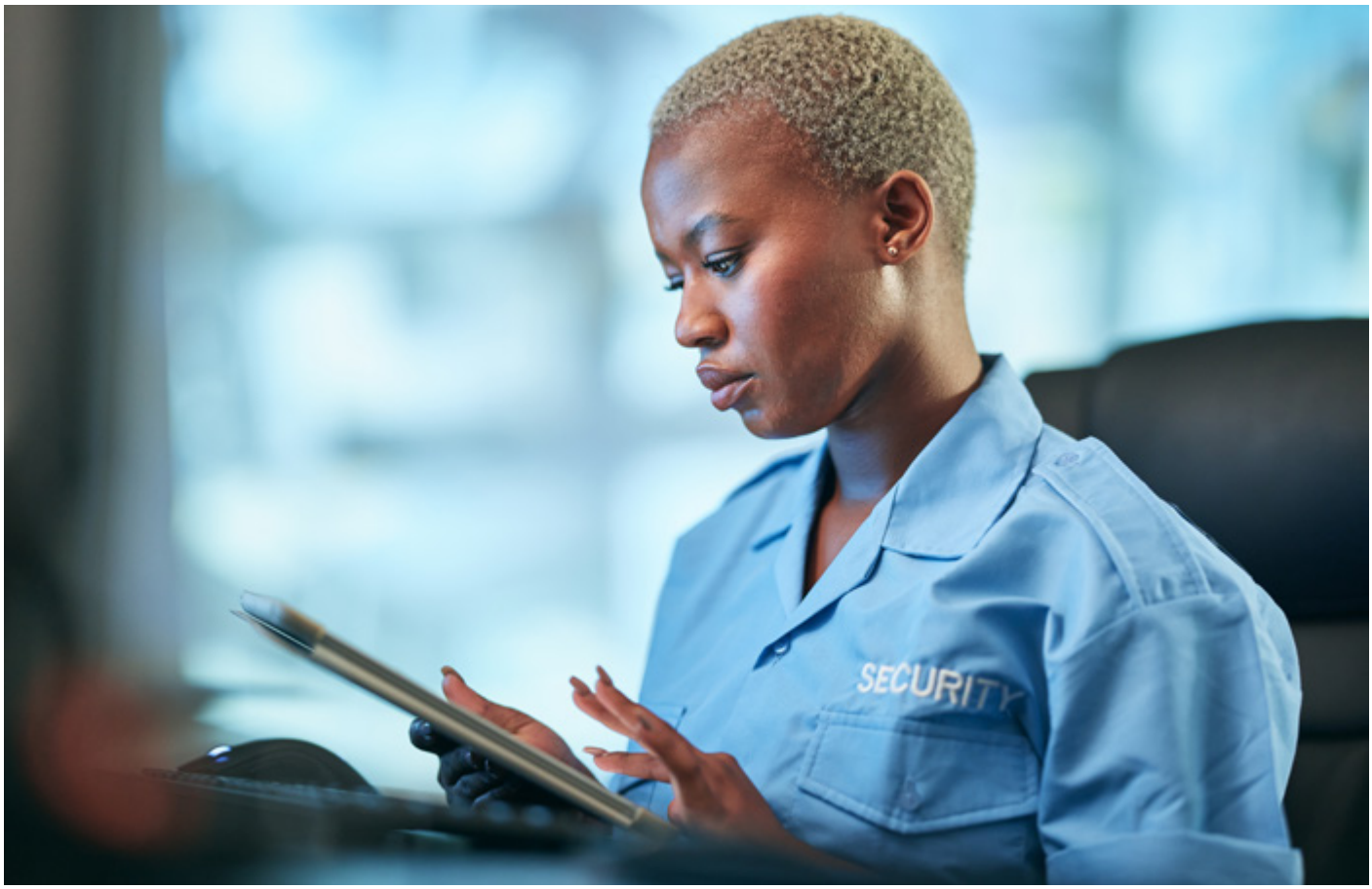
Source: ZICTA

11 The Zambia Information and Communication Authority

03

Top risks and opportunities for the telecommunications industry

In a recent survey conducted among mobile network operators, participants identified a range of critical issues, highlighting the most significant risks and promising opportunities currently shaping their sector.



3.1 Top risks

The telecommunication sector in Zambia faces a myriad of challenges, as highlighted by the country's three biggest mobile network operators in their responses to our recent survey. Below, we look at some of the risks they highlighted.

Economic and financial risks

Economic and financial risks are paramount concerns for companies in Zambia's telecommunications sector due to several interrelated factors.

The country's macroeconomic challenges, including persistent inflation, exchange rate volatility and sluggish economic growth, have strained telecommunications operators' revenue streams. Fluctuations in the value of the kwacha directly impact the cost of importing essential infrastructure and equipment, thereby eroding profitability. Economic instability, characterised by adverse macroeconomic indicators such as currency depreciation, rising inflation and increasing interest rates, further exacerbates these challenges. These factors collectively reduce consumer spending power, diminishing the share of funding allocated to telecommunications services and consequently impacting revenues. Additionally, foreign exchange fluctuations elevate the cost of imports, adding another layer of financial strain. The cumulative effect of these economic and financial risks creates a challenging environment for telecommunications companies.

Regulatory and compliance risks

Zambia's telecommunications industry operates under a dynamic and increasingly complex regulatory framework, shaped by both national legislation and global digital trends. ZICTA, as the sector's primary regulator, plays a central role in enforcing compliance and ensuring service quality across the country.[12]

In 2024, mobile network operators continued to face mounting regulatory pressures, particularly in relation to data protection, cybersecurity and service quality standards. The implementation of two new Acts, the Cyber Security and Cyber Crimes Act (2021) and the Data Protection Act (2021), has introduced stringent obligations

12 2024_annual_market_report.pdf

around data localisation, user privacy and digital infrastructure security. These laws require mobile network operators to invest heavily in secure data storage, monitoring systems and compliance protocols, often at great cost.

ZICTA's regulatory oversight extends beyond legal compliance to include technical performance monitoring, such as real-time quality of service audits and network performance evaluations.[13] Operators are required to meet minimum service benchmarks and failure to do so can result in penalties or public reporting that may affect brand reputation.

Additionally, tariff regulation remains a critical challenge. Any proposed changes to pricing structures or the introduction of new services must undergo a formal approval process. This regulatory bottleneck can delay innovation and limit the ability of telecommunications companies to respond swiftly to market demands or competitive pressures.

The 2024 ZICTA Annual Market Report also highlighted concerns from industry stakeholders about the cost of compliance and the operational burden of navigating overlapping regulatory requirements.[14] For instance, aligning internal systems with both ZICTA's technical standards and broader legislative mandates requires continuous investment in legal, IT and administrative resources.

To thrive in this environment, telecommunications operators must adopt proactive compliance strategies including regular internal audits, staff training and sustained engagement with regulatory bodies. Building collaborative relationships with ZICTA and other stakeholders is essential not only for risk mitigation but also for shaping future regulatory reforms that support innovation and sector growth.

13 Market Research Infographics
14 2024_annual_market_report.pdf

Market saturation and competition

Market saturation and competitive pressure are critical challenges for Zambia's telecommunication sector. As the market approaches saturation in terms of mobile penetration, operators face intense competition. This competitive environment leads to price wars and diminishing returns on traditional services like voice and SMS, putting pressure on profits. The risk of intensified competition is further heightened by the growing presence of non-traditional players, including tech giants like Starlink, which impact traditional revenue streams.

Additionally, there is a continuous fight for skilled professionals in the market, such as software engineers, information security officers, network engineers and fintech experts. This competition for talent adds another layer of complexity, as telecommunications companies must attract and retain these critical skills to remain competitive and innovate in a rapidly evolving industry. The combined effect of market saturation, competitive pressure and the battle for skilled talent necessitates strategic planning and adaptive measures to sustain growth and profitability in Zambia's telecommunications sector.

Infrastructure resilience

Failing to ensure infrastructure resilience and reach presents risks for the telecommunication sector. Operational disruptions can arise from network outages, limited coverage and inadequate disaster preparedness. These issues are further exacerbated by the continuous increase in data usage, which places substantial pressure on existing infrastructure. Additionally, telecommunications infrastructure is prone to vandalism, which can lead to service interruptions and increased maintenance costs. Ensuring robust and resilient infrastructure is crucial to maintaining service quality and meeting the growing demand for data and voice services, while also addressing the challenges posed by vandalism and the digital divide.

Technological evolution and disruption

Technological evolution and disruption are pivotal factors shaping the telecommunication sector. The rapid pace of advancements, including the deployment of 5G, the proliferation of the internet of things (IoT) and the integration of artificial intelligence, or AI, presents both opportunities and inherent risks for the industry. These technologies promise enhanced connectivity, improved service delivery and innovative solutions, but they also require substantial investment and adaptation.

Moreover, competition from emerging players like Starlink, which offers high-speed satellite internet services, introduces an additional layer of disruption to traditional telecommunications markets. This competition challenges established operators, particularly in underserved or rural areas where satellite internet can provide a viable alternative. The telecommunications industry must navigate these technological shifts and competitive pressures to leverage new opportunities while mitigating associated risks.

3.2 Top opportunities

5G expansion

The telecommunications sector in Zambia offers opportunities for mobile network operators, particularly with the expansion of 5G networks. This rollout will enable higher-speed connectivity, supporting advanced use cases like IoT, smart cities and autonomous vehicles, while also driving economic growth through new business models and increased data revenue.

Additionally, 5G will facilitate the development of private networks for industrial automation and enterprise solutions, while extending connectivity to rural areas will bridge the digital divide, fostering economic inclusion and access to digital services. These advancements position Zambia to lead in the digital economy, driving innovation and growth across various sectors.

Digital transformation and vertical market solutions

Digital transformation in Zambia's telecommunications sector offers mobile network operators opportunities through vertical market solutions tailored for industries like healthcare, finance and education. By leveraging connectivity, analytics and AI-driven platforms, these solutions can address specific industry needs. For example, telemedicine solutions enhance healthcare access and quality by enabling remote consultations and monitoring. In finance, digital banking infrastructure facilitates secure and efficient transactions, promoting financial inclusion. E-learning platforms provide accessible and interactive educational content, supporting students and educators in remote and urban areas alike. These advancements drive innovation and efficiency across sectors, contributing to Zambia's overall digital transformation.

Edge computing and cloud services

Investments in data and ICT centres under the Smart Zambia Institute present opportunities for telecommunications companies to offer cloud services, data storage solutions and related IT services. By integrating edge computing with networks, telecommunication companies can provide faster, low-latency services, which are crucial for applications such as gaming, real-time analytics, AR/VR applications and healthcare solutions. For example, edge computing can enhance gaming experiences by reducing latency, support real-time analytics for better decision-making, and enable advanced AR/VR applications in healthcare for remote consultations and immersive medical training. These advancements will drive innovation and efficiency across various sectors in Zambia.

Sustainability and green technologies

The deployment of energy-efficient networks and sustainable operations in Zambia's telecommunications sector offers opportunities to attract eco-conscious consumers and align with global environmental, social and governance (ESG) goals. For example, renewable-powered data centres can reduce carbon footprints and enhance energy efficiency. Energy monitoring solutions enable real-time tracking and optimisation of energy usage, leading to cost savings and reduced environmental impact. Additionally, partnerships for climate tech innovations, such as those in climate-smart agriculture and renewable energy projects, can drive sustainable development and resilience. These initiatives not only support environmental stewardship but also position Zambia as a leader in sustainable practices.

IoT

IoT computing offers opportunities by providing connectivity platforms and managed IoT solutions to support devices and services across various industries, including agriculture, healthcare and infrastructure. In agriculture, IoT can optimise operations through real-time monitoring of soil conditions, weather and crop health, leading to increased efficiency and productivity. In healthcare, IoT enables remote patient monitoring, improving patient outcomes and reducing operational costs. For infrastructure, IoT supports smart city initiatives, enhancing urban management through intelligent traffic systems, energy management and public safety. These advancements drive innovation and efficiency, contributing to the overall digital transformation of these sectors.

Smart phone penetration

The impact of smart phone penetration on data revenue in Zambia is a topic of debate among service providers. Some believe that the continued increase in smart phone penetration presents an opportunity to boost data revenue, as more users adopt smart phones and consume data-intensive services. However, others argue that smart phone penetration remains relatively low, limiting the potential for substantial data revenue growth. This indicates a growing but still developing market, suggesting that while there is potential for increased data revenue, further efforts are needed to enhance smart phone adoption and connectivity.

Digitised economy

Supporting the Zambian government's efforts to digitise the economy is crucial for driving growth and innovation. The National Digital Transformation Strategy (2023-2027) aims to integrate digital technologies across all sectors to enhance productivity, create jobs and promote economic growth. Key areas of focus include expanding digital infrastructure, such as broadband coverage and data centres, developing digital platforms for efficient service delivery, and fostering digital literacy and skills. By aligning with these initiatives, service providers can contribute to a more connected and digitally empowered society, supporting the government's vision of a fully functional digital economy.

Rural penetration

Opportunities for rural penetration in Zambia's telecommunications sector can be enhanced by lowering taxation and reducing the cost of compliance. High taxes and compliance costs are major barriers for service providers looking to expand into rural areas. By implementing tax incentives and streamlining regulatory processes, the government can encourage investment in rural connectivity infrastructure. This would enable service providers to offer affordable and accessible telecommunications services to underserved communities, bridging the digital divide and fostering economic development. Enhanced rural connectivity can improve access to education, healthcare and financial services, driving inclusive growth and improving the quality of life for rural populations.

E-government services

The Zambian government's push for e-government services creates opportunities for revenue growth in the ICT solutions delivery space. By digitising public services through platforms like ZamPortal, the government aims to enhance efficiency, accessibility and transparency. This initiative opens up avenues for ICT service providers to offer solutions such as cloud services, cybersecurity, data analytics and digital platforms tailored to government needs. These services can streamline operations, reduce costs and improve service delivery, driving demand for advanced ICT solutions and contributing to the overall growth of the sector.

04

Top regulatory issues faced by the telecommunications industry and their impact

In a recent survey conducted among Zambia's three biggest telecommunications companies, several regulatory challenges were identified as having significant operational and financial implications. While these regulations are often seen as burdensome, they are rooted in broader national goals such as enhancing digital security, protecting consumer rights and promoting financial transparency.

Compliance with data protection and cybersecurity laws

In the survey, telecommunications operators identified compliance with Zambia's Data Protection Act (2021) and Cyber Security and Cyber Crimes Act (2021) as a major regulatory challenge. However, these laws were introduced with clear national objectives in mind. The Data Protection Act (2021) was enacted to establish a legal framework for the responsible use and protection of personal data. It regulates how personal data is collected, stored, processed and shared, and establishes the Office of the Data Protection Commissioner to oversee compliance.[15] The law aims to safeguard individual privacy, promote trust in digital services and align Zambia with international data protection standards.

The Cyber Security and Cyber Crimes Act (2021) is designed to protect critical information infrastructure, combat cybercrime and ensure national cybersecurity. It mandates the reporting of cyber incidents, regulates cybersecurity service providers and empowers authorities to investigate and prevent cyber threats.[16]

Impact

Telecommunications companies have had to make substantial adjustments to comply with these laws. This includes implementing data localisation measures, investing in cybersecurity infrastructure such as monitoring systems and incident response protocols, and conducting regular audits and training staff on compliance. While these efforts have increased operational costs, they have also led to greater consumer confidence in the safety and integrity of digital services. However, the strict penalties for non-compliance—including fines and potential license suspensions—have heightened operational risks.

15 H:\ACTS FOR 2021\Act No. 3 The Data Protection Act 2021.pmd
16 E:\Acts 2021 2\Acts 2021\Act for 2021\Act No. 2 of 2021The Cyber Security and Cyber Crimes.pmd

Taxpayer identification number (T-PIN) and mobile money levy

The regulatory landscape has also evolved to enhance financial transparency and tax compliance. New regulations include the Income Tax (Amendment) Act No. 24 of 2024 and the Mobile Money Transaction Levy Act No. 25 of 2024.

The Income Tax (Amendment) Act No. 24 of 2024 requires telecommunications companies and mobile money operators to collect a taxpayer identification number (T-PIN) from customers opening or maintaining accounts. This measure is intended to improve tax compliance and broaden the tax base.

The Mobile Money Transaction Levy Act No. 25 of 2024, which was introduced by the Bank of Zambia, imposes a levy on mobile money transactions to generate public revenue and formalise digital financial services.

Impact

These measures have led to increased administrative burdens and compliance costs, including system upgrades, staff training and the hiring of compliance officers. While they support national fiscal goals, they also strain operational efficiency and profitability.

Taxation and tariff regulation

Telecommunications operators face a dual challenge of rising taxation and regulated pricing. Excise duty on data services and telecommunications equipment increases the cost of doing business.

Impact

These constraints reduce profit margins and limit the sector's ability to invest in infrastructure and innovation. They also slow the rollout of affordable internet services, particularly in underserved communities, thereby hindering efforts to bridge the digital divide.

Consumer protection and quality of service standards

ZICTA has implemented stringent quality of service and consumer protection standards to ensure fair treatment and reliable service delivery.

Challenges

Operators must meet minimum quality of service benchmarks and respond promptly to customer complaints or else face penalties.

Impact

While these regulations have improved accountability and service quality, they also require ongoing investments in customer service systems and monitoring tools, adding to operational costs.

Universal service obligations

Telecommunications companies are mandated to contribute to the Universal Access and Service Fund and expand services to rural and underserved areas.

Challenges

Building infrastructure in low-income or remote regions is often financially unviable and the lack of incentives discourages private investment.

Impact

Despite the financial strain, these obligations have led to improved rural connectivity, promoting digital inclusion and access to essential services. However, they also reduce profit margins and may limit future investments in other areas.

05

Impact on data protection laws on the industry

Data protection and privacy laws are essential in today's digital world, giving individuals control over their personal information and fostering trust in various institutions. In Zambia, the significance of these laws is highlighted by recent efforts and frameworks designed to protect citizens' rights amid rapid technological progress and growing data collection practices.

The Zambian government has made notable progress in strengthening its legal framework for data protection. The enactment of the Data Protection Act (2021) was a major step in regulating the collection, use and management of personal data. This law aims to bring Zambia in line with international standards while addressing the urgent need to shield individuals from data misuse and privacy violations.

Key provisions include:

- Enhanced privacy and security: Telecommunications companies and other data controllers must implement robust measures to protect personal data, ensuring it is securely collected, processed and stored to prevent unauthorised access or breaches.
- Consent and transparency: The Act requires explicit consent from individuals before processing their personal data, increasing transparency and informing customers about how their data is being used.
- Rights of data subjects: Individuals have the right to access, rectify and erase their personal data, as well as object to its processing. The Act also provides for data portability and the right to restrict processing.
- Cross-border data transfer: The Act sets conditions for the transfer of personal data outside Zambia, ensuring that such transfers are conducted in a manner that protects the data subjects' rights.

These measures align Zambia with international best practices and address the growing need to protect individuals from data misuse and privacy infringements in an era of rapid technological advancement.

06

Cybersecurity in Zambia: progress, challenges and strategic outlook

Zambia has made notable strides in strengthening its cybersecurity landscape, reflecting a growing national commitment to digital resilience and data protection. According to the International Telecommunication Union's 2024 Global Cybersecurity Index, Zambia's cybersecurity score has improved markedly since 2018, signalling a transformation from a nascent cybersecurity framework to a more structured and proactive national approach.

Key drivers of progress

This upward trajectory has been driven by advancements across five core pillars:

- Legal measures
  Zambia has enacted foundational legislation such as the Cyber Security and Cyber Crimes Act (2021) and the Data Protection Act (2021). These laws provide a legal framework for prosecuting cybercrime, protecting personal data and regulating digital service providers.
- Technical measures
  The establishment of the Zambia Computer Incident Response Team and the implementation of national cybersecurity standards have enhanced the country's ability to detect, respond to and mitigate cyber threats.
- Organisational structures
  Dedicated institutions and inter-agency coordination mechanisms have been developed to oversee cybersecurity governance and policy implementation.
- Capacity building
  Zambia has invested in training programmes, awareness campaigns and academic partnerships to build local cybersecurity expertise and promote a culture of digital safety.
- International cooperation
  The country has actively engaged in regional and global cybersecurity initiatives, fostering collaboration with international partners to share intelligence and best practices.

Insights from PwC Zambia

PwC Zambia's recent publications highlight that cybersecurity is now a top concern across sectors, particularly in banking and telecommunications. The 2024 Banking Industry Survey revealed that the digitisation of financial services has increased exposure to cyber threats, prompting banks to invest in robust cyber defences, including real-time monitoring systems, incident response protocols and staff training.[17]

PwC also notes that while regulatory compliance has improved, cybersecurity maturity remains uneven across industries. Many organisations still face challenges in aligning their cybersecurity strategies with business objectives, managing third-party risks and responding effectively to sophisticated cyberattacks.

17 Zambia Banking Industry Survey Report

Challenges ahead

Despite the progress, Zambia faces several ongoing challenges:

- Resource constraints in implementing advanced cybersecurity technologies.
- Limited skilled personnel, especially in rural and underserved areas.
- Rapid digital transformation outpacing regulatory and technical readiness.
- Growing cybercrime sophistication, including phishing, ransomware and financial fraud.

Strategic outlook

Zambia's improved ranking in the Global Cybersecurity Index highlights its growing role as a proactive participant in the global cybersecurity landscape.[18] To maintain this momentum, the country must continue investing in cybersecurity infrastructure and education, strengthen public-private partnerships for effective threat intelligence sharing, enhance regulatory clarity and enforcement mechanisms, and promote widespread cyber hygiene practices among citizens and small businesses to build a more resilient digital ecosystem.

18 Global Cybersecurity Index

07

ICT sector's recent trends and innovations

Regulatory developments by ZICTA

ZICTA has played a key role in fostering a competitive ICT sector. In 2024, the authority granted 93 licenses for electronic communication networks and services, a slight decline of 1.1% compared to the 94 licenses issued in 2023.[19] This followed an increase from 84 licenses in 2022. Notably, the 2023 expansion included the licensing of three companies focused on delivering international data connectivity. A major advancement in Zambia's digital infrastructure came with the official launch of SpaceX's Starlink satellite internet service in October 2023[20], made possible through ZICTA's regulatory facilitation.

Strategic ICT development and digital transformation

The announcement of Zambia's ICT development framework by the Honourable Felix C. Mutati, Minister of Technology and Science, marked a pivotal step in the nation's digital progress. The release of the ICT Policy and the Digital Transformation Strategy outlines the sector's medium-term goals, providing a structured path for technological advancement[21]. The introduction of 5G connectivity and embedded SIM (eSIM) technology reflects the country's commitment to innovation. These technological strides are not only improving user experiences but are also accelerating the digitalisation of key industries, signalling a new era in Zambia's economic transformation.[22, 23]

19 ZICTA 2024 Annual report
20 Starlink—Satellite network licensed to operate—Ministry of Technology and Science
21 Transforming African Digital Systems—Ministry of Technology and Science
22 National ICT Policy 2023
23 PwC Zambia 2024 Economic Review and 2025 Outlook

08

Environmental, social and governance

The telecommunications sector in Zambia is pivotal to the nation's economic development and connectivity. As sustainability becomes a critical business imperative, integrating ESG considerations is essential. This section outlines the ESG landscape in Zambia's telecommunications sector, emphasising the importance of sustainability reporting, regulatory compliance and strategic opportunities.

Impact of climate change

The telecommunication sector in Zambia is not immune to the impacts of climate change, which affects the quality of service. Load shedding and fuel shortages, exacerbated by prolonged droughts such as the one experienced during the 2024/2025 rainy season, severely compromise site availability and network stability. These disruptions lead to frequent service interruptions and degraded performance, posing substantial challenges for telecommunications operators. Ensuring reliable service amid these environmental challenges requires robust contingency planning and investment in resilient infrastructure to mitigate the adverse effects of climate change and maintain network stability.

Environmental considerations

Zambia's environmental regulatory framework, while not explicitly ESG focused, provides a robust foundation for environmental governance. Some of the key legislation includes:

- Regulatory compliance: Adhering to Zambia's Environmental Management Act No. 12 of 2011, which mandates environmental impact assessments and pollution control measures.[24]
- Sustainable practices: Implementing energy efficient technologies, managing e-waste responsibly and reducing carbon footprints are crucial for telecommunications companies to align with global sustainability standards.
- Biodiversity conservation: Complying with the Forest Act No. 4 of 2015[25] and the Wildlife Act of 2015[26] to ensure sustainable forest management and wildlife conservation.

Telecommunications companies must ensure compliance with these regulations, particularly in managing e-waste, reducing carbon footprints and promoting energy-efficient technologies.

24 Environmental, Social & Governance Laws and Regulations Report 2025 Zambia
25 The Forest Act | National Assembly of Zambia
26 The Zambia Wildlife Act, 2015.pmd

Social considerations

Social aspects of ESG in the telecommunications sector focus on community engagement, employee welfare and customer satisfaction.

- Community engagement: Telecommunications companies are encouraged to support local communities through initiatives such as digital literacy programmes, infrastructure development in underserved areas and partnerships with educational institutions.
- Employee welfare: Ensuring fair labour practices, promoting diversity and inclusion and providing safe working conditions are essential for maintaining a motivated and productive workforce.
- Customer satisfaction: Maintaining high standards of service quality, data privacy and customer support is critical for building customer trust and loyalty.

Governance considerations

Effective governance in the telecommunications sector involves transparent reporting, ethical business practices and robust risk management.

- Transparency and reporting: Adopting global reporting standards such as the Global Reporting Initiative and guidelines from the Global Systems for Mobile Communication Association to measure, manage and report ESG impacts.[27]
- Ethical business practices: Implementing anti-corruption measures, ensuring compliance with local and international regulations and fostering a culture of integrity are vital for long-term success.
- Risk management: Identifying and mitigating risks related to cybersecurity, regulatory changes and market dynamics is crucial for maintaining business continuity and resilience.

27 Connecting to a Sustainable Future: ESG in the Telecommunications Industry—ESG Simplified

Challenges and opportunities

The integration of ESG into the telecommunications sector in Zambia presents both challenges and opportunities.

- Challenges: Limited regulatory frameworks specifically dedicated to ESG and lack of awareness and expertise in sustainability practices and financial constraints.
- Opportunities: Enhancing brand reputation, attracting investment, improving operational efficiency and contributing to national development goals such as those outlined in the Eighth National Development Plan.[28]

As Zambia's telecommunications sector continues to grow, integrating ESG considerations is essential for sustainable development. By adhering to environmental regulations, engaging with communities, ensuring ethical governance and addressing challenges, telecommunications companies can make a notable contribution to the country's economic and social progress while safeguarding the environment.

Quantification of energy deficit

The energy deficit in Zambia has severely impacted telecommunication operators like MTN Zambia, Airtel Zambia and Zamtel. Prolonged power blackouts, sometimes lasting up to 13 to 14 hours daily, have led to increased operational costs and compromised service quality.

Telecommunications operators rely heavily on backup generators, which are costly to maintain and refuel. The energy crisis has pushed these systems beyond their intended capacity, leading to frequent servicing and higher expenses. Additionally, the removal of fuel subsidies and rising fuel prices have further escalated costs.

To mitigate these challenges, operators are exploring sustainable solutions like solar-based backup systems to enhance energy resilience. This shift towards renewable energy is crucial for maintaining service quality and reducing operational costs in the long term.

28 The State of Sustainability Reporting

09

Conclusion

Zambia stands at a pivotal point in its digital transformation. The rapid evolution of its telecommunications and ICT sectors, driven by liberalisation, strategic reforms and technological innovation, has laid a strong foundation for inclusive growth. Yet, to fully harness the benefits of this progress, deliberate action is needed to address structural challenges, particularly the high cost of regulation, uneven rural connectivity and gaps in digital literacy. The momentum built through initiatives like the Smart Zambia Institute, the rollout of 5G and the entry of global tech players must now be matched by forward-thinking policies and targeted investments that ensure no one is left behind in the digital economy.

To fully realise the sector's potential, the persistent challenges faced by the sector, such as the high cost of regulation, limited rural connectivity and digital skills gaps, need to be addressed. Policymakers and stakeholders must work collaboratively to create an enabling environment that supports innovation, reduces barriers to entry and ensures equitable access to digital services. With continued investment, strategic partnerships and inclusive policy reforms, Zambia is well-positioned to become a regional leader in digital transformation and to build a future where all citizens can benefit from the opportunities of a connected economy.

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