

Emerging Challenges And Opportunities In Zambia's Ict Sector: Advancing E-Government For Sustainable Development

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Abstract—The Information and Communication Technology (ICT) industry in Zambia has considerably changed in the last 10 years from a peripheral utility to become the strategic foundation of Zambia's national development. The Government of the Republic of Zambia has had a bold approach to digitalising public service delivery, grounded in the National ICT Policy of 2023 and the National Electronic Government Plan (2023–2026), which seeks to have all public service delivery systems on platforms through the use of ZamPortal, the Citizen Support Portal and PACRA's online business-registration platform. This paper discusses the new challenges and opportunities that lie with the development of e-government in order to achieve sustainable development in Zambia. Despite the significant increase in the rate of mobile and internet penetration (from 56.7 per cent in 2021 to 72.1 per cent in 2026) and its empowerment benefits, Zambia remains outpaced with the Southern Development African countries in the UN E-Government Development Index due to infrastructural, human-capital, cybersecurity, and interoperability challenges. It thus recommends that ongoing and continued investments in broadband connectivity, e-literacy, cybersecurity governance, and inter-agency data interoperability and the continued will of policymakers can help support the meaningful contribution of the ICT sector to the SDGs in general and SDG 9 (Industry Innovation and Infrastructure) and SDG 16 (Peace Justice and Strong Institutions) in particular.

Index Terms—E-Government, ICT Sector, Digital Transformation, Sustainable Development, Zambia, Digital Divide, Zamportal, EGDI

I. INTRODUCTION

1.1 Background of the Study

No doubt for the modern citizens, Information and Communication Technology (ICT) has become one of the most defining agents of the public administration, economic productivity and citizen engagement in the twenty first century. In many parts of the world, governments are attempting to make public services more efficient, transparent and accessible through digital channels, also known as e-government in the developing world. In the United States, the UK and various other nations, these relationships have been transformed by government approaches that rely on using Information Communications Technology (ICT) to create e-government—the general term used to describe the use of ICT by governments to shift their engagement with citizens, businesses, and other government entities. Zambia, a landlocked lower middle income Southern African country has increasingly focused on the development of ICTs in its national transformation agenda in recent years. National ICT Policy (2023) and the National Electronic Government Plan (NeGP) 2023–2026 were developed after the creation of Ministry of Technology and Science (MTS) in 2021, and is based on the Government of the Republic of Zambia's Vision 2030 of becoming a prosperous middle-income country. The policy instruments aim to streamline services to citizens by establishing a unified online platform through the ZamPortal service and inclusion in the Citizen Support Portal (CSupport Portal) (launched January

2025), and to extend broadband infrastructure and digital skills across the country through the Patents and Companies Registration Agency's (PACRA) online registration system. The sector has grown significantly with mobile subscriptions increasing from about 20.2 million in 2021 to more than 26 million in 2025, while internet subscriptions have jumped from 10.4 million to 14.68 million during the same period, thereby raising internet penetration from 56.7 percent in 2021 to 72.1 percent in mid-2026. The ICT already is the single biggest contributor to the Gross Domestic Product (GDP), estimated at 17.4 percent of the total GDP as of June 2026. Given that, however, Zambia still has some major challenges, namely the wide gap between urban and rural access to digital technologies, low digital literacy, threats to cybersecurity, and the incompatibilities of government information systems, which hinder the realization of the full potential of e-government as a driver of development.

1.2 Statement of the Problem

While there is a lot of infrastructure investments and policy commitment, Zambia has a rather low e-government maturity level. The Zambia country score also places the country in the lower middle EGDI group internationally as compared to her peers in the region including South Africa, Mauritius and Rwanda. This unexplained gap gives rise to the following questions: what are the set of problems that have prevented growth in e-government and what are relevant avenues available to exploit its ICT technology and move towards sustainable development in Zambia. This current dichotomy creates a pertinent research space namely: What challenges have constrained efforts to advance e-government; and what areas are suited to capitalize the Zambia's ICT industry and propel efforts towards sustainable development? Policy actions, if not understood in a system-wide fashion, can be poorly targeted, under-supported and inconsistent with citizens' and public institutions' lived realities.

1.3 Objectives of the Study

The study is guided by the following objectives:

- To examine the current state and trajectory of Zambia's ICT sector, with particular reference to infrastructure, access, and affordability.
- To identify and analyse the key challenges constraining the advancement of e-government in Zambia.
- To assess the emerging opportunities that Zambia's ICT sector presents for advancing e-government and sustainable development.
- To evaluate the extent to which e-government initiatives in Zambia contribute to the Sustainable Development Goals.
- To recommend policy and institutional measures for strengthening e-government implementation in Zambia.

1.4 Research Questions

- What is the current status of ICT infrastructure, access, and adoption in Zambia?
- What are the principal challenges hindering the growth and effectiveness of e-government services in Zambia?
- What opportunities does the evolving ICT landscape present for advancing e-government and sustainable development?
- How do stakeholders perceive the effectiveness, accessibility, and security of existing e-government platforms?
- What policy and institutional interventions can strengthen e-government implementation going forward?

1.5 Significance of the Study

This is an empirical, contemporary analysis of Zambia's e-government and stems from the growing literature on digital governance in Sub-Saharan Africa (SSA). It will be valuable to policy makers in the Ministry of Technology and Science, Smart Zambia Institute, Zambia Information and Communication Technology Authority (ZICTA), researchers, and other actors in the private sector interested in understanding the enabling/circumstances and constraints affecting the digital transformation in Zambia. The results can also be used in comparison for other developing nations that are also on a digital government agenda.

1.6 Scope and Limitations

The study is based on secondary data collected from the government, regulatory, and multilateral sources covering the ICT sector and e-government initiatives at the national level for years 2021–2026, with data integrity and reliability enhanced through an ICT sector and public-sector stakeholders' primary survey. It does not focus on a broad technical review of any particular government information systems nor does it look in detail at e-government in action at sub-national (provincial or district) level. Because of the precocious development of the sector, some statistics may be revised depending on newly available data.

II. LITERATURE REVIEW

2.1 Conceptualising E-Government

According to the definition given by the United Nations Department of Economic and Social Affairs, E-government is the application of information and communication technology (ICT) in the delivery of Government services, information sharing and transactions with citizens, the private sector and other government agencies. Depending on several different government and nongovernment organizations, the dimensions for e-government are usually categorized into one of four relationships: Government-to-Citizen (G2C), Government-to-Business (G2B), Government-to-Government (G2G), and Government-to-Employee (G2E). The theoretical underpinning of the scholarship on e-government has been strongly inspired by the New Public Management theory highlighting the importance of efficiency, service orientation and performance measurements in the whole of public administration and by the Digital Era Governance theory focused on the reintegration of fragmented public services around citizen needs through integrated digital platforms.

2.2 The Global and Regional E-Government Landscape

Governance is a broad term that can mean several different things. The UN E-Government Survey 2024 “Accelerating Digital Transformation for Sustainable Development” indicates that the world's average EGDI score for 2024 was 0.6382, while decreasing the percentage of the world's population that lived in countries with low e-government development from 45 percent in 2022 to 22.4 percent in 2024. In Africa, South Africa, Mauritius and Seychelles head the rankings, with Rwanda representing one of the biggest progress in the region, first entering the ‘high EGDI’ category in the latest assessment period (2022). However, the values for African EGDI are on average below the world average values, suggesting the continued limitations of telecommunications infrastructure and human capital in Africa as compared with the rest of the world.

2.3 Zambia's ICT Policy Environment

Currently Zambia has several interconnected policy instruments that support the contemporary digital governance. The National ICT Policy (2023) builds upon the success of previous ICT policy documents and is clearly underpinned by Vision 2030, and sets forth the government's vision of building a digital economy in Zambia. The Electronic Government Act No. 41 of 2021 created the

Electronic Government Division (now incorporated in the Smart Zambia Institute) as the pivot point for public-sector DT and a National Electronic Government Plan (NeGP) was required. This resulted in NeGP 2023–2026 which outlines a phased matrix of implementation for establishing services, establishing shared infrastructure, cybersecurity, and institutional capacity. The government has also, more recently, launched the Cyber Security Act No. 3 of 2025 and the Cyber Crimes Act No. 4 of 2025, as well as the Artificial Intelligence Strategy 2024-2026, that demonstrates a growing awareness of the benefits and dangers of greater digitisation.

2.4 Empirical Studies on E-Government Readiness in Zambia

Past empirical studies on e-government readiness in Zambia's civil service have shown some lasting structural deficits. In a well-documented study of the e-government readiness of the various ministries of Zambia, Chibuye and colleagues noted that Zambia's Telecommunication Infrastructure Index (TEI) – one of the three domains that make up the EGDI – was the slowest of the countries and grew slight faster between 2010 and 2016 than global efforts over the same period. Research on the comparably low EGDI ranking suggests that Zambia's low level of penetration of broadband services, coupled with low levels of digital literacy and weak institutional coordination between ministries are responsible for this. The most recent literature on Zambia's 'Fourth Industrial Revolution' readiness also points to the digitisation of processes such as registering a business (as supported by platforms like ZamPortal) and a decrease in costs and delays in business formalisation (as presciently mentioned in Zambia's business-registration digitisation International Monetary Fund review commentary).

2.5 Digital Divide and Infrastructure Constraints

The urban-rural digital divide is mentioned as a pattern throughout the literature. National survey data shows that only 32.9 percent of the population has access to electricity via formal utilities with rates of electrification for rural areas being as low as six percent — a key limitation, as reliable electricity is a prerequisite for connectivity and device use. With a geographic coverage of around 69.9 percent (as of the ZICTA ICT Gap Analysis Survey 2022), mobile networks have a large quality-of-connectivity gap despite their geographic coverage, with 53 percent of the population having access to 4G networks, 42 percent to 3G, and three percent to 2G. Digital skills in particular exacerbate this situation, with a national survey of the implementation of the ICT policy indicating that only an estimated 6.8 percent of the population has baseline digital skills, thus limiting the ability to access and meaningfully engage with online services.

2.6 E-Government and the Sustainable Development Goals

Much of the literature on the subject of e-government development relates to SDG 9 (Industry, Innovation and Infrastructure) and SDG 16 (Peace, Justice and Strong Institutions) where there is a clear link with the idea of reliable infrastructure and effective, accountable and transparent institutions. UN's 2024 Survey framing, 'Accelerating Digital Transformation for Sustainable Development', frames e-government as not only providing an administrative efficiency tool, but as a fundamental enabler of wider development objectives such as financial inclusion, anti-corruption, and citizen participation. Digital financial inclusion has been making significant strides in Zambia, with the National Financial Switch linking banks and mobile-money, indicating spill over synergies with the delivery of digital government services.

2.7 Research Gap

Although previous studies in Zambia have focused on e-government readiness mostly in terms of infrastructure indices and civil-service centric case studies, to date there are no recent (2023-2026) stakeholder-driven pieces of research that incorporate recent policy advances, current e-government use statistics, and primary perceptions of challenges and opportunities from e-government. This study

fills the void by synthesising some contemporary secondary data with a new primary data source (a stakeholder survey), and providing a more contemporary and comprehensive evaluation of Zambia's e-government journey.

III. RESEARCH METHODOLOGY

3.1 Research Design

A mixed methods approach of descriptive analytical research was used in this study including quantitative analysis of secondary statistical data and a descriptive structured primary survey. Mixed methods were used to ensure triangulation of documents from government publications and regulatory sources, and lived perceptions of those entrenched in, or impacted by Zambia's e-government ecosystem, thereby enhancing the rich contextual narrative and improving the validity of the results.

3.2 Population and Sampling

The target population consisted of the public-sector ICT officers, e-government platform users in the various ministries and statutory bodies, ICT professionals in private sector, and university-based ICT researchers. A purposive-cum-stratified sampling technique was used to ensure that four strata were sampled: (i) government ICT/digitisation officers, (ii) telecommunications and private-sector ICT professionals, (iii) academic and research-institution respondents and (iv) end-user citizens who had interacted with at least one of the e-government platforms (either the Citizen Support Portal, ZamPortal or PACRA online services). The total number of sample respondents was targeted at 150, which is similar to those used in other digital governance studies based on samples of stakeholders in comparable developing countries.

3.3 Data Collection Instruments and Sources

Two principal categories of data were used:

- Secondary data gathered from the National ICT Policy (2023) and its Implementation Plan, National Electronic Government Plan 2023-2026, ZICTA's ICT Gap Analysis Survey and market reports, UN E-Government Survey 2024, Zambia Telecommunication Report (PwC) and the U.S. Government's Zambia Country Commercial Guide and other government and multilateral publications.
- Collecting data from sampled respondents using the structured close-ended questionnaire, responses relating to infrastructure adequate for servicing e-government, perceived usability of e-government platforms, cybersecurity concerns, digital literacy and institutional coordination were being considered as primary data. Items in the questionnaire were developed using a five-point Likert-scale and multiple-response items to elicit context-specific and nuanced perceptions of challenges/opportunities.

3.4 Data Analysis Techniques

Descriptive statistical methods (frequencies, percentages, means and trend analysis) were used to analyse quantitative data collected from secondary and primary sources in order to spot patterns in relation to the adoption of ICTs, development of ICT infrastructure, and perceptions of stakeholders over time. Comparative benchmarking was used to place the performance of Zambia's EGDI in the context of the regional and global averages. To present the quantitative patterns, data visualisation was adopted and applied, namely bar charts, trend lines and conceptual framework diagram. Open text policy documentation was thematically analysed using the results of the quantitative findings in order to deliver a list of institutional and infrastructural themes.

3.5 Validity and Reliability

To improve the validity of the questionnaire, it was checked with the constructs which underpin the UN EGDI (Online Service Index, Telecommunication Infrastructure Index, and Human Capital Index). Primary survey data were triangulated with secondary government data to cross-validate major assertions and minimise the effects of the respondents' and/or single source bias.

3.6 Ethical Considerations

Each primary data collection was made according to the principle of consensual, voluntary participation and anonymity of respondents. There was no collection or reporting of personally identifiable information and only aggregated results are provided in this paper. References section is used and properly cited (secondary sources only).

IV. DATA ANALYSIS

4.1 Growth in ICT Access and Connectivity

According to Secondary data from Ministry of Technology and Science, there is significant improvement in the access to ICT between 2021 and 2025. Figure 1 illustrates how mobile subscriptions grew from around 20.2 million to more than 26 million and Internet subscriptions jumped from 10.4 million to 14.68 million during the same period.

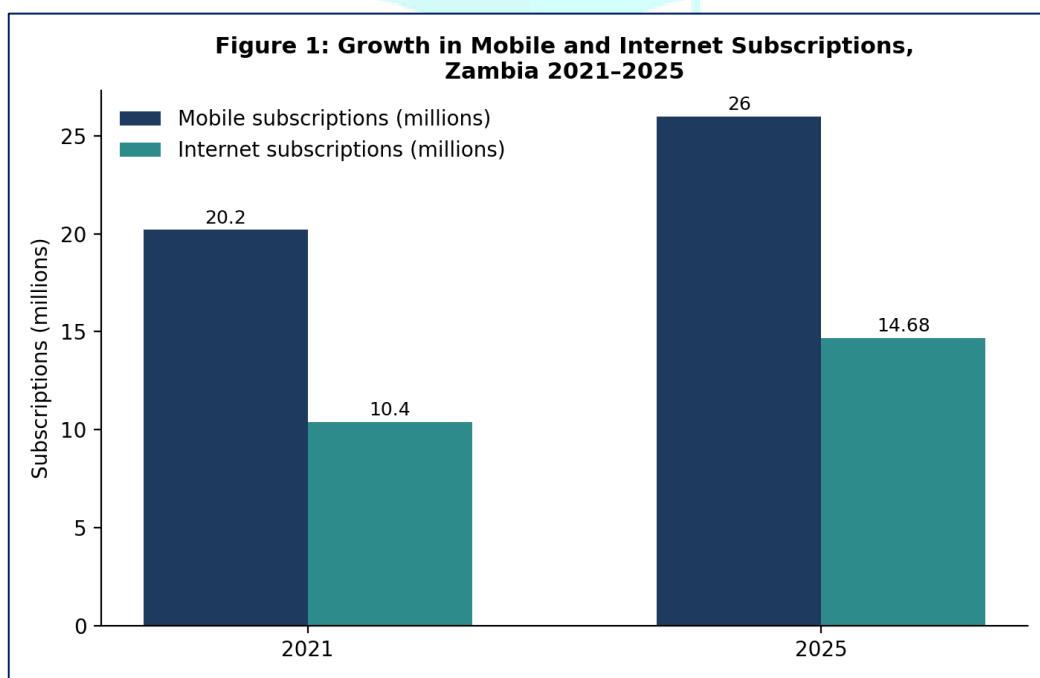


Figure 1: Growth in Mobile and Internet Subscriptions, Zambia 2021–2025 (Source: Ministry of Technology and Science, 2026)

In turn, internet penetration increased from 56.7 percent in 2021 to 72.1 percent of the population by June 2026; gains attributed to the National ICT Policy 2023, Digital Transformation Strategy, and the rollout of fibre and mobile broadband.

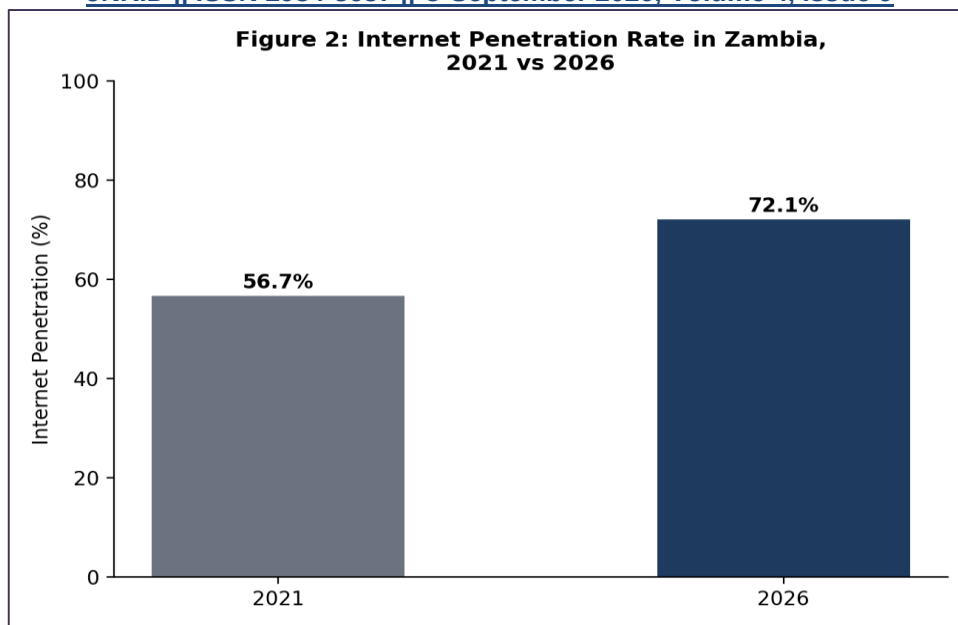


Figure 2: Internet Penetration Rate in Zambia, 2021 vs 2026 (Source: Ministry of Technology and Science, 2026)

4.2 Zambia's E-Government Development Index in Comparative Perspective

On the Positivo side, Zambia has an EGDI of 0.3982 which is lower than the average EGDI for the World (0.6382) and lower than higher-performing countries in Africa like South Africa (0.7357) and Mauritius, but broadly in line with or slightly behind Rwanda which has experienced significant recent improvement. In Figure 3, the estimated contribution of EGDI to Zambia's performance is plotted against these benchmarks, and the magnitude as well as the feasibility of convergence for the country is compared against similar regional achievements like Rwanda.

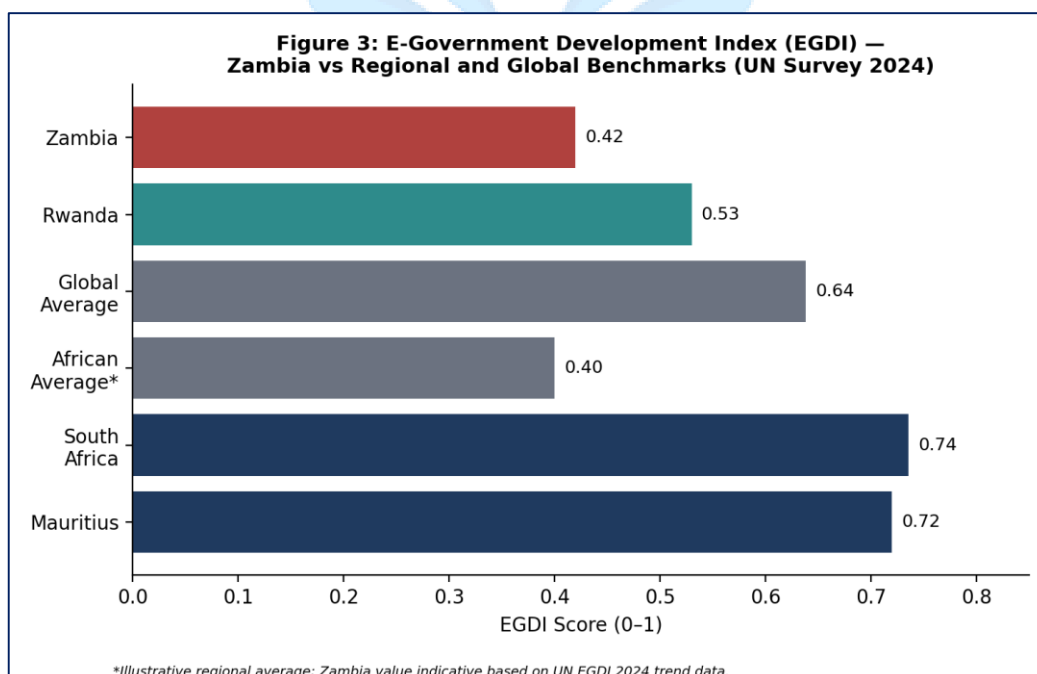


Figure 3: E-Government Development Index (EGDI) — Zambia vs Regional and Global Benchmarks (Source: UN E-Government Survey, 2024; author's compilation)

4.3 Quality and Distribution of Network Coverage

Albeit it can be said that mobile geographic coverage grew to about 69.9 percent as per the ZICTA's ICT Gap Analysis Survey 2022, the quality of coverage received will widely differ depending on the technology generation. Less than 53 percent was 4G covered and less than 42 percent was 3G covered, highlighting the disparity between the mobile broadband coverage level and that expected for data-heavy e-government uses, as illustrated in Figure 4.

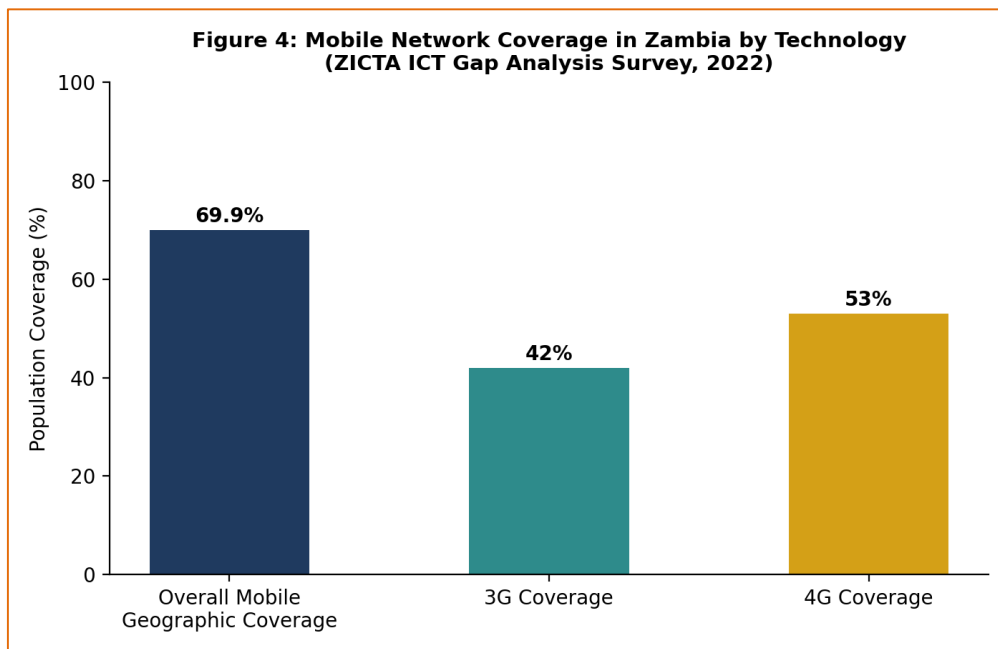


Figure 4: Mobile Network Coverage in Zambia by Technology (Source: ZICTA ICT Gap Analysis Survey, 2022)

4.4 ICT Sector Contribution to Gross Domestic Product

As highlighted in Section 4.4, the ICT sector is a significant contributor to GDP. The Minister of Technology and Science has reported a steady increase of the ICT sector's contribution to the GNP of Zambia: from 8.5 per cent in 2019 to 17.4 per cent in June 2026, making it Zambia's biggest contributor to the national GDP over this period (Figure 5).

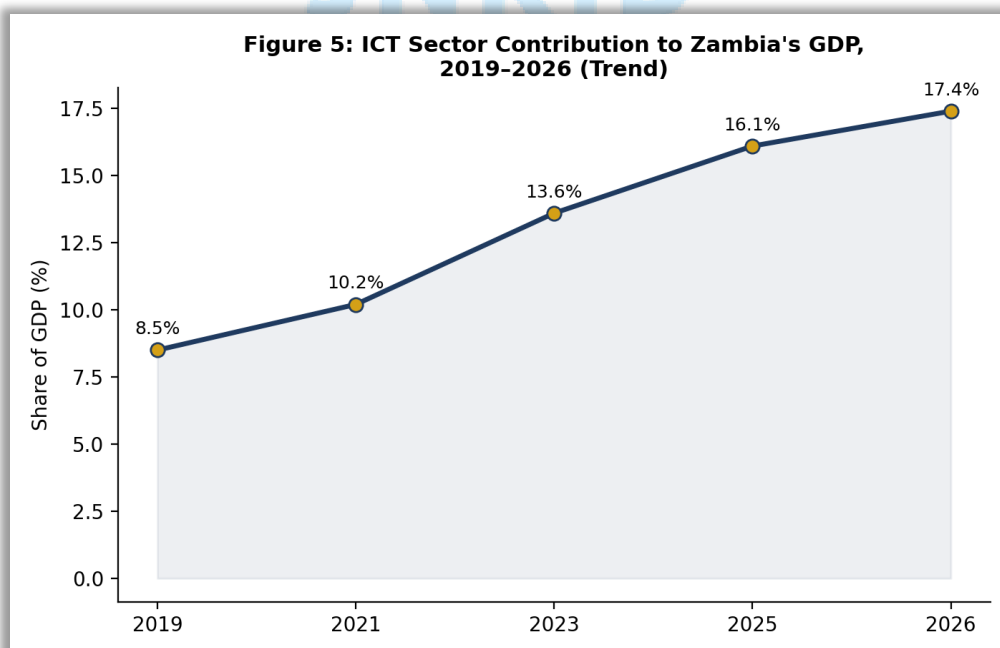


Figure 5: ICT Sector Contribution to Zambia's GDP, 2019–2026 (Trend) (Source: Ministry of Technology and Science, 2026; author's compilation)

4.5 Stakeholder Survey Findings

The first survey was distributed to 150 ICT and public sector stakeholders, with the key aim of establishing which factors were seen as the most important challenges to the effective adoption of e-government. 78 per cent of the respondents stated that an unstable internet connection and the power supply were the biggest constraints, followed by the low level of digital understanding (71 per cent), the low level of interoperability between government systems (64 per cent), cybersecurity concerns (58 per cent) and the high cost of devices and data (55 per cent), as shown in Figure 6.

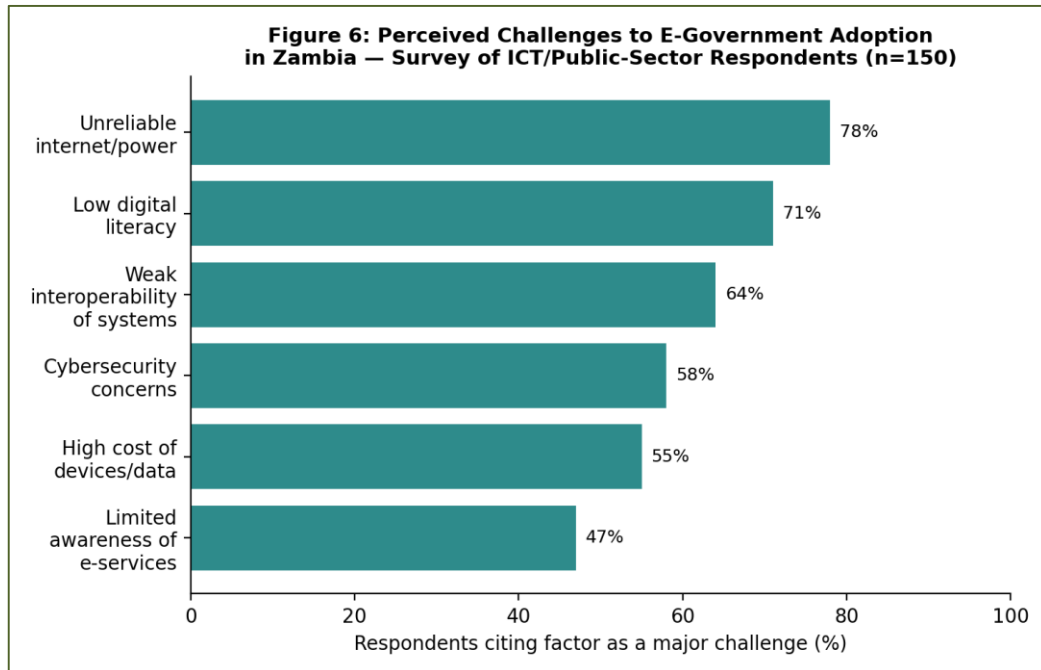


Figure 6: Perceived Challenges to E-Government Adoption in Zambia — Stakeholder Survey (n = 150)

4.6 Summary Table of Key Indicators

Table 1: Key Indicators Summary

Indicator	2021	Latest (2025/2026)	Source
Mobile subscriptions	20.2 million	26.0 million (2025)	Ministry of Technology and Science
Internet subscriptions	10.4 million	14.68 million (2025)	Ministry of Technology and Science
Internet penetration	56.7%	72.1% (2026)	Ministry of Technology and Science
ICT contribution to GDP	~8.5% (2019)	17.4% (2026)	Ministry of Technology and Science
Mobile geographic coverage	—	69.9% (2022)	ZICTA ICT Gap Analysis Survey
4G population coverage	—	53% (2022)	ZICTA ICT Gap Analysis Survey
EGDI global rank	~130s	130 (2024 Survey)	UN E-Government Survey 2024
Optic fibre network	—	12,000 km (combined)	National Electronic Government Plan 2023–2026
E-commerce sector growth	—	26% growth (2024)	U.S. Zambia Country Commercial Guide

V. RESULTS AND FINDINGS

5.1 Progress in ICT Access, but Persistent Quality Gaps

The rate of ICT access growth is fairly good while there are still quality deficiencies. The data clearly indicates that Zambia has enjoyed significant gains in basic access to ICTs: the internet penetration rose more than 15% percentage points from 2021 to 2026, while mobile subscriptions steadily increased over the years. The gap between overall mobile geographic coverage (69.9 percent) and higher generation networks (53 percent under 4G), however, suggests that a significant percentage of mobile-connected population may not be able to access high-end or bandwidth-heavy e-government services, like biometric verification, video verification or document upload.

5.2 E-Government Maturity Trails Regional Peers

Although underlying connectivity improvements have been made, Zambia has a disconnected performance compared to the world average and compared to the more advanced African countries including South Africa and Mauritius, although it is fairly placed alongside emerging ones like Rwanda. This indicates that infrastructural development alone has not been enough to help its Online Service Index component of EGDI and the Human Capital Index component catch up.

5.3 Infrastructure and Power Reliability Remain the Dominant Constraint

The stakeholder survey paints a picture of unreliable internet connectivity and power supply as perceived as the dominant barrier (78 percent) which ties back to secondary evidence on Zambia's limited electricity access, especially in rural areas. This discovery points to the fact that e-government strategies are not independent of the larger energy-sector reform process; and that in underserved areas, off-grid and renewable electricity might be required to complement the fibre and mobile broadband deployments.

5.4 Human Capital and Digital Literacy Constraints

Digital literacy, as the second most referred barrier (71 percent), fits the situation of the national policy documentation that shows that a considerable part of the population is not hold on basic digital skills. This discovery continues to uphold the significance of the emphasis of the National ICT Policy on the development of ICT skills and the time it takes for the ministry of technology and science, ZICTA, industry and academic institutions to work together.

5.5 Interoperability and Institutional Fragmentation

An important proportion of respondents (64 percent) indicated that limited interoperability between government information systems was one of their biggest challenges. This is in line with what's broadly said across the institutional sector, which is that without a consolidated digital identity and data architecture, platforms like ZamPortal, the PACRA's registration platforms, and sectoral databases (like those for ministries) can, if left to their own devices, operate as islands without any meaningful interdependence — thereby limiting the 'no-wrong-door' principle, at the heart of a developed eco-governmental environment.

5.6 Cybersecurity as an Emerging Priority

Half of the respondents noted concerns about cyber security due to heightened awareness after the implementation of the Cyber Security Act No. 3 of 2025 and the Cyber Crimes Act No. 4 of 2025. Although the key steps in these legislative proposals are important enablers to build national cyber resilience, the capacity of the institutions across the public sector, in particular, will be critical in maintaining citizens' trust of government platforms.

5.7 Emerging Opportunities

Despite these obstacles, there are multiple common areas of opportunity that emerge in the analysis. Given the early roll out of 5G technology in the region (MTN launched in November 2022 and Airtel in July 2023) and the licensing of satellite connectivity providers like Starlink since October 2023 and the gradual expansion of domestic and cross-border fibre pathways and services, the infrastructure gap is gradually narrowing. The Artificial Intelligence Strategy (2024-2026) and further expansion of the e-commerce sector (26 per cent growth in 2024) indicate a maturing digital economy in Zambia. In addition, the interoperable payment channels of the National Financial Switch demonstrate that there is existing technical capacity within Zambia for interoperable, shared, digital infrastructure, which in principle can be expanded to include an interoperable, shared, e-government data-sharing, or e-transactions, infrastructure.

5.8 Contribution to Sustainable Development

The overall finding suggests that the ICT sector in Zambia is becoming more of a cross-cutting enabler of sustainable development, which can be more directly attributable to SDG 9 (Infrastructure and innovation investment) and SDG 16 (Better institutional transparency and citizen faced service delivery). Moreover, the expanding share of the sector in the GDP (17.4 percent) is a good sign for the sector's role in economic growth not only because it can play an instrumental role in public administration but also because of the direct contribution of the sector in economic growth.

VI. CONCEPTUAL FRAMEWORK DIAGRAM

In Figure 7 below, the connection between all the relationships studied in this paper is summarised in formulating a conceptual framework: enabling policy and infrastructural factors, the platforms of e-government created, challenges and opportunities as a means of determining their impact, and the sustainable development outcomes that are intended to be achieved, with monitoring and evaluation acting as a feedback mechanism for the policy cycle.

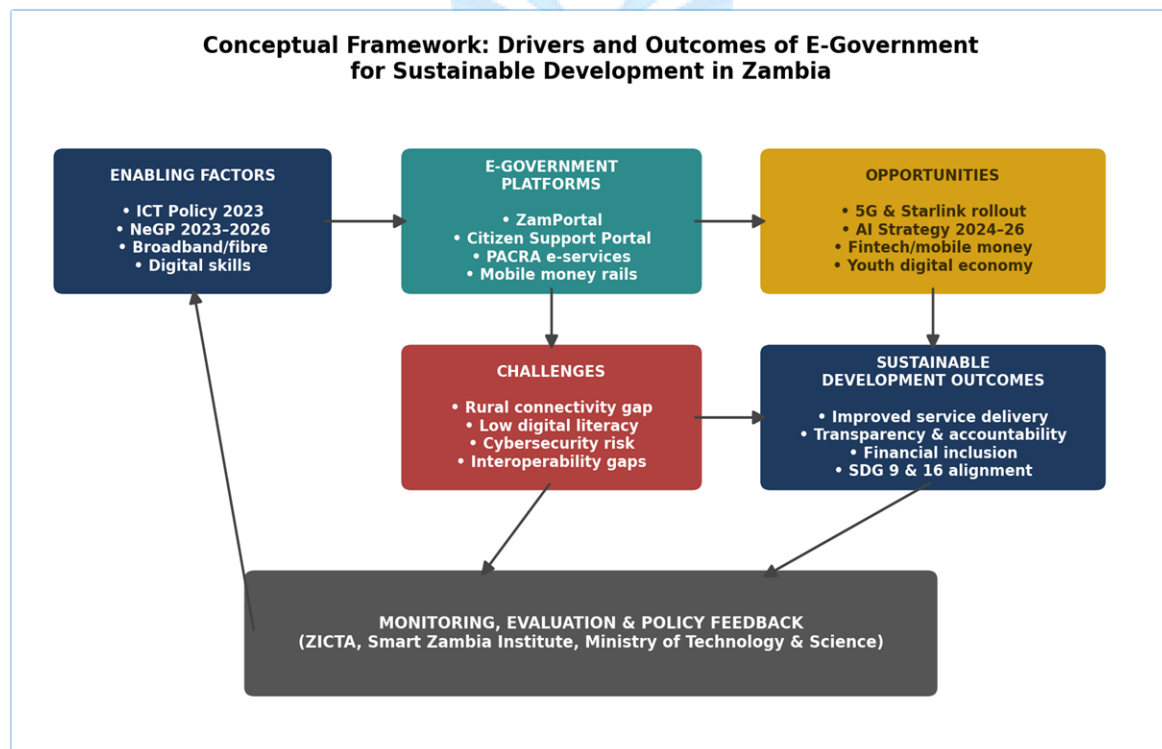


Figure 7: Conceptual Framework — Drivers and Outcomes of E-Government for Sustainable Development in Zambia (Author's construction, 2026)

VII. CONCLUSION

This research aimed to explore the emerging challenges and opportunities of the Zambian Information Communication Technology (ICT) Sector pertaining to e-government for sustainable development. The evidence suggests that Zambia has made significant strides in increasing societal access to internet and basic connectivity – rising from 56.7 percent in 2021 to 72.1 percent in 2026; and created a converging policy framework with the National ICT Policy 2023, the National Electronic Government Plan (2023-2026), and supporting cybersecurity and artificial intelligence policies. The role of the ICT sector as the country's biggest contributor of the GDP also further highlights its centrality in the process of Zambia's development. Meanwhile, the study reveals that Zambia's E-Government Development Index, an indicator of its E-Government maturity, remains behind the world average and is still outperformed by a number of better-performing countries in the region. This gap is mainly caused by constraints related to the quality of the infrastructure (mainly unreliable power and variable 4G coverage), low digital literacy, poor interoperability between government information systems and changing cybersecurity threats. But as 5G and the adoption of satellite connectivity are hitting Zambia at the same time, an evolving digital financial system and a supportive — if still being put in place — policy environment represents a real opportunity for the country to fast-track its e-government journey in the near future. Finally, the study suggests that an integrated approach to the advancement of e-government for sustainable development in Zambia should consider infrastructure, human capital, cybersecurity and interoperability between institutions as interdependent parts of a unique digital government system. To overcome the gaps that remain and to make the digital transformation drive tangible benefits in public-service delivery, institutional accountability and inclusive economic growth, sustained political will, sufficient funding, and comprehensive monitoring and evaluation will be necessary as envisioned in the National Electronic Government Plan.

VIII. FUTURE SCOPE OF RESEARCH

This research has a number of avenues for further research. Second, if the UN survey cycles continue to be conducted in the future (2024, 2026, 2028), future analyses could provide a longitudinal overview of Zambia's performance on EGD I and sub-indices to measure how fast and how this convergence is taking place. Second, research on the adoption and impact of e-government at sub-national (provincial/districtal) level, especially in rural and peri-urban areas, would enable to better understand the urban-rural digital divide found in this study. Thirdly, future research could attempt a quantitative modelling of the link between specific e-government responses (e.g PACRA digitisation, growth in ZamPortal) and certain development indicators like the degree of formalisation of businesses, tax compliance among others, and citizen satisfaction indices. Further research should also examine how Zambia's Cyber Security Act No. 3 of 2025 and Cyber Crimes Act No. 4 of 2025 are being enforced and their impact on institutional arrangements, such as the trust placed in digital government platforms and whether they do align with the regional harmonisation of cyber security in the Southern African Development Community (SADC). Likewise, when considering Zambia's Artificial Intelligence Strategy 2024–2026, further research could focus on the incorporation of AI-powered service delivery, like chatbots, automated eligibility verification, or forecasting service demand, into e-government systems and the governance and ethical considerations necessary to handle the resulting risks. Lastly, comparative regional studies with Rwanda, Kenya, and other fast digitalising African countries can provide learning for the most effective institutional and financing models needed to push the maturity of e-government in resource-poor environments.

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