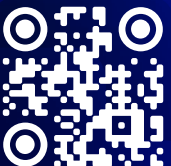**Republic of Zambia**

National Digital Transformation Strategy 2023-2027

Republic of Zambia

National Digital Transformation Strategy 2023 - 2027

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Foreword

The National Digital Transformation Strategy is anchored on the National Information and Communication Technology Policy of 2023. It is premised on Government's aspiration to transform Zambia into a digital economy. The implementation of this Strategy will lead to an increase in digital services at all levels of the economy. It is envisaged that this will enhance productivity and contribute to economic growth.

The Strategy has identified five pillars under which the country will transform, namely, Digital Infrastructure, Digital Platforms, Digital Services, Digital Literacy and Skills, and Digital Innovation and Entrepreneurship. Through these pillars, the Strategy will provide guidance and direction on matters that relate to national digital transformation.

This Strategy has interventions that cut across different sectors and its success will depend on all stakeholders playing their role in ensuring its implementation. I, therefore, wish to implore all stakeholders to effectively contribute their role in the implementation of this Strategy.

Hon. Felix C. Mutati (MP)
Minister of Technology and Science

Acknowledgement

The National Digital Transformation Strategy has been prepared through a multi-stakeholder approach involving state and non-state actors.

In particular, Government recognises the role played by the United Nations Capital Development Fund (UNCDF) during formulation of the Strategy. The Ministry further wishes to acknowledge the role of other line Ministries, Government agencies, provinces, private sector and cooperating partners.

The multi-stakeholder approach followed during formulation of this Strategy shall be followed during implementation. In this regard, the Implementation Framework of the Strategy has clearly defined the roles to be played by all stakeholders during implementation.

Dr. Brilliant Habeenzu
Permanent Secretary
Minister of Technology and Science

Definitions

Artificial Intelligence
The development of computer systems able to perform task normally requiring human intelligence, such as visual perception, speech recognition, decision making, and translation between languages.

Application Programming Interface
A set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service

Blockchain Technology
A software that consists of growing lists of records, called blocks, that are securely linked together using cryptography to store and transfer digital goods and services through the internet.

Broadband
High speed internet access of minimum 2mbps which transports multiple signals at a wide range of frequencies and internet traffic types.

Co-location
The accommodation of two or more switches, antennae or other electronic network equipment in or on a single building, tower, or other structure.

Data Center
A large group of networked computer servers typically used by organisations for the remote storage, processing, or distribution of large amounts of data.

Data Privacy
The aspect information technology that deals with the ability of individuals and organizations to determine what data in an electronic device can be shared with third parties as well as the use and governance of personal data.

Digital
Electronic technology that generates stores and processes data.

Digital Economy
Activities in the economy that result from electronic transactions, processes, devices, and data among people, businesses, and government.

Digital Entrepreneurship
Entrepreneurial opportunities being created or enhanced through the use of technological platforms.

Digital Infrastructure
Physical and virtual technologies that facilitate the electronic processing, collection, and transmission of information to aid the delivery of digital products and services.

Digital Literacy
Refers to an individual's ability to find, evaluate, and clearly communicate information through typing and other media on various digital platforms.

Digital Platforms
Digital systems and interfaces that facilitate communications, transactions, and service delivery for government, business, and people through digital channels.

Digital Services
Services which are delivered over the internet or electronic devices or networks and the nature of which renders their supply essentially automated.

Digital Skills
The ability to create, find, evaluate, use, share, manage, and develop content using digital technologies and tools. These are divided into three categories as follows:

Basic skills – foundational skills that enable access and functional use of digital technologies at a minimum level of society.

Intermediate skills – enable the use digital technologies in more meaningful and beneficial ways, including the ability to critically evaluate and create content.

Advanced skills – Needed by specialists in ICT professions such as computer programming and network management.

Digital Transformation
The use of digital technologies to transform or modify existing business processes and models, service delivery, culture, and customer experiences to meet the changing needs of individuals, businesses, and government.

Digital Innovation
The use of digital technologies to create or improve existing businesses, systems, and processes to address society needs or enhance service delivery.

Digital Government
Improved service delivery that gives citizens choice with personalised services designed around their needs, with heightened focus on citizen-centrism, enhanced interaction with public services, increased accountability and transparency, and decentralisation.

E-government
The use of information and communication to enhance work efficiency and improve service delivery in order to meet the needs of the public in a responsive and transparent manner.

Electronic Waste
Any electrical and electric device component which is discarded, discharged, emitted, or deposited in the environment in such volume, composition, or manner as to cause an adverse effect to the environment and human health.

Financial Literacy
The ability to understand and use various financial skills, including personal financial management, budgeting, and investing.

Financial Inclusion
Access to and informed usage of a broad range of quality and affordable savings, credit, payment, insurance, and investment products and services that meet the needs of individuals and businesses.

Government Service Bus
A digital platform where e-government services are provided

Internet of Things
The number of physical devices around the world that are now connected to the internet, all collecting and sharing data.

Interoperable
The basic ability of different computerised products or systems to readily connect and exchange information with one another, in either implementation or access, without restriction.

Machine Learning
The use and development of computer systems that are able to learn and adapt without following explicit instructions, by using algorithms and statistical models to analyse and draw inferences from patterns in data.

Sandbox
An environment that facilitates the live testing of programs or innovations in a safe and controlled manner of set parameters.

Tele-Medical Services
Medical care provided remotely to a patient in a separate location using two-way voice and visual communication.

Acronyms

API	Application Programming Interface	**PIA**	Pensions and Insurance Authority
BOZ	Bank of Zambia	**PACRA**	Patents and Company Registration Agency
E-Commerce	Electronic Commerce	**PAYZ**	Payments Association of Zambia
GSM	Global System for Mobile Communication	**RUFEP**	Rural Finance Expansion Programme
ICT	Information Communication Technology	**SEC**	Securities and Exchange Commission
IFC	International Finance Corporation	**SZI**	Smart Zambia Institute
MFI	Microfinance Institution	**UNCDF**	United Nations Capital Development Fund
MOE	Ministry of Education	**UNDP**	United Nations Development Programme
MOFNP	Ministry of Finance and National Planning	**ZAMSTATs**	Zambia Statistics Agency
MOTS	Ministry of Technology and Science	**ZAMTEL**	Zambia Telecommunications Company
NFS	National Financial Switch	**ZANACO**	Zambia National Commercial Bank
NII	National Innovation Initiative	**ZICTA**	Zambia Information and Communications Technology Authority
NHIMA	National Health Insurance Management Authority	**ZRA**	Zambia Revenue Authority
NTBC	National Technology Business Center		
NGO	Non-governmental Organisation		

1.0. Introduction

Digital technologies have been recognised globally as an important means through which developing countries can leapfrog the development stages to achieve both economic growth and sustained development. The use of these technologies can improve service delivery, unlock new opportunities for job and wealth creation, enhance accountability and transparency, and assist with evidence-based policy formulation and thus contribute to enhanced productivity and growth.

The pace at which new and emerging technologies are evolving is increasingly becoming faster and more complex while having greater impact and influence on economic activity. For instance, the advancement of technologies such as Artificial Intelligence (AI), Machine Learning, Internet of Things, Blockchain Technologies, Robotics and Big Data Analytics, which has shown evidence of disrupting business as we know it, are revolutionising processes. Zambia is determined to tap into opportunities presented by the emerging technologies to solve socio-economic challenges.

Government's commitment to leverage digital technologies for the development of the country has already been demonstrated in its long-term development aspiration, Zambia's Vision 2030. The active promotion of these technologies is further, espoused in national development plans, as well as other sector-specific policies.

Several studies have concluded that Zambia possesses the necessary foundational elements for the building of a digital economy. These include the existence of key backbone infrastructure and an enabling policy environment. In this regard, the process of building Zambia's digital economy will focus on expanding and consolidating the adoption of digital technologies across all sectors of the economy. This will be realised by eliminating bottlenecks to establishing an inclusive digital economy and harnessing opportunities arising from the emergence of digital technologies.

The National Digital Transformation Strategy has, therefore, been formulated to establish a coordinated approach in building Zambia's digital economy. This entails a complete shift towards the deliberate adoption of digital technologies across all sectors of the economy. The approach builds on the policy direction to foster the deployment of electronic services across all sectors of the economy.

The Strategy promotes the involvement of state and non-state actors in its implementation and leverages on international best practices in digital transformation. Five pillars which will be the principal drivers through which the vision of attaining 'an integrated, inclusive, and digitally empowered nation by 2030,' have been identified. These are: Digital Infrastructure; Digital Literacy and Skills; Digital Innovation and Entrepreneurship; Digital Platforms and Digital Services. Each pillar seeks to ensure the improvement of foundational elements necessary to establish a fully-fledged digital economy in which all Zambians can equitably participate. The Strategy also identifies enablers of the digital economy, being Digital Policy and Regulation, Digital Government, and Digital Security and Integrity.

Strategy Approach:
5 Pillars

- Digital Infrustructure
- Digital Skills
- Digital Platforms
- Digital Innovation & Entrepreneurship
- Digital Services

Enablers:
· Digital Government
· Policy & Regulation
· Security & Integrity

An Integrated inclusive & digitally empowered nation by 2030
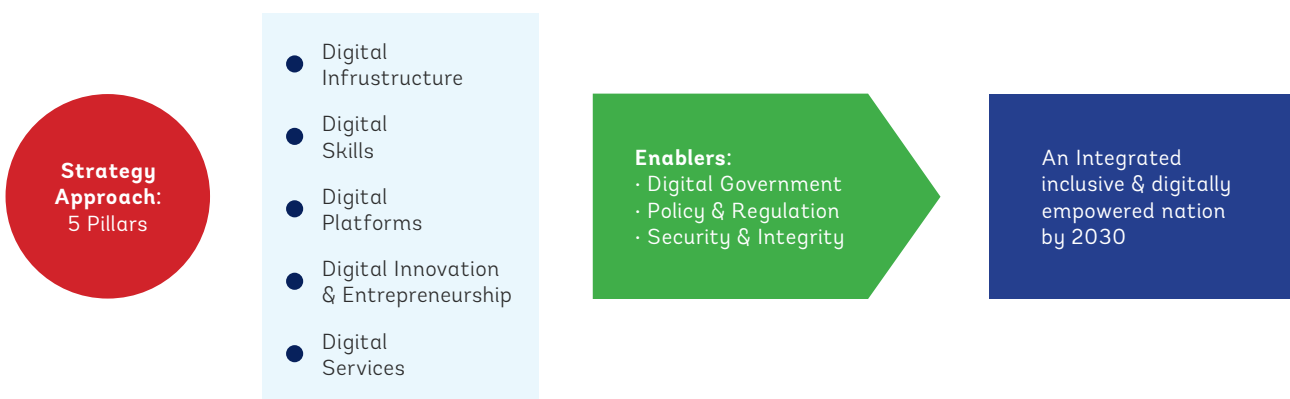
Figure 1: The Five Pillars of Zambia's Digitalisation Process

The Strategy is organised in six sections, namely: Introduction; Situational Analysis; Vision, Rationale, and Guiding Principles; Objectives and Strategies; Institutional Arrangements; and Implementation Framework.

2.0. Situational Analysis

Zambia's youthful population is receptive to digital technologies in all sectors of the country's economy. The Zambia Statistics Agency (ZamStats) estimates that 48 percent of the population are aged below 14 years and only 3 percent are aged above 65 years. Additionally, the 2021 World Development Index reports youth unemployment rate of 26.1 percent which requires the unlocking of new opportunities in order to create more jobs across all sectors of the economy. Multiple assessments have revealed that Zambia has the necessary foundational elements to build a cohesive and integrated digital economy that unlocks several financial and economic opportunities for its citizens.

The 2020 World Bank Digital Economy Diagnostic Report recognised the expansion in Global System for Mobile Communication (GSM) network coverage, the deployment of a backbone fibre network, notable progress in uptake of digital financial services and the digitalisation of Government services as significant markers for the advancement of Zambia's digital economy. The report also noted gaps related to the policy, legal and regulatory environment, digital skills, and the innovation and entrepreneurship ecosystem.

An analysis of the status of the country's digital economy conducted in 2021 by Government, in collaboration with the United Nations Capital Development Fund (UNCDF), arrived at a similar conclusion that Zambia possesses the necessary elements for building its digital economy but needs a more targeted approach to realise the benefits. The report highlighted the need for increased coordination on policy and regulatory issues, investments in infrastructure, development of basic, intermediate, and advanced digital skills. In terms of digital platforms and services, pockets of digitalisation exist across different sectors of the economy such as Smartcare for patient records management under the health sector, (Examples of digital platforms in agriculture, lands, etc) and the significant adoption of mobile money services in the financial sector. There has also been some noted progress in digitalising the process of collecting taxes by the Zambia Revenue Authority (ZRA). This has been one of the key milestones in the progress towards digitalising the economy. However, additional efforts are needed to develop digital platforms and services in sectors such as tourism, agriculture and transportation, among others, and to establish linkages between existing services to create an extensively integrated digital economy. There's also need to enhance the performance of existing digital platforms in various sectors.

Investing in the focus areas highlighted above can increase efficiencies by leveraging the potential of digital technologies in service delivery, in both the public and private sector. Additionally, unlocking new opportunities in the digital economy, for innovators, start-ups and content creators can positively contribute to overall economic growth. The data currently available provides the following synopsis of the country's digital economy:

Table 1: Selected Developments in the Digital Economy

Performance Indicator	2017	2021	Change
Mobile subscriptions	13.4 million	20.2 million*	50.7% increase
Internet subscriptions	7.8 million	10.4 million	33% increase
Internet penetration rate	47.3%	56.8 %	9.5 percentage points
Smartphone penetration	13.5%	29.6%	16.1 percentage points
Volume of mobile money transactions	116 million	169 million	46% increase
Value of mobile money transactions (ZMW)	7,287 million	105,815 million	14 fold increase
Mobile network population coverage	78%	92%	14% percentage points
Number of communication towers	2,426	3,000	24% increase
Telecommunication infrastructure index	0.12	0.34	0.22 percentage points
Cyber security index	43.6	68.8	58% increase

Source: ZICTA
* The 20.2 million mobile subscriptions recorded in 2021 comprise 7.5 million unique subscribers.

The statistics in Table 1 show that the country has hard marked improvements in the ICT sector with all targets recording an increase. Notable increases are in the mobile money transactions and increased broadband speeds. These show that citizens are ready to utilise digital services where they are available and are seen to be beneficial. Mobile network population coverage is considerably high and estimated at 92 percent of the total population.

From the global perspective, studies have shown that while increased digital application has high potential for growth, there are emerging areas of concern for policy and society. Data shows that 90 percent of global revenue in the digital space is owned by less than 15 firms based in the US, China, Japan and Europe. This translates into unexploited income potential for the citizens. When countries increase their exposure to digital services there is the associated increase in costs associated with maintenance, licensing and loss of jobs. It is also recognised that the dividends to the global digital economy accrue unevenly to a small number of countries who have invested in the sector. Other negative impacts are reduced creativity and innovation. Further, the development of most local content and solutions is still in its infancy. This has resulted in the reliance on platforms owned by major ICT frontier firms which are foreign owned. This raises challenges of ownership with respect to Intellectual Property (IP).

2.2. Digital Transformation Enablers

This Strategy identifies three enablers for successful digital transformation of the economy. These are Policy and Regulations, Digital Government, and Security and Integrity. Digitalised Government systems and services play a catalytic role in the overall national digital transformation process. Similarly, the existence of a policy and legal framework supportive of digitalisation is catalytic for participation by both public and private sectors. Further, maintaining information security and integrity are also recognised as primary to ensure confidence in the use of digital systems.

2.2.1. Digital Government

Government has taken the lead in the digitalisation process by investing in creating digital platforms and services. E-Government, or electronic government has decentralised to subnational levels and prioritised the establishment of Digital Transformation Centres to bring services to the people. This represents a pivotal paradigm shift in governance, leveraging cutting-edge digital technologies to enhance the delivery of public services and promote transparency, efficiency, and accessibility. The aim is to create a seamless digital ecosystem where citizens can access government services, reducing bureaucracy and enhancing their overall experience.

2.2.2. Policy and Regulation

Zambia has made notable strides in providing enabling policies and regulations to advance the digital economy. This is evidenced by Government's formulation of key pieces of legislation and policies that provide an enabling environment for private sector participation and one which supports the adoption of digital technologies into key sectors of the economy. These include the National ICT Policy of 2023, the ICT Act No. 15 of 2009, the National Payment Systems Act No. 1 of 2007, the Electronic Communication and Transactions Act No. 4 of 2021, the Cyber Security and Cyber Crimes Act No 2 of 2021, the Data Protection Act No. 3 of 2021, e-Government Act No. 41 of 2021 and the ICT Association of Zambia Act No. 7 of 2018.

2.2.3. Security and Integrity

Zambia has made notable strides in providing enabling policies and regulations to advance the security and integrity of the digital economy. This is evidenced by Government's formulation of key pieces of legislation and policies that provide an environment which supports cyber safety and cyber security. Further, the country has also enhanced the regulated personal privacy in cyberspace and the use and protection of personal data.

The key challenge related to the policy, legal and regulatory environment is the limited coordination among the various institutions responsible for driving the digital economy. This has led to duplication of efforts during implementation, inefficiencies in service delivery and some aspects of transformation being neglected. Notably, despite the convergence of digital technologies, regulatory overlaps among various agencies tasked with the oversight of digital technologies and services have arisen. For instance, broadcasting services overseen by the Independent Broadcasting Authority (IBA) are provided on digital platforms that are overseen by ZICTA. Similarly, digital fiancial services such as mobile money regulated by the Bank of Zambia run on digital platforms that are regulated by ZICTA.

Further, there are emerging risks and challenges related to the adoption of digital technologies, such as the growing stock of electronic waste as well as challenges arising from the fast-paced evolution of technologies which demand that policies and regulations are responsive and adequate.

2.3. Digital Transformation Pillars

The Strategy has also identified five pillars that will be the principal drivers for digital transformation namely: Digital Infrastructure; Digital Literacy and Skills; Digital Innovation and Entrepreneurship; Digital Platforms; and Digital Services.

2.3.1. Digital Infrastructure

Zambia has made notable progress in the deployment of digital infrastructure across the country through both public and private sector investments. This has resulted in improvements in access to technologies such as backbone fibre network covering all the provinces of the country and GSM towers that currently provide coverage to 86.9 percent of the population. The country has also established data centres to leverage on the opportunities from shared digital operations and equipment for the purposes of storing, processing, and disseminating data and applications. For instance, the Government established a tier 3 data centre under the SMART Zambia initiative while several private sector players established complementary facilities.

Despite this notable progress, gaps remain in Zambia's digital infrastructure, especially in rural areas where the population is often sparsely distributed and the commercial case for investment is not pronounced. In the more urban setting, there is some duplication of infrastructure such as fibre networks which is economically inefficient and could be channelled to other unserved or underserved areas. ZICTA statistics reveal that only eighty-three (83) out of the One Hundred and Sixteen (116) Districts in Zambia have fibre optic backbone points of presence (POPs). The existing infrastructure is also not adequate to support emerging technologies such as Internet of Things (IoT) and leveraging on big data. For instance, most of the telecommunication sites are still 2G, which has limited capabilities, while the country is yet to implement a digital identity system.

While there is noted progress in the use of mobile telephone services, the use of internet services among people has remained low mainly due to limited access to enabling devices such as smartphones. According to the 2018 National Survey on Access and Usage of ICT by Individuals and Households undertaken by ZICTA, uptake of ICT services among the population is still relatively low, with only 14.3 percent of the adult population having access to and being established users of the internet. Further, the survey established that only 29.6 percent of mobile phone owners in the country have smartphones. There are also disparities in access and usage across marginalised and vulnerable groups such as persons living with disabilities, gender, MSMEs and refugees among other segments.

As more citizens access digital devices, the level of e-waste is also increasing and poses a risk to the environment. Increased application of digital technologies has been attributed with increased e-waste, higher demand for rare earth minerals and energy, increased costs of maintenance and loss of jobs.

2.3.2. Digital Platforms

To facilitate the efficient provision of digital services, digital service providers have established several digital platforms in the country. Some of these platforms enable citizens to work remotely, access and provide various services efficiently. According to the Electronic Government Division there are currently thirty (30) platforms offering 230 public services. The benefits of these platforms in public service delivery can be seen through the efficient collection of taxes, efficiency in paying for services such as road licenses and issuance of key documents such as property titles and visas, among others. In addition, the establishment of the financial switch unlocked a number of opportunities for collaboration among players in the financial sector and the development of unique products better-suited to customers' needs.

The main challenge related to the development of digital platforms in Zambia is the lack of coordination between different stakeholders. This has led to duplication of efforts and limited utilisation of existing platforms. There are also challenges related to interoperability in the use of existing digital platforms. In addition, a number of services are yet to be digitalised, leading to underutilisation of existing platforms.

As the application of digital technologies increases, there is a widening digital divide.
This is attributed to inadequate access to devices can enable their participation. There's increased inequality, human rights abuse, increased exposure to cybercrimes, and elicit materials and loss of jobs. Evidence is increasingly pointing to an upsurge in human rights abuses associated with digitalisation.

2.3.3. Digital Services

Both public and private institutions have embraced the delivery of services through digital channels. As of December 2021, there were 230 services on various government digital platforms, including the Government Service Bus (GSB). The GSB enables digital access to a broad range of services such as tax payments and e-registration for various services. Overall, the country has witnessed increased adoption of digital services in health, agriculture, education, energy, transport and social protection services to enhance efficient service delivery. Health insurance services under the National Health Insurance Scheme use digital services to enhance access to health services while the single window has synchronized the agriculture extension, market information and input support programs across the country.

Zambia's private sector, the financial sector in particular, has made significant strides in driving digital access to services such as payments, credit, insurance and investment. According to the Bank of Zambia website, the volume of mobile money transactions in 2020 increased by 35.0 percent from 553 million recorded in 2019 to 747 million, indicating increased usage of digital payment services. Table 1 above shows that the value of mobile money transactions (ZMW) from 2017 to 2021 increased 14 fold from ZMW7,287 million to ZMW105,815 million. In addition, the 2020 Bank of Zambia FinScope survey revealed that overall financial inclusion increased to 69.4 percent from 59.3 percent in 2015, mainly driven by mobile money adoption.

Despite this progress, challenges still remain in the delivery and use of digital services. There is a widening digital gap between different economic groups and rural and urban settings. Low digital and financial literacy levels continue to affect adoption and usage of digital services, thus requiring a concerted effort to educate and empower customers. Additionally, affordability of services such as internet, remains a challenge. There are also no established customer protection mechanisms for resolving disputes related to the use of digital services that can empower customers and enable increased trust. In addition, the emergence of digital services is still concentrated in a few sectors and is yet to be extensively adopted by other sectors of the economy.

2.3.4. Digital Literacy and Skills

In recognition of the need for the digital transformation of the country, a number of initiatives aimed at enhancing digital literacy and skills at all levels have been established. The Government introduced an ICT curriculum in all secondary schools to build the skills and capacity of the citizens. Further, the Government established a centre of excellence at the Zambia University of Technology to support the growth of the ICT professionals in the country. A number of higher learning institutions are also offering ICT related training to their students. In addition, the ICT Association of Zambia (ICTAZ), which is responsible for regulating the conduct of ICT professionals in the country, was established. Efforts have been made by state and non-state actors to raise awareness on the importance of digital skills among various groups in society.

Despite these efforts to build capacity, the digital skills gap remains unresolved. This arises from the short supply of specialised digital skills in relation to the demand. The country still has low digital literacy and skills levels among workers and citizens. A number of specialised ICT assignments and projects are outsourced due to the limited capacity to execute them in the country. According to the 2018 ZICTA Survey on Access and Usage of ICTs, only 6.8 percent of individuals across the country aged above 10 years can use a computer. There are also emerging risks related to customer safety when using digital services that require digital literacy. The existing curriculum at both lower and higher learning institutions is not up-to-date with the emerging needs of a digital economy. In addition, there are not enough teachers and lecturers to provide ICT training to learners in schools. These gaps, among others, are slowing down the pace of digital transformation in the country.

2.3.5. Digital Innovation and Entrepreneurship

Digital entrepreneurship and innovation have great potential to drive job creation, human development, and inclusive economic growth in Zambia's economy. There are a number of initiatives that promote digital innovation and entrepreneurship in the country. These include the HH Innovation Fund, ZICTA's ICT Innovation programme, and various programmes by innovation hubs such as BongoHive Innovation and Technology and Jacaranda Hubs. The National Technology and Business Centre also supports the commercialisation of innovations across all sectors of the economy. Recent policy initiatives such as the Regulatory Sandboxes run by both the Bank of Zambia and the Securities and Exchange Commission have encouraged the emergence of new technology-enabled businesses, generating both revenue and employment. There are also some funds that are established in various organisations to support digital innovation and entrepreneurship.

Despite these efforts and existing support programmes, the ecosystem to support innovation and entrepreneurship is yet to be fully developed. Factors that affect innovators and entrepreneurs in the digital space include low financing, unsupportive environment, limited technological skills and the fast paced nature of the digital field. Notably, there is a limited pool of entrepreneurs focusing on innovations outside the financial sector. This is despite the existence of glaring opportunities to develop innovations to deliver services such as telemedicine, smart agriculture, climate smart solutions, transportation, and e-education, among others. Additionally, there are limited innovation hubs focusing on digital innovation and entrepreneurship and these are mainly concentrated in Lusaka. There are also limited linkages between industry, academia and skilled innovators.

Further, challenges exist relating to access to affordable and appropriate financing models. While some funds have been established to support innovation, they are often fragmented in different agencies and not well-targeted to respond to specific innovations. Existing initiatives focus mainly on start-ups and not entrepreneurs with high growth and impactful innovations that may be seeking new markets or investment. Entrepreneurs are also faced with the challenge of unclear mechanisms for the adoption of the innovative ideas. The entrepreneurship culture is equally not well-entrenched in Zambia's curriculum with learners inclined to seeking employment instead of looking to become entrepreneurs. There is also an absence of a comprehensive structure that supports innovation and entrepreneurship.

Vision, Rationale and Guiding Principles

3.1. Vision

> *"An integrated, inclusive, and digitally empowered nation by 2030."*

3.2. Rationale

Digital technologies are expected to change the way things are done by increasing access to information, better platforms and improved client experience. There upsurge in the adoption of digital technologies has contributed towards increased human interactions, business collaborations and service delivery. However, exposure to cyber security risks also increased. It is envisaged that digitalization will contribute to the increased productivity, enhanced efficiency, and improved customer experience. These changes are expected to contribute towards wealth creation and poverty reduction.

Zambia has set an agenda for digital transformation to contribute towards service delivery and overall economic transformation. The National Digital Transformation Strategy has been designed as the framework to guide the digitalisation process across public and private institutions. The Strategy looks at how digital technologies will influence changes in human interactions, cultures, business models, Government operations, client experience and the economy as a whole.

3.3. Guiding Principles

The implementation of the national digital strategy will be premised on the following guiding principles:

3.3.1. Good Governance and Integrity
Embracing tenets of good governance and upholding ethics in the implementation of digital transformation.

3.3.2. Collaboration
Adopting a comprehensive ecosystem approach that creates linkages and applies requisite elements for digital transformation.

3.3.3. Transformation
Accelerating adoption and usage of digital technologies to harness socio-economic development through digital transformation.

3.3.4. Inclusivity
Provision of digital technologies shall not discriminate against any citizen on the basis of sex, gender, age, race, tribe, differently abled or any other form of discrimination as enshrined in the national Constitution.

3.3.5. Adaptability
Responding to changes and adjusting to emerging conditions in the environment through the use of new and/or existing digital technologies.

3.3.6. Sustainability
The Digital Transformation Strategy will be premised on meeting the needs of the present generation without compromising the needs of future generations.
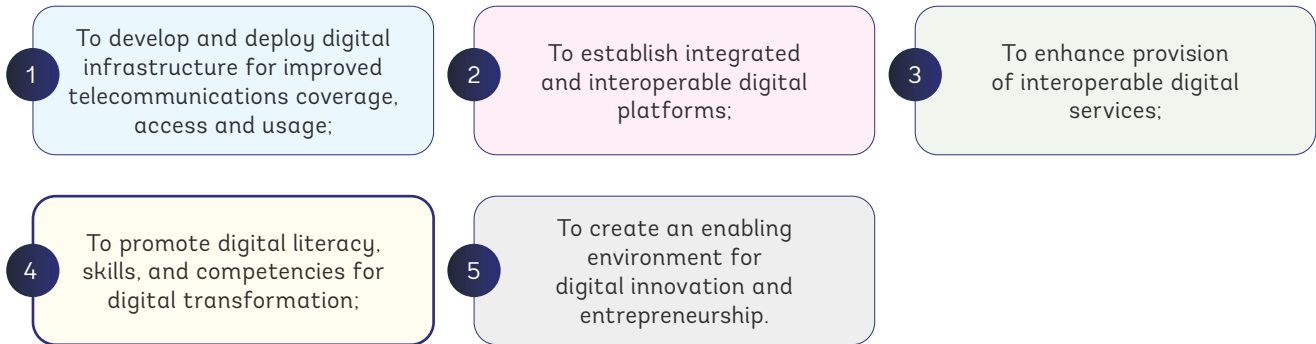
3.3.7. Transparency and Accountability
Digital Transformation Strategy shall be implemented in an open and accountable manner with the engagement and participation of all relevant stakeholders including state, private sector and non-state actors.

Chapter 4 — Policy Objectives and Measures

4.1. List of Objectives

1 To develop and deploy digital infrastructure for improved telecommunications coverage, access and usage;

2 To establish integrated and interoperable digital platforms;

3 To enhance provision of interoperable digital services;

4 To promote digital literacy, skills, and competencies for digital transformation;

5 To create an enabling environment for digital innovation and entrepreneurship.

4.1.1. Digital Infrastructure

Objective 1: To develop and deploy digital infrastructure for improved telecommunications coverage, access and usage.
Strategies
1. Enhance universal access and usage through the provision of digital infrastructure; 2. Facilitate the reduction of costs associated with digital infrastructure development; 3. Facilitate the management of e-waste; 4. Enhance quality of service provided by digital infrastructure; and, 5. Promote the diversification of energy sources for digital infrastructure.

4.1.2. Digital Platforms

Objective 2: To promote the development and utilisation of digital platforms.
Strategies
1. Promote the creation of an interoperable digital platform ecosystem; 2. Facilitate the reduction of costs for developing and implementing digital platforms; and 3. Enhance affordability of digital platforms;

4.1.3. Digital Services

Objective 3: To enhance provision of interoperable digital services;

Strategies:

1. Promote a rights-based approach to designing digital services;
2. Increase availability of quality and affordable digital services;
3. Promote affordable access to ICT devices for digital services;
4. Promote the development and integration of sector-driven digital services across all sectors of the economy;
5. Enhance customer protection and awareness.

4.1.4. Digital Literacy and Skills

Objective 4: To promote digital literacy, skills, and competencies for digital transformation.

Strategies:

1. Enhance information on digital skills on the Zambian market;
2. Build the capacity of learning institutions to meet the current digital needs;
3. Ensure digital learning programs in learning institutions are inclusive;
4. Improve digital financial literacy and basic ICT skills for all; and,
5. Facilitate the production of an adequate and competent number of ICT professionals with intermediate and advanced skills.

4.1.5. Digital Innovation and Entrepreneurship

Objective 5: To create an enabling environment for digital innovation and entrepreneurship.

Strategies:

1. Promote the establishment and growth of inclusive innovation and incubation hubs;
2. Promote equitable access to appropriate and adequate financing for digital innovation and entrepreneurship;
3. Enhance research and development; and,
4. Facilitate the creation of digital employment and entrepreneurship opportunities.

5.0. Implementation Framework

5.1. Institutional Framework

A multi-stakeholder approach is employed in implementing of this Strategy. Key stakeholders have been identified and their roles outlined below:

1. Ministry responsible for Technology and Science
Shall coordinate implementation of the Strategy by enhancing coordination and collaboration of all stakeholders.

2. Cabinet Office
Shall provide policy guidance and oversight towards implementation of the Strategy.

3. E-Government Division
Shall coordinate the deployment and uptake of digital platforms and services in the public sector.

4. Government Line Ministries
Shall collaborate with the Ministry and other stakeholders in implementing the Strategy based on their institutional mandate on digital transformation.

5. The Legislature
Shall enact appropriate legislation supportive to digital transformation.

6. The Judiciary
Shall provide appropriate guidance and interpretation of legal matters on digital transformation.

7. Zambia Information Communications Technology Authority
Shall implement regulation, guidelines and standards supportive to digital transformation.

8. Independent Broadcasting Authority
Shall be responsible for regulating digital content.

9. National Cyber Security Agency
Shall be established to ensure provision of a safer national cyber environment.

10. Bank of Zambia
Shall regulate the development and deployment of financial products and services on digital platforms.

11. Zambia Environmental Management Agency
Shall regulate the generation and disposal of digital waste (e-waste)

12. Competition and Consumer Protection Commission
Shall regulate competition and ensure resolution of consumer grievances over the provision of digital products and services.

13. Zambia Revenue Authority
Shall facilitate the clearance of imported and exported digital equipment.

14. Zambia Bureau of Standards
Shall facilitate the development of standards in the digital sector.

15. Securities and Exchange Commission
Shall facilitate the equal participation of players in the capital markets.

16. The Information Communication Technology Association of Zambia
Shall host a national statistical database on digital training, industry practitioners and enforce licensing, disciplinary and code of ethics regulations on ICT practitioners.

17. Zambia Agency for Persons with Disabilities
Shall ensure inclusiveness of its membership in the implementation of appropriate contents outlined in this Strategy.

18. Regulators
Shall regulate the development and deployment of digital products and services in line with their institutional mandate.

19. Service Providers
Shall provide quality and affordable digital products and services in line with their institutional mandate.

20. Postal and Courier Operators
Shall facilitate timely delivery of mail and parcels to complete the digital services value-chain.

21. Local Authorities
Shall collaborate with all stakeholders to facilitate the development and deployment digital infrastructure and provision of community awareness to increase uptake of digital products and services.

22. Business and Professional Associations
Shall coordinate their members in undertaking the strategic responsibilities and activities of the Strategy in line with their mandate.

23. Academia
Shall facilitate skills development and support research and development that will foster growth in Zambia's digital sector.

24. Civil Society
Shall promote uptake and responsible consumption of digital products and services in line with the existing statutes.

25. Cooperating Partners
Shall collaborate with government and non-government actors to support implementation of the Strategy.

5.2. Legal Framework

Implementation of this Strategy will be subject to the provisions of various pieces of legislation. The major pieces of legislation impacting on the Strategy are the following:

1. Information and Communication Technology Act No. 15 of 2009
The Act provides for the establishment of the Zambia Information and Communication Technology Authority and for the regulation of Information and Communication Technologies. However, it does not adequately cover various aspects of digital technologies and, therefore, shall be reviewed to:

i) Realign current business models and processes; and,
ii) Provide for new and emerging technologies, opportunities and emerging risks such as growing stock of electronic waste, consumer protection, cyber security, cybercrime and data protection.

2. Cyber Security and Cyber Crimes Act No. 2 of 2021
The Act provides for cyber security in the Republic and the constitution of the Zambia Computer Incidence Response Team and its functions. The Act also provides for protection of persons against cybercrime and child online protection. Since cyber security is a responsibility of multiple institutions, the Act shall be reviewed to provide for the establishment of an independent National Cyber Security Agency as well as address other factors impacting on the business community and the general citiʒenry.

3. Electronic Communications and Transactions Act No. 4 of 2021
The Act provides for regulation of electronic transactions and communications, promotes secure electronic signatures and facilitates the electronic filing of documents by public authorities.

4. National Payment Systems Act No. 1 of 2007
The Act provides for the management, administration, operation, supervision and regula-

tion of payment, clearing and settlement systems and empowers the Bank of Zambia to develop and implement payment, clearing and settlement systems. It shall be reviewed as it does not adequately cover various aspects of the digital technologies that have emerged since it was enacted.

5. Data Protection Act No. 3 of 2021
The Act provides for regulation of collection, use, transmission and protection of personal data; and establishes the office of the data protection commissioner and provide of its functions.

6. Electronic Government Act No. 41 of 2021
The Act provides for the management and promotion of electronic Government services and processes and establishes the Electronic Government Division.

7. Public Procurement Act, No. 8 2020
The Act regulates all public procurement processes and establishes the Zambia Public Procurement Authority. It shall be reviewed in order to address issues such as the requirement to submit physical documents in the tendering process and the use of electronic signatures which impede digital transformation.

8. Information and Communications Technology Association of Zambia No. 7 of 2018
The Act provides for the establishment of the Information and Communications Technology Association of Zambia (ICTAZ), provides for its functions, and regulates information and communications technology professionals.

9. National Registration Act, Cap 126 of the Laws of Zambia
The Act provides for the registration of persons. It shall be reviewed to provide electronic identification of persons.

10. Education Act No. 23 of 2011
The Act provides for the regulation of the provision of education services in the country. The Act requires review to enhance provisions on ICT training by incorporating provisions on adoption of basic, intermediate and advanced digital skills in the school curricula at all levels.

11. Environmental Management ACT, No. 12 of 2011
The Act provides for the continuation of existence of the Environmental Council of Zambia and re-named it as the Zambia Environmental Management Agency. It provides for integrated environmental management, the protection and conservation of the environment and the sustainable management and use of natural resources. It further provides for environmental management strategies and other plans for environmental management and sustainable development.

12. Postal Services Act, No. 22 of 2009

The Act provides for the regulation of postal and courier services, continuation the existence of ZamPost, operation of postal banking and financial services. The Act shall be reviewed to address, among other elements, a mechanism for the provision of universal postal services.

5.3. Financing and Resource Mobilisation

Although, factors like vision clarity, political will and an integrated approach to implementation are cardinal to the successful implementation of this Strategy, the importance of identifying viable and sustainable sources of finance cannot be overemphasized. This strategy will be financed by the Government of the Republic of Zambia in collaboration with co-operating partners and civil society. It is further envisaged that the private sector will take a leading role in financing the training of the human capital. For this reason, a systematic and well-coordinated approach will be put in place for the solicitation, management and utilization of resources from domestic sources, bilateral and multilateral partners. In addition, Government will organize the processes of prioritizing, planning, project selection and monitoring for effective and efficient utilization of available resources.

For domestically-mobilized resources, budgetary allocation will form the major source of funding; licensing fees and penalties will augment domestic sources. External resource mobilization, on the other hand, will include grants and credit facilities such as loans. Public-Private Partnerships will equally be considered and explored for the benefit and facilitation of coordinated financial support, towards attaining total digital transformation.

Furthermore, the successful implementation of this strategy will not only depend on the availability of financial resources, but also on the availability of skilled human resource.

To that end, already existing expertise in various ministries, provinces and other spending agencies will be key in the implementation process of the strategy.

5.4. Monitoring and Evaluation

In an effort to ensure accountability and transparency, this strategy will employ appropriate monitoring and evaluation mechanisms. The Logical Framework Matrix will constitute the basis to monitor project progress in relation to the use of inputs, achievement of output and outcome indicators.

Strategy implementation monitoring and quarterly reporting will be the overall responsibility of the Ministry of Technology and Science (MTS) with the support of other counterpart and implementing partners. The ministry will coordinate the monitoring and reporting process, receiving, reviewing, collating and compiling inputs from the various implementing partners. Staff from these implementing partners will review the strategy implementation progress on a quarterly basis and alert problems encountered and recommend solutions.

Output level indicators will be measured mainly using progress reports submitted on a quarterly basis. Implementing ministries, provinces, spending agencies will regularly submit reports to MTS to aid the reporting process. A specific monitoring sheet will be developed to provide information on the implementation of activities under each of the strategies in each pillar.

An independent mid-term evaluation will be carried out at year two and a half of the strategy and a final independent evaluation will be completed within six months prior to the actual completion date of the strategy. The evaluation reports shall be shared with all partners and all key stakeholders involved in the implementation of the strategy.

6.0. Implementation Framework

This five-year implementation framework shall guide Strategy implementing agencies and collaborators to set their annual targets in annual operation plans. Implementing agencies and collaborating partners will identify interventions to work towards and provide for them in their sector strategies and annual operation plans. The Ministry of Technology and Science, as the national coordinating agency for implementation of the strategy, shall, on an annual basis, consolidate the gains recorded by all implementing agencies in realising targets towards specific interventions. Therefore, a robust Monitoring and Evaluation framework shall be developed for this purpose.

The implementation framework, therefore, outlines the objectives, strategies and associated interventions, targets, performance indicators and assigns responsibility for strategy execution for all the five pillars of the Strategy.

4.1.5.   Digital Innovation and Entrepreneurship

Pillar 1: Digital Infrastructure
Objective: To develop and deploy digital infrastructure for improved telecommunications coverage, access and usage.
Strategies:
1. Enhance universal access and usage through the provision of digital infrastructure; 2. Facilitate the reduction of costs associated with digital infrastructure development; 3. Facilitate the management of e-waste; 4. Enhance quality of service provided by digital infrastructure; 5. Promote the diversification of energy sources for digital infrastructure.

Intervention	Target	Performance Indicators	Responsible
Strategy 1: Enhance universal access and usage through the provision of digital infrastructure			
Establish a national coordination mechanism for the deployment of digital infrastructure.	1	National coordination mechanism for the deployment of digital infrastructure established.	Lead: MoTS MPSAs MoFNP, ZEMA, Infratel, ZICTA, CAA, MNOs, ISPs, Private Sector, CPs Local Authorities
Deploy communication towers countrywide.	998	Number of communication towers deployed	Lead: MoTS Infratel, ZICTA, MNOs, ISPs, Private Sector, CPs
Deploy satellite communication technologies.	3	Number of satellite technologies deployed	Lead: MoTS ZEMA, Infratel, ZICTA, MNOs, ISPs, Private Sector, Local Authorities and CPs,
Upgrade 2G and 3G infrastructure to 4G.	80%	% of 2G and 3G infrastructure upgraded to 4G	Lead: MoTS SZI, ZICTA, MNOs, ISPs, Private Sector, MPSAs, ZAMPOST, CPs
Expand national broadband coverage	80%	% coverage of national broadband	Lead: MoTS MCTI, MoFNP, SZI, ZEMA, ZICTA, Private Sector, Local Authorities, CPs
Establish digital transformation centres at district level.	200	Number of digital transformation centres established at district level	Lead: MoTS SZI, ZICTA, MNOs, ISPs, Private Sector, MPSAs, ZAMPOST, CPs
Establish digital device assembly plants.	3	Number of digital device assembly plants established	Lead: MoTS MCTI, MoFNP, SZI, ZEMA, ZICTA, Private Sector, Local Authorities, CPs
Establish optic fibre points of presence at district level.	90%	Number of districts with optic fibre points of presence	Lead: MoTS FibreCom, Infratel, ZICTA, SZI, MNOs, ISPs, Private Sector, Local Authorities, CPs
Establish National IXPs.	3	Number of National IXPs established	Lead: ISPs FibreCom, Infratel, ZICTA, MNOs,
Increase the number of cross border fibre optic links to access undersea cable.	7	Number of cross border fibre optic links established	Lead: MoTS MNOs, ISPs, ZICTA, Private Sector, CPs
Develop and roll out a Digital Public Key Infrastructure (DPKI) Maintenance Plan.	1	Digital Public Key Infrastructure Maintenance Plan developed	Lead: MoTS ZICTA, Fibrecom, Infratel, ISPs, MNOs, REA, Private Sector, CPs
Develop and roll-out a national broadband master plan.	1	National broadband master plan developed	Lead: MoTS ZICTA, Fibrecom, Infratel, ISPs, MNOs, REA, Private Sector, CPs
Increase average broadband speeds from 2.73 to 5.00.	5.00mbps	Average broadband speed	Lead: MoTS ZICTA, ISPs, MNOs
Assess spectrum needs for rural areas to review fee structure.	1	Spectrum needs assessment report for revised rural fee structure	Lead: MoTS ZICTA, MNOs, ISPs, Private Sector
Review spectrum and licensing regulations.	1	Spectrum and licensing regulations reviewed	Lead: MoTS ZICTA, MoJ, BRRA
Review and strengthen sanctions on QoS guidelines for enhanced compliance by MNOs and ISPs.	100%	Reviewed and strengthened QoS guidelines	Lead: MoTS Infratel, ZICTA, MNOs, ISPs
Invest in infrastructure for smart cities.	20	Number of cities with smart cities support infrastructure	Lead: MoLGRD MoTS, Infratel, Fibrecom, ISPs, MNOs, Private sector, CPs

Intervention	Target	Performance Indicators	Responsible
Strategy 1: Enhance universal access and usage through the provision of digital infrastructure			
Establish a national coordination mechanism for the deployment of digital infrastructure.	1	National coordination mechanism for the deployment of digital infrastructure established.	Lead: MoTS MPSAs MoFNP, ZEMA, Infratel, ZICTA, CAA, MNOs, ISPs, Private Sector, CPs Local Authorities
Deploy communication towers countrywide.	998	Number of communication towers deployed	Lead: MoTS Infratel, ZICTA, MNOs, ISPs, Private Sector, CPs
Deploy satellite communication technologies.	3	Number of satellite technologies deployed	Lead: MoTS ZEMA, Infratel, ZICTA, MNOs, ISPs, Private Sector, Local Authorities and CPs,
Upgrade 2G and 3G infrastructure to 4G.	80%	% of 2G and 3G infrastructure upgraded to 4G	Lead: MoTS SZI, ZICTA, MNOs, ISPs, Private Sector, MPSAs, ZAMPOST, CPs
Expand national broadband coverage	80%	% coverage of national broadband	Lead: MoTS MCTI, MoFNP, SZI, ZEMA, ZICTA, Private Sector, Local Authorities, CPs
Establish digital transformation centres at district level.	200	Number of digital transformation centres established at district level	Lead: MoTS SZI, ZICTA, MNOs, ISPs, Private Sector, MPSAs, ZAMPOST, CPs
Establish digital device assembly plants.	3	Number of digital device assembly plants established	Lead: MoTS MCTI, MoFNP, SZI, ZEMA, ZICTA, Private Sector, Local Authorities, CPs
Establish optic fibre points of presence at district level.	90%	Number of districts with optic fibre points of presence	Lead: MoTS FibreCom, Infratel, ZICTA, SZI, MNOs, ISPs, Private Sector, Local Authorities, CPs
Establish National IXPs.	3	Number of National IXPs established	Lead: ISPs FibreCom, Infratel, ZICTA, MNOs,
Increase the number of cross border fibre optic links to access undersea cable.	7	Number of cross border fibre optic links established	Lead: MoTS MNOs, ISPs, ZICTA, Private Sector, CPs
Develop and roll out a Digital Public Key Infrastructure (DPKI) Maintenance Plan.	1	Digital Public Key Infrastructure Maintenance Plan developed	Lead: MoTS ZICTA, Fibrecom, Infratel, ISPs, MNOs, REA, Private Sector, CPs
Develop and roll-out a national broadband master plan.	1	National broadband master plan developed	Lead: MoTS ZICTA, Fibrecom, Infratel, ISPs, MNOs, REA, Private Sector, CPs
Increase average broadband speeds from 2.73 to 5.00.	5.00mbps	Average broadband speed	Lead: MoTS ZICTA, ISPs, MNOs
Assess spectrum needs for rural areas to review fee structure.	1	Spectrum needs assessment report for revised rural fee structure	Lead: MoTS ZICTA, MNOs, ISPs, Private Sector
Review spectrum and licensing regulations.	1	Spectrum and licensing regulations reviewed	Lead: MoTS ZICTA, MoJ, BRRA
Review and strengthen sanctions on QoS guidelines for enhanced compliance by MNOs and ISPs.	100%	Reviewed and strengthened QoS guidelines	Lead: MoTS Infratel, ZICTA, MNOs, ISPs
Invest in infrastructure for smart cities.	20	Number of cities with smart cities support infrastructure	Lead: MoLGRD MoTS, Infratel, Fibrecom, ISPs, MNOs, Private sector, CPs

Intervention	Target	Performance Indicators	Responsible
Strategy 2: Facilitate the reduction of costs associated with infrastructure development			
Enforce installation guidelines to ensure sharing of infrastructure among service providers.	90%	% of service providers compliant to digital infrastructure sharing installation guidelines	Lead: MoTS ZICTA
Coordinate deployment of telecommunications infrastructure.	90%	% of telecommunications infrastructure deployment coordinated	Lead: MoTS MoTL, MoE, MoLGRD, ZEMA, Infratel, ZICTA, CAA, MNOs, ISPs,
Enable non-discriminatory access to digital infrastructure.	0%	% of discriminatory access complaints to digital infrastructure recorded	Lead: MoTS SZI, Infratel, ZECHL
Zero rate the supply of minimum 4G base station equipment for deployment in unserved and underserved areas.	0%	% reduction on import taxes on 4G base station equipment for deployment in unserved and underserved areas	Lead: MOFNP MoTS, ZRA, MNOs, ISPs
Establish PPP ventures for rural telecommunication services.	5	Number of PPP ventures for rural telecommunication services developed	Lead: MOFNP MoTS, MCTI, ZDA, PPP Unit
Increase use and interconnectedness of data centres.	3	Number of data centres interconnected	Lead: Infratel MoTS, ZICTA, MoHAIS, MoLGRD
Strategy 3: Facilitate the management of e-waste			
Formulate a national e-waste management strategy.	1	National e-waste management strategy formulated	Lead: MoGEE MoLGRD, ZEMA, MoTS, ZICTA
Set up e-waste collection and disposal facilities in all Provinces.	10	Number of provinces with e-waste collection and disposal facilities established	Lead: MoGEE MoTS, ZEMA, ZICTA, SZI, Private Sector, CPs
Establish ICT repair and refurbishment facilities.	2	Number of ICT repair and refurbishment facilities established	Lead: MoTS MoGEE, ZEMA, ZICTA, SZI, Private Sector
Strategy 4: Enhance quality of service provided by digital infrastructure			
Ensure high network infrastructure uptime for provision of digital services.	89%	Proportion of average annual uptime for high network infrastructure recorded	Lead: MoTS ZICTA, Service Providers
Establish an IMEI registration system to authenticate IMEI numbers in Zambia.	1	IMEI registration system established	Lead: MoTS ZICTA, ZABS, ZCSA
Undertake quarterly quality of experience surveys.	20	Number of quarterly quality of experience surveys undertaken	Lead: MoTS ZICTA
Increase ICT regulation at strategic points of entry.	10	Number of strategic points of entry with ICT regulatory presence	Lead: MoTS ZICTA, ZABS, ZRA, ZCSA
Strategy 4: Enhance quality of service provided by digital infrastructure			
Connect healthcare facilities to energy sources.	1000	Number of healthcare facilities connected to energy sources	Lead: MoH MoE, ZESCO, REA, IPPs, Private Sector, CPs
Connect schools to diverse energy sources.	6000	Number of schools connected to diverse energy sources	Lead: MoE ZESCO, REA, IPPs, MoE, Private Sector, CPs
Establish community digital hubs powered by alternative energy sources (1858 wards).	1858	Number of community digital hubs powered by alternative energy sources established	Lead: MoE MoLGRD, MoTS, Pay-go providers, ZICTA, MoGEE, Private Sector, CPs
Zero-rate supply of solar powered battery infrastructure.	0%	% reduction solar import battery duty and taxes	Lead: MoFNP MoLGRD, MoTS, Pay-go providers, ZICTA, MoGEE, ZRA
Sensitization programmes on the use of energy saving equipment and technologies at community level.	1858	Proportion of population sensitised on the use of energy saving equipment and technologies at community level	Lead: MoGEE ZEMA, ZICTA, MCDSS, ZESCO, Fibrecom, MoE, MoLGRD, Private Sector, CPs

Pillar 2: Digital Platforms

Objective: To promote the development and utilisation of digital platforms

Strategies:

1. Promote the creation of an interoperable digital platform ecosystem;
2. Facilitate the reduction of costs for developing and implementing digital platforms; and
3. Enhance affordability of digital platforms;

Intervention	Target	Performance Indicators	Responsible
Strategy 1: Promote the creation of an interoperable digital platform ecosystem			
Country-wide roll out of National Digital I.D. (INRIS).	1	National Digital I.D. (INRIS) rolled out countrywide	Lead: MoHAIS SZI, MoH, MoLSS, MoFNP, ZICTA, BOZ, PIA, NAPSA, MoTS, ZRA
Enable sector and institutional level adoption and use of digital I.D.	500	Number of sector institutions utilising the digital I.D.	Lead: MoHAIS SZI, MoH, MoLSS, MoFNP, ZICTA, BOZ, PIA, NAPSA, MoTS, ZRA
Encourage the adoption of open APIs in the design and development of new digital platforms.	500	Number of institutions using open APIs in the design and development of new digital platforms	Lead: MoTS SZI, ZICTA, industry, Private Sector, MPSAs
Promote use of open APIs to enable integration of existing digital platforms.	500	Number of institutions using open APIs to enable integration of existing digital platforms	Lead: MoTS SZI, ZICTA, MPSAs
Strategy 2: Facilitate the reduction of costs for developing and implementing digital platforms			
Promote use of open-source software in the public sector.	50%	Proportion of public sector institutions using open-source software	Lead: SZI MPSAs, Private sector, CPs
Develop affordable local hosting solutions.	5	Number of affordable local hosting solutions developed	Lead: MoTS Infratel, ZICTA, Private Sector, SZI
Develop mechanisms to enable affordable access to USSD platforms for start-ups.	500	Number of start-ups accessing low-cost USSD platforms	Lead: MoTS ZICTA, CPs, MNOs, ISPs
Engage service providers to reduce transaction costs for digital platforms;	50%	% reduction in transaction costs for digital platforms and services provided by ISPs	Lead: MoTS ZICTA, CCPC, BOZ, Private Sector, MNOs, ISPs
Facilitate open/shared data access for start-ups.	300	Number of start-ups with open/shared data access	Lead: MoTS ZICTA, ISPs, MNOs, CPs
Strategy 3: Enhance affordability of digital platforms;			
Increase value-added services on digital payment platforms for SMEs and individuals.	500	Number of value-added services on digital payment platforms for SMEs and individuals	Lead: MoFNP BOZ, Private Sector, MNOs, MoSMED, MoTS

Pillar 3: Digital Services

Objective: To enhance provision of interoperable digital services;

Strategies:

1. Promote a rights-based approach to designing digital services;
2. Increase availability of quality and affordable digital services;
3. Promote affordable access to ICT devices for digital services;
4. Promote the development and integration of sector-driven digital services across all sectors of the economy; and,
5. Enhance customer protection and awareness.

Intervention	Target	Performance Indicators	Responsible
Strategy 1: Promote a rights-based approach to the design and Implementation of digital services			
Conduct an assessment of the impact of key digital platforms on the human rights.	1	Impact assessment of key digital platforms on the human rights conducted	Lead: MoTS MOJ, HRC, Civil Society, ZICTA, ZamStats, SZI, Private Sector, CPs
Provide technical and financial support to Civil Society Organisations on digital rights issues.	10	Number of civil society organisations provided with technical and financial support towards digital rights issues	Lead: MoTS MCDSS, MoHAIS, Civil Society, ZICTA, SZI, CPs
Strengthen the technical capacity of the Judiciary on digital rights issues.	1	Capacity development program on digital rights for the Judiciary developed and implemented	Lead: HRC & MOTS Civil Society, ZICTA, MOJ, SZI, CPs, Judiciary
Conduct country-wide sensitisation and awareness campaigns on digital rights.	116	Number of sensitisation and awareness campaigns on digital rights undertaken country-wide	Lead: MoTS Civil Society, ZICTA, SZI, CPs, MoJ
Strategy 2: Increase availability of quality and affordable digital services			
Enable SMEs in the formal and informal sector to adopt digital solutions.	80%	Proportion of SMEs in the formal and informal sector adopting digital solutions	Lead: MoSMED MoTS, ZICTA, BOZ, Private Sector
Increase value-added services on digital payment platforms for SMEs and individuals.	500	Number of value-added services on digital payment platforms for SMEs and individuals	Lead: MoFNP BOZ, Private Sector, MNOs, MoSMED, MoTS
Encourage the provision of digital services in social sectors.	30	Number of digital services provided in the social sector	Lead: MoTS MPSAs, MoH, MoEDU, BOZ, ZRA, SZI
Provide free internet hotspots in public spaces in all provinces.	2500	Number of free internet hotspots established in all provinces	Lead: MoLGRD MoFNP, MoTS, ZICTA, ISPs, MNOs, Private Sector, CPs
Establish partnerships with ISPs to provide subsidised high-speed internet access for rural areas.	10	Number of ISPs providing subsidised high-speed internet to rural areas	Lead: MoTS ZICTA, ISPs, MNOs, CPs
Facilitate open/shared data access for start-ups.	300	Number of start-ups with open/shared data access	Lead: MoTS ZICTA, ISPs, MNOs, CPs
Strategy 3: Enable increased ICT device ownership to enable access to digital services			
Increase smartphone ownership through low-cost financing solutions.	60%	Proportion of population owning smartphones	Lead: MoTS ZICTA, Private Sector, MoFNP
Review tax rate on laptops and smart phones and identify potential areas of reduction and zero-rating.	0%	% reduction on import duty and taxes on selected types of laptops and smartphones	Lead: MoFNP MoTS, ZRA, MCTI, ZABS, ZCSA, ZICTA, Private Sector
Subsidise specialised digital devices affordable for differently abled persons.	60%	% increase in differently abled persons accessing specialised digital devices	Lead: MoFNP MoTS, ZRA, MCTI, MoCDSS, ZAPD, Private Sector

Intervention	Target	Performance Indicators	Responsible
Strategy 4: Promote the development and integration of sector-driven digital services across all sectors of the economy			
Establish a national governance framework to support digital transformation.	1	Digital transformation national governance framework established	Lead: MoTS SZI, ZICTA, MoFNP, MoHAIS, MoD, MPSAs, Private Sector, Civil Society, CPs
Develop sectoral digital transformation strategies and plans: i) Digital health strategy; ii) Digital skills development master plan; iii) E-commerce strategy; iv) Smart transportation sector; v) Digital Education; vi) E-tourism; vii) Digital Agriculture; viii) E-government; ix) Smart cities; x) Digital Energy; xi) Climate Adaptation; xii) Digital Finance; xiii) Other sectors	12	Number of sectoral digital transformation strategies/plans formulated	Lead: MoTS MPSAs, Private sector, civil society, CPs
Develop and implement a national statistical system on the digital economy	1	National statistical system on the digital economy developed	Lead: ZamStats MoTS, MoFNP, MPSAs, CPs
Roll-out of the National e-Government Plan in all districts	116	Number of districts implementing the National e-Government Plan	Lead: EGOV Division MoTS, ZICTA, MPSAs
Establish a national inter-agency coordination mechanism for the regulation of digital issues	1	National inter-agency coordination mechanism for the regulation of digital issues established	Lead: MoTS ZICTA, IBA, BOZ, SEC, PIA
Strategy 5: Enhance consumer protection and awareness			
Establish a collaborative framework for the resolution of digital customer complaints	1	Collaborative framework for digital customer complaint resolution established	Lead: MoTS MoFNP, CPs, ZICTA, CCPC, BOZ, PIA, SEC, PACRA, ZP, MoHAIS, ACC, DEC
Develop a single service window for the resolution of digital complaints and grievances	1	Single service window for the resolution of digital complaints and grievances established	Lead: MoTS MoFNP, CPs, ZICTA, CCPC, BOZ, PIA, SEC, PACRA, ZP, MoHAIS, ACC, DEC
Conduct annual cyber security awareness programs in all Districts	116	Number of districts with cyber security programs conducted annually	Lead: MoTS MoFNP, CPs, ZICTA, CCPC, BOZ, PIA, SEC, PACRA, ZP, MoHAIS, ACC, DEC
Leverage digital platforms for increased transparency and accountability in public service delivery	20	Number of digital platforms promoting transparency and accountability in public service delivery	Lead: EGOV DIVISON MoTS, ZICTA

Pillar 4: Digital Skills

Objective: To enhance digital literacy, skills, and competencies for digital transformation.

Strategies:

1. Enhance information on digital skills on the Zambian market;
2. Build the capacity of learning institutions to meet the current digital needs;
3. Ensure digital learning programs in learning institutions are inclusive;
4. Improve digital financial literacy and basic ICT skills for all;
5. Facilitate the production of an adequate and competent number of ICT professionals with intermediate and advanced skills.

Intervention	Target	Performance Indicators	Responsible
Strategy 1: Enhance information on digital skills in the Zambian market			
Conduct a National digital competency needs analysis.	1	Number of National digital competency needs analysis undertaken	Lead: MoTS MoEDU, MoLSS TEVETA, Learning Institutions, ICTAZ, CPs
Review and operationalise ICT curricula at the primary, secondary and tertiary levels.	3	Number of school curricula reviews undertaken	Lead: MoE MoTS, TEVETA, Learning Institutions, CDC, Private Sector, CPs
Strategy 2: Build capacity of learning institutions to meet the current digital needs			
Equip and upgrade primary and secondary schools with ICT laboratories.	12,000	Number of primary and secondary schools equipped with ICT laboratories	Lead: MoE ZICTA, ZQA, MoTS, Learning institutions, Civil Society, Private Sector, CPs
Equip and upgrade tertiary training institutions with ICT laboratories.	600	Number of tertiary training institutions equipped with ICT laboratories	Lead: MoE ZICTA, MoTS, HEA, CPs, Private Sector
Equip and upgrade TEVET institutions with ICT laboratories.	300	Number of TEVET institutions equipped with ICT laboratories	Lead: MoE ZICTA, MoTS, TEVETA, MoYSA, MoA, CPs, Private Sector
Train ICT personnel at tertiary and TEVET level.	1800	Number of ICT personnel trained at tertiary level	Lead: MoE, MoTS, TEVETA, Learning institutions, Civil Society, Private Sector, CPs
Train ICT teachers for primary and secondary education.	12,000	Number of ICT teachers for primary and secondary education trained	Lead: MoE, MoTS, TEVETA, Learning institutions, Civil Society, Private Sector, CPs
Ensure broadband connectivity to all learning institutions.	75%	Proportion of learning institutions connected to broadband internet	Lead: MoTS ZICTA, MoEDU, ZAMREN, MNOs, ISPs, Learning institutions, Private Sector
Train ICT lecturers in higher learning institutions and TEVET in advanced skills and frontier technologies.	1800	Number of ICT lecturers in higher learning institutions and TEVET trained in advanced skills and frontier technologies	Lead: MoE MoTS, TEVETA, Learning institutions, Civil Society, Private Sector, CPs
Promote inclusive provision of e-learning and blended learning at tertiary level.	75%	Proportion of e-learning and blended learning provided at tertiary level	Lead: MoE, MoH, MoTS, CPs, ISPs, Learning institutions, Civil Society, Private Sector, CPs
Promote provision of e-learning and blended learning at primary and secondary levels in peri-urban and rural areas.	60%	Proportion of e-learning and blended learning provided at primary and secondary level in rural and peri-urban areas	Lead: MoE, MoH, MoTS, Learning institutions, Civil Society, Private Sector, CPs
Promote and encourage ICT teacher volunteer engagement.	1,000	Number of ICT teacher volunteers engaged	Lead: MoE, MoTS, Learning institutions, Civil Society, Private Sector, CPs
Strategy 3: Ensure that digital learning programs in learning institutions are inclusive			
Undertake awareness and capacity building programs targeted at marginalised groups.	100	Number of digital capacity building programs conducted for the marginalised groups	Lead: MoTS TEVETA, ZAPD, MCDSS, MoH, MoTS, Learning institutions, Civil Society, Private Sector, CPs
Prioritise scholarships and bursaries in ICT studies to marginalised groups (women, PWDs, OVCs, youth e.t.c).	10,000	Number of scholarships and bursaries in ICT studies provided to marginalised groups	Lead: MoE, MCDSS, MoLGRD, MoTS, Constituency Offices-CDF, HELSB, TEVETA, MoTS, Learning institutions, Civil Society, Private Sector, CPs
Provide learning institutions with assistive equipment for ICT skills development for PWDs.	500	Number of learning Institutions provided with assistive equipment for ICT skills development for PWDs	Lead MoE, TEVETA, ZAPD, CPs, MoTS, ZICTA

Equip ICT trainers with assistive ICT skills and knowledge.	500	Number of ICT trainers equipped with assistive ICT skills and knowledge	Lead MoE, TEVETA, ZAPD, CPs, MoTS, ZICTA, MoH, Learning institutions, Civil Society, Private Sector, CPs
Strategy 4: Improve digital financial literacy and basic ICT skills awareness for all			
Hold annual community sensitisation campaigns on financial and digital literacy in all districts.	116	Number of districts sensitisation campaigns on financial and digital literacy conducted	Lead: MoFNP BOZ, MoTS, ZICTA, BAZ, PIA, SEC, MoTS, Learning institutions, Civil Society, Private Sector, CPs
Develop and rollout a national programme for digital skills for marginalised groups.	116	National programme for digital skills for marginalised groups rolled out	Lead: MoCDSS MoTS, ZICTA, ZAPD, Learning institutions, Civil Society, Private Sector, CPs
Conduct in-service ICT training for public service workers.	50,000	Number of public service workers undergone in-service training in ICT	Lead: SZI MoTS, MPSAs, Civil Society, Private Sector, CPs
Conduct awareness on fraud and other cyber related scams.	75%	Proportion of national population sensitised on fraud and cybercrimes	Lead: ZICTA Service Providers, BOZ, MoTS, MoHAIS, Civil Society, Private Sector, CPs
Strategy 5: Facilitate the training of ICT professionals with intermediate and advanced skills			
Increase number of ICT students on government bursaries and scholarships.	5000	Number of ICT students awarded government bursaries and scholarships	Lead: MoE, MoTS, TEVETA, CPs, HELSB, Civil Society, Private Sector, CPs
Facilitate ICT specialised certification through corporate, bilateral and multilateral partnerships.	5000	Number of Zambians who have undergone ICT specialised certification	Lead: MoE, MoTS, TEVETA, CPs, HELSB, Civil Society, Private Sector, CPs
Establish linkages between industry and academia to ensure production of industry-ready graduates.	10	Number of industry - academia partnerships established	Lead: MoE, MoTS, TEVETA, CPs, Learning Institutions, Private Sector
Train ICT professionals in new and emerging technologies (e.g. artificial intelligence, robotics, machine learning, blockchain, big data).	5000	Number of ICT professionals trained in new and emerging technologies	Lead: MoE, MoTS, TEVETA, CPs, Learning Institutions, Private Sector, Private Sector, CPs
Increase number of ICT students on government bursaries and scholarships.	5000	Number of ICT students awarded government bursaries and scholarships	Lead: MoE, MoTS, TEVETA, CPs, HELSB, Civil Society, Private Sector, CPs
Facilitate ICT specialised certification through corporate, bilateral and multilateral partnerships.	5000	Number of Zambians who have undergone ICT specialised certification	Lead: MoE, MoTS, TEVETA, CPs, HELSB, Civil Society, Private Sector, CPs
Establish linkages between industry and academia to ensure production of industry-ready graduates.	10	Number of industry - academia partnerships established	Lead: MoE, MoTS, TEVETA, CPs, Learning Institutions, Private Sector
Train ICT professionals in new and emerging technologies (e.g. artificial intelligence, robotics, machine learning, blockchain, big data).	5000	Number of ICT professionals trained in new and emerging technologies	Lead: MoE, MoTS, TEVETA, CPs, Learning Institutions, Private Sector, Private Sector, CPs

Pillar 5: Digital Innovation and Entrepreneurship

Objective: To create an enabling environment for digital innovation and entrepreneurship.

Strategies:

1. Promote the establishment and growth of inclusive innovation and incubation hubs;
2. Promote equitable access to appropriate and adequate financing for digital innovation and entrepreneurship;
3. Enhance research and development;
4. Facilitate the creation of digital employment and entrepreneurship opportunities.

Intervention	Target	Performance Indicators	Responsible
Strategy 1: Promote the establishment and growth of innovation and incubation hubs			
Carry out mapping of innovation ecosystem actors.	1	Mapping for innovation ecosystem actors conducted.	Lead: MoTS, Innovation Hubs, NTBC, ZITC, MSME, Financial Institutions, Research and academic institutions, Private Sector, CPs
Establish innovation and incubation hubs.	10	Number of innovation and incubation hubs established	Lead: MoTS, Innovation Hubs, NTBC, ZITC, MSME, MYSA, Financial Institutions, Research and academic institutions, Private Sector, CPs
Formulate an inclusive national innovation collaboration mechanism.	1	Inclusive national innovation collaboration mechanism formulated	Lead: MoTS Innovation Hubs, NTBC, ZITC, CPs, MSME, MYSA, Civil Society, Private Sector
Mobilise resources for innovation hubs.	10	Number of innovation hubs funded	Lead: MoTS, Innovation Hubs, NTBC, ZITC, MSME, MYSA, Financial Institutions, Research and academic institutions, Private Sector, CPs
Carry out capacity building for innovation/incubation hub managers.	20	Number of innovation/ incubation hub managers capacitated.	Lead: MoTS, Innovation Hubs, NTBC, ZITC, MSME, Financial Institutions, Research and academic institutions, Private Sector, CPs
Establish a public private venture capital for digital innovation.	1	Public private venture capital for digital innovation established.	Lead: MoTS, Innovation Hubs, NTBC, Private Sector, MSME, Financial Institutions, Research and academic institutions, Private Sector, CPs
Establish and harmonise regulatory and industry instruments that enable innovation testing e.g. regulatory sandboxes, industry sandboxes, etc.	5	Number of regulatory and industry instruments for innovation testing established.	Lead: MoTS, ZICTA, BOZ, SEC, PIA, ISPs, MNOs, industry, private sector, CPs
Strategy 2: Enhance research and development			
Establish linkages between university research and industry needs.	10	Number of industry – university research partnerships established	Lead: MoE and MoTS Learning institutions, Private Sector, Financial Institutions, Research and academic institutions, Private Sector, CPs
Encourage public institutions to budget for and implement research and development.	150	Number of public institutions with R&D annual budgets	Lead: MoFNP MoTS, line ministries, industry players
Establish partnerships between local and international researchers.	5	Number of local and international research partnerships established	Lead: MoTS MoFAIC, Financial Institutions, Research and academic institutions, Private Sector, CPs
Strategy 3: Facilitate the creation of digital employment and entrepreneurship opportunities			
Enable mentorship programmes between established entities and stage start-ups.	20	Number of mentorship programmes between established entities and stage start-ups implemented	Lead: MoTS Innovation Hubs, MSME, Private Sector, Learning Institutions, Financial Institutions, Research and academic institutions, CPs
Host innovation fairs, exhibitions and industry-wide festivals.	15	Number of innovation fairs, exhibitions and industry-wide festivals hosted	Lead: MoTS Innovation Hubs, MSME, Learning Institutions, Financial Institutions, Research and academic institutions, CPs
Enable linkages between innovators and the investment	5	Number of innovation - investment community linkages	Lead: MoTS Innovation hubs, Investors, NTBC, MCTI, ZDA

7.0. National Digital Transformation Strategy Results Measurement Framework

The results measurment framework of the National Digital Transformation Strategy allows implementing institutions and other stakeholders to monitor progress towards the attainment of the high-level impact and outcomes outlined in the table below. The results in the results measurement frameowork are presented at two levels:

i) Impact indicators representing national-level targets that measure progress driven by a range of actions, including some which may be outside of the scope of the National Digital Transformation Strategy.

ii) Outcome indicators representing results which are directly linked to the achievement of specific interventions mapped within the National Digital Transformation Strategy.

Pillar/Driver	Impact and Outcome Indicator	Baseline	Target (2026)	Data Sources	Reporting Frequency
Infrastructure	Mobile network coverage by population	86.90%	92%	MNOs, ZICTA	Annual
	Mobile network coverage by geography	69.90%	75%	MNOs, ZICTA	Annual
	Number of Districts with Fibre PoPs	83	116	MNOs, ZICTA, ISPs	Annual
	Internet Penetration rate	54.60%	80%	MNOs, ZICTA, ISPs	Annual
	% of population covered by 4G	New	85%	MNOs, ZICTA, ISPs	Annual
	Average broadband speeds	2.75mbps	5.00mbps	MNOs, ZICTA, ISPs	Quarterly
	Number of communication towers	3,457	4,455	MNOs, ZICTA, ISPs, Infra. Developers	Annual
	% of population with access to electricity	34%	50%	ZESCO, REA, ERB	Annual
	% of schools connected to electricity	44.60%	55%	MoE	Annual
	% of adults able to use a computer	6.80%	16%	ZICTA, Zamstats	Bi-Annual
	% of Secondary schools with ICT laboratories	61%	85%	MoE, ZICTA	Annual
	Number of innovation hubs	0	10	NTBC, BongoHive, ZICTA	Annual
	Number of digital solutions commercialised local solutions	11	15	NTBC, BongoHive, ZICTA	Annual
	% of preferential procurement	New	5%	ZPPA	Annual

Platforms and Services	Device ownership (Mobile phone)	44%	60%	ZICTA	Annual
	Share of Smartphones among Mobile Phones	29.60%	50%	ZICTA	Annual
	Internet penetration rate	54.60%	70%	ZICTA, MNOs, ISPs	Annual
	Cost of 1GB bundle as a share of GNI per capita (internet)	3.80%	2%	ZICTA, MNOs	Annual
	DFS account ownership	5,275,004	7,000,000	FinScope, BOZ Annual Provider Survey	Annual
	(No. of persons)				
	Number of active agents/100,000 adults	1162.2	2000	BoZ Zamstats	Annual
	% of Households with access to a computer	8.10%	20%	ZICTA, Zamstats	Annual
	Proportion of citizens with digital ID	New	70%	MoHAIS	Annual
	Proportion of public and private institutions adopting use of digital IDs	New	60%	EGOV DIVISION, MoHAIS	Annual
	% of healthcare facilities providing digital health services	1200	2000	EGOV DIVISION, MoH	Annual
Cross-cutting	National Cyber Security Index	68.80%	85%	ZICTA, NCSA	Annual
	National IDES score	45%	80%	UNCDF	Annual
	e-government Development index	0.5022	0.7	EGOV. DIVISION,	Annual
	e-commerce readiness index	New		EGOV DIVISION, MCTI	Annual

Notes

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Republic of Zambia

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