Republic of Uganda

MINISTRY OF INFORMATION, COMMUNICATIONS TECHNOLOGY AND NATIONAL GUIDANCE

Vision for A Digital Uganda

2040

Digitalization for Uganda's Socio-economic Transformation

SEPTEMBER 2022

Vision Statement

A digitally empowered society and a knowledge-based economy

Mission

Leveraging all-round use of ICTs to digitally transform society

Goal

Digitalization that inspires innovation and productivity of people, organizations, businesses and government by 2040

Strategic Interventions

Pillar 1:	*Digital Infrastructure and Connectivity*
Pillar 2:	*Digital Services*
Pillar 3:	*Cyber Security, Data Protection and Privacy*
Pillar 4:	*Digital Skills*
Pillar 5:	*Innovation and Entrepreneurship*

Foreword

Our journey to the transformation of our society from a Peasant to a Modern and Prosperous Country requires that we address the strategic bottlenecks that have constrained Uganda's socio-economic development since independence. These include; weak private sector, underdeveloped human resources, inadequate infrastructure, small market, lack of industrialization, underdeveloped services sector, and underdevelopment of agriculture. However, achieving this transformational goal requires us to strengthen the fundamentals, which include: infrastructure; Science, Technology, Engineering and Innovation (STEI); urbanization; and human resource.

Today, technology is profoundly transforming our world - the way we live, interact, work, do business and organize our government. It is not just becoming an integral part of our daily lives, but also offering new ways of addressing our various local challenges that hinder us from realizing the gainful quantitative and qualitative transformation we desire. Like was the case with electricity during the 19th century, ICTs have emerged today as a powerful booster of innovation and an enabler of profound changes in the economy and society.

As the world sprints on towards bringing virtually all things online, we cannot afford to be left behind by the rest of the world this time like was the case with the other industrial revolutions. We need to move forward collectively - citizens, consumers, business actors, academia and politicians - in this ever-changing technological cosmos, endorsing its uncertainties, and reaping the benefits of this digital age, in a people-friendly and socially-friendly way. As government, we seek to empower everyone in our country – regardless of geographical location, income, education, age or gender, to reap the benefits that technology offers. We do have an opportunity as a country to leapfrog in using technology to enhance our economic competitiveness and the well-being of our people, if we work together and work smarter. We have a majorly young population and should harness this by skilling our youth to be producers of goods, services and agents of our transformation. We need, also, to create an enabling environment for the private sector to do business. Furthermore, we need to embrace technology to improve the efficiency and effectiveness of public administration and services.

Resulting from our earlier considerations of investments in telecommunications that started in 1993 as part of the broader 1987 National Economic Recovery Program, the Government of Uganda adopted a four-part strategy to facilitate the rapid expansion of the telecommunications

sector. This strategy included the introduction of competition in the sector and the privatization of the incumbent telecommunications company to encourage the participation of private investors in the development of the sector. This strategy has recorded significant success against our initial objectives although these were focused on the need to provide an acceptable minimum of infrastructure to enable basic voice telephony. At the time, we had a penetration of 0.26 telephone lines per 100 people comprising of 45,145 fixed telephone lines and 3000 cellular mobile subscribers. Today, about 85% of the country has coverage for mobile voice communications services with 26,129,774 mobile subscribers.

This digital agenda will now guide us to harness technology further in order to deliver more and better results for our people. We desire to work with all - private sector, academia and other development partners, to ensure this digital revolution does lead to qualitative and quantitative transformational development of our economy and society while enabling sustainable solutions to the problems facing Uganda and the rest of the world.

For God and My country.

H.E GEN. YOWERI KAGUTA MUSEVENI
President of the Republic of Uganda

Preface

Digital technologies are one of the most transformational tools of our time. These can facilitate us in improving service delivery for citizens and businesses, and foster more productive, competitive economy and inclusive growth. Empirical evidence from various studies has shown that digitization does impact the growth of the Gross Domestic Product, job creation, innovation, transparency and effective delivery of public services, among other aspects.

As a country, we have achieved significant progress in developing the reach and scope of our communications services. However, we now need to revisit our ways of thinking and adopt a complete cultural shift with respect to ICTs if we are to reap the benefits of this digital age.

We have, thus, developed this Digital Uganda Vision as roadmap towards our transformation into a digital society. The Digital Uganda Vision is a collective determination derived from study, exchange of ideas among our national experts, multi-sectoral dialogues and complemented by lessons from international experience.

Our goal is to have ICTs incorporated into every aspect of the everyday lives of people, organizations, business and government. The Digital Uganda Vision, therefore, comprises of actions and commitments to turn us into a digital society, setting out what we should be doing for the next few years and the guide to the formulation, implementation and evaluation of the government's digital policies. It is also aligned with the goals of the National Development Plan III of achieving increased household incomes and improved quality of life, to be realized through implementation of the National Development Plans.

The Digital Uganda Vision is, however, a flexible, living document, in recognition of how fast technology changes. We shall continue to monitor the developments and implications of the various new and emergent technologies such as the cloud computing, artificial intelligence, distributed ledger technologies, Internet of Things, Big Data analytics, Augmented Reality and quantum mechanics.

As a Ministry responsible for ICT, we are committed to ensure the Digital Uganda Vision achieves its aspirations and provide support to all the other sectors of the economy. We seek to create an environment of partnership in which we all collectively take the action that this demands, ensuring that nobody is left behind. I do encourage you all to be part of the realization of this plan.

HON. CHRIS BARYOMUNSI, MP
Minister of ICT and National Guidance

Acknowledgement

This Digital Uganda Vision (DUV) has been made possible by different stakeholders in the Annex who pooled together under the leadership of the Ministry of ICT and National Guidance. Comprehensive stakeholder consultations were undertaken in preparing and finalizing the DUV.

The Ministry conveys its gratitude to key stakeholders including the financial support provided by UNCDF and provision of a national consultant Drake Rukundo in finalization of this document, the ICT and National Guidance Committee of Parliament, the Uganda Communications Commission (UCC), the National IT Authority Uganda (NITA-U), Ministry of Finance Planning and Economic Development, National Planning Authority (NPA) and the ICT fraternity in Uganda.

The DUV has also greatly benefited from technical assistance provided by the Government of India, Intel Corporation (UK) Limited and the International Telecommunications Union (ITU). In a special way, we would like to appreciate the Late Marcelino Tayob, former Senior Adviser, Regional Office for Africa, the Late John Bosco Kivuma Kintu who played a key role in the collaboration between the Ministry and ITU towards the development of this document.

Dr. AMINAH ZAWEDDE
Permanent Secretary, Ministry of ICT and National Guidance

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Acronyms and Abbreviations

4IR	Fourth Industrial Revolution
BCP	Business Continuity Planning
BPD	Business Process Documentation
BPR	Business Process Re-engineering
BPO	Business Process Outsourcing
CERT	Computer Emergency Response Team
CSOs	Civil Society Organizations
CTS	Centenary Technology Services
DTP-WG	Digital Transformation Program Working Group
DUV	Digital Uganda Vision
EAC	East African Community
EGI	e-Government Infrastructure
FY	Financial Year
GDP	Gross Domestic Product
GKMA	Greater Kampala Metropolitan Area
ICT	Information and Communication Technology
IDI	ICT Development Index
IETF	Internet Engineering Task Force
IFMS	Integrated Financial Management System
IP	Internet Protocol
IPv4	Internet Protocol version four
IPv6	Internet Protocol version six
ISPs	Internet Service Providers
IT	Information Technology
KCCA	Kampala Capital City Authority
Km	Kilometers
LGs	Local Governments
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
MDAs	Ministries, Departments and Agencies

MEACA	Ministry of East Africa Community Affairs
MoDVA	Ministry of Defense and Veterinary Affairs
MoES	Ministry of Education and Sports
MoFA	Ministry of Foreign Affairs
MoFPED	Ministry of Finance Planning and Economic Development
MoIA	Ministry of Internal Affairs
MoJCA	Ministry of Justice and Constitutional Affairs
MoLG	Ministry of Local Government
MoPS	Ministry of Public Service
MoWA	Ministry of Tourism, Wildlife and Antiquities
MoWT	Ministry of Works and Transport
MWE	Ministry of Water and Environment
NBI	National Backbone Infrastructure
NCSI	National Cyber Security Index
NDP	National Development Plan
NGOs	Non-Governmental organizations
NPA	National Planning Authority
OP	Office of the President
OPM	Office of the Prime Minister
PDM	Parish Development Model
PIAPs	Program Implementation Action Plans
QOS	Quality of Service
SDGs	Sustainable Development Goals
TV	Television
UCC	Uganda Communications Commission
UNCDF	United Nations Capital Development Fund
WB	World Bank
WIPO	Worldwide Intellectual Property Organization

Glossary

Cleaner Production	A preventive, company-specific environmental protection initiative that is intended to minimize waste and emissions and maximize product output.
Cottage Industry	A small-scale, decentralized manufacturing business often operated at a home residence as opposed to a purpose-built manufacturing facility.
Industrial Cluster	A concentration of interconnected firms, suppliers and supporting institutions in a particular industrial sub-sector. It can be value chain, geographic or product based.
Industrial Development	Increase in the production of economic goods and services, and enhancements in production and consumption patterns because of advancement in technological processes.
Industrial Park	An area planned and designed for the purpose of industrial development and serviced with dedicated industrial load electricity supply, roads, railway, piped water system and ICT networks, among others. Industrial parks enable the timely set up of factories and industries.
Industry	A set of all production units engaged primarily in the same or similar kinds of productive activity**.**
Information Technology	Study, design, development, support, use and management of software applications and computer hardware and systems
Manufacturing Value Added	The net output of the manufacturing sector, calculated from the sum of all outputs and subtracting the sum from intermediate inputs.
Metrology	The science of measurement, which is divided into three fields, namely: legal or trade metrology, industrial metrology and scientific metrology.
Patent	A set of exclusive rights to ownership of a good or service for a specified time as per law established (often an invention).
Technology	Progressive application of new research and science in achieving transformative production of products.

Executive Summary

The Digital Uganda Vision is derived from multiple stakeholder consultations; review of documents from both private and public institutions; review of Digital Strategies and best practice from other countries; and comparison and benchmarking various development indices with other developed and developing countries.

The purpose of this Digital Uganda Vision is to have a fused mechanism to guide interventions for a digitally enabled society that is consistent with “a transformed Ugandan society from a peasant to a modern and prosperous country within 30 years”. It will consolidate the previous ICT interventions, achievements, lessons learnt and future prospects.

The purpose of the DUV includes the rationalized and effective utilization of digital technologies to contribute to improved rankings in the various global competitiveness indices to attract foreign direct investment. The DUV shall align with key documents such as the NRM Manifesto and the new laws enacted in between January 2015 to July 2020 such as Data Protection and Privacy and Act, 2019. This is in recognition of the fact that ICT has a critical role in driving the economic, social and political development of Uganda as espoused in Vision 2040; and it is a roadmap to a knowledge economy and society that will lead to real socio-economic growth. It is therefore imperative to address key challenges that may hinder Information and Communications Technology (ICT) from playing its rightful role in national development.

The Uganda Vision 2040 is the national long-term development blueprint that aims to transform a transformed Ugandan society from a peasant to a modern and prosperous country within 30 years.

The Digital Transformation Program, which is one of the foundations for national transformation in the National Development Plan III (NDP III) 2020/21 – 2024/25 is “to increase ICT penetration and use of ICT services for social and economic development”.

Taking into consideration Vision 2040 and its National Development Plans (NDPs), the vision of this Digital Uganda Vision is “A Digitally Empowered Society and Knowledge Economy” with the following six guiding principles: equity; technology neutrality and open access; environmental protection and safety; good governance; collaboration; and promotion of local content.

This Digital Uganda Vision has five aspirations and five pillars. The aspirations are how we want ICT to facilitating a digitally empowered society and a knowledge economy. The first aspiration of this Digital Uganda Vision is Digital and Data-driven Economy, which aims at ensuring digitalized information and knowledge are used as key factors of production and planning resulting in informed decision making, increased productivity, improved research & innovation, increased business opportunities for inclusive growth. The second aspiration is Transformation of Service Delivery, which aims at digitalizing service delivery mechanisms to enhance the efficiency and effectiveness of business processes in Government such as e-immigration services, tax collection, e-procurement all aimed at easing service delivery to the public.

All Government systems integrated to avert duplication and lower costs of service delivery. The third aspiration is ICT Businesses and Investment, which aims to attract investments and promote local ICT enterprises that can compete internationally for job creation, import substitution and ICT export promotion. The fourth aspiration is Improved Global Competitiveness, which aims at

improved rankings in the various global competitiveness indices including the ease of doing index, e-government index, e-readiness, information society, ICT Development Index, etc. The fifth aspiration Digital Inclusion and Empowerment, which aims to ensure that ICTs are enjoyed by everybody irrespective of their age, gender, ethnicity, geographical location, income, literacy levels including persons with special needs.

The Pillars are the critical actions that need to be undertaken in order to lay a basis for achieving the aspirations. These include:

i. **Pillar 1: Digital Infrastructure and Connectivity** which aims to establish Integrated Digital infrastructure that entails; having sufficient capacity to cater for the current and future demands.

ii. **Pillar 2: Digital services** which include the delivery of information including data and content across multiple platforms and devices such as web or mobile. This pillar seeks to promote the identification, development and implementation of citizen, business, government and employee centric e- Services.

iii. **Pillar 3: Cyber-security and Data Protection and Privacy** which provides assurance that digital services are safe, secure, protected, and trusted and when in use.

iv. **Pillar 4: Digital Skills** which focuses on building a digitally enabled society that is agile and able to adapt to emerging technologies and trends. It also looks at promotion of digital literacy and ICT professional development for the current and future industry needs.

v. **Pillar 5: Innovations and Entrepreneurship**, which focuses on commercialization of local innovations and establishment of local ICT businesses. Local innovations include ICT systems, products and content.

With the implementation of the Digital Uganda Vision, the following outcomes are expected by 2040:

- 90% household connectivity
- 90% connectivity for all government institutions (both central and local governments)
- 90% connectivity to SMEs and other private institutions
- 90% broadband coverage by geography.
- 90% of citizens accessing e- services online
- 95% of government services online
- 90% of government services integrated and interoperable
- 90% of institutions with cybersecurity safeguards in place
- 90% compliance to data protection and privacy laws and standards
- 90% digitally literate citizenry
- 70% of industry skills requirements addressed
- 60% utilization of local ICT products and services by government and private sector

The total cost imperative to digitalize Uganda by 2040 will require a first phase financing up to 2030 of UGX 6.08 trillion by the end of NDP IV period.

1. AN OVERVIEW

1.1 Introduction

The Vision for a Digital Uganda envisages an empowered Ugandan society with more services delivered and accessed digitally resulting in improved service delivery, greater and inclusive citizen participation in national development for their socio-economic transformation. The DUV is an overarching 8-year ICT development framework that is aligned to the Uganda Vision 2040. This Vision stipulates that ICT has enormous opportunities that Uganda can exploit to transform the economy through: build robust and trusted high speed ICT infrastructure; manufacturing of ICT products; improving availability of digital content and e-products, automation of Government processes and inter-agency connectivity & innovation; development of platforms on which the private sector can co-create with the Government, offering new value-added services to the public; and establishment of incubation centers among others.

This Vision aims at harmonization of Uganda's transformative policies, strategies, initiatives and other governance frameworks for the expedient realization of national development aspirations. This is line with the Comprehensive National Development Planning Framework (CNDPF) that was adopted by Government in 2007 and outlines the structure for short (sector and local government plans); medium term (program implementation action plans (PIAPs) under the national development plans and long-term (10 year) plans. The Vision for a Digital Uganda will transcend the duration of the current of the third National Development Plan (NDP III FY 2020/21- 2024/25) and its interim implementation will be evaluated at the end of the forth NDP (NDP IV FY 2025/26- FY 2029/30). It will undergo and evaluation in FY 2030/31 and updated, as technology evolves.

1.2 Contextualization and Rationale

For Uganda to achieve the transformation of society, the country has to overcome strategic bottlenecks that have constrained its progression including a slow uptake of technological transformation. ICTs have emerged today as a powerful booster of innovation and as enabler of profound socio-economic transformation. Government saved 4 Million working hours in 2017 from providing automated services. Digitalization is therefore a driver of this transformation.

Achieving the DUV aspirations requires a paradigm shift to it to be realized. Key among these is the establishment of a hi-tech city, ICT and BPO parks, "**whole of Government**" transformation by putting public services online and automating business processes; It has also been 10 years since Uganda adopted its Vision 2040 and there have been a number of developments in the ICT landscape hence the need for a broad vision blueprint to guide interventions for a digitally enabled society that is consistent with "a transformed Ugandan society from a peasant to a modern and prosperous country within 30 years". The DUV has therefore been put in place to consolidate the previous ICT interventions, achievements and future prospects to actualize the Vision 2040.

1.3 Aspirations of a Vision for a Digital Uganda

These shall the Government's aspirations in its pursuit to achieve a digital society.

(a) **Transformation of Service Delivery:** The service delivery mechanisms digitalized to enhance the efficiency and effectiveness of business processes in Government such as e-immigration services, tax collection, e-procurement all aimed at easing service delivery to the public. All Government systems integrated to avert duplication and lower costs of service delivery

(b) **A Digital and Data Driven Economy:** A country where digital information and knowledge are key factors of production and planning resulting in informed decision making, increased productivity, improved research & innovation, increased business opportunities for inclusive growth

(c) **ICT- enabled Businesses and working Investment:** An enabling environment created that attracts investments and promotes local ICT enterprises that can compete internationally for employment, import substitution and ICT export promotion.

(d) **Improved Global Competitiveness:** Improved rankings in the various global competitiveness indices including the ease of doing index, e-government index, e-readiness, information society, ICT Development Index.

(e) **Digital Inclusion and Empowerment that reduces poverty and vulnerability:** ICTs are enjoyed by everybody irrespective of their age, gender, ethnicity, geographical location, income, literacy levels including persons with special needs.

1.4 The Vision Formulation Process and Methodology

This Digital Uganda Vision is derived from multiple stakeholder consultations; review of documents from both private and public institutions; review of digital Strategies and best practice from other countries; and comparison and benchmarking various development indices with other developed and developing countries. While the elaboration of this document was spearheaded by the Ministry of ICT and National Guidance, the process and input was derived from all sectors of the economy including the private sector and other non-state actors from: Judiciary, Office of the President (OP), Office of the Prime Minister (OPM), Ministry of Finance Planning and Economic Development (MoFPED); Ministry of Education and Sports; Ministry of Works and Transport; Ministry of Internal Affairs (MoIA); Ministry of Agriculture Animal Industry and Fisheries (MAAIF); Ministry of Water and Environment (MWE); Ministry of Justice and Constitutional Affairs (MoJCA); Ministry of Defense and Veterinary Affairs (MoDVA); Ministry of Public Service (MoPS); Ministry of Tourism, Wildlife and Antiquities (MoWA); Ministry of Foreign Affairs (MoFA); Ministry of East Africa Community Affairs (MEACA); academia including Makerere University, Agencies including National Planning Authority (NPA) and Uganda Communications Commission (UCC), as well as private sector including Centenary Technology Services (CTS), Non-Governmental organizations (NGOs) and Civil Society Organizations (CSOs) and the media – also known as the fourth estate.

2. SITUATIONAL ANALYSIS

In an attempt to achieve broad digitalization with the productive sectors of the economy, Government has implemented various interventions to ensure ICT penetration, skills formation, expanding wider use of management information systems and countering cybercrime. Over the years, there has been an increase in appreciation of the tenacity of ICT in transforming productivity. However, there is still a need for elevating our ways of thinking, and adopt a complete cultural shift with respect to ICT deepening and digitalization of all aspects of the economy. This chapter casts the current context at global, regional, national levels upon which this vision is capitulated.

2.1 Global and Regional and National Context

While global technologies have grown exponentially since the onset of the fourth industrial revolution, so has their use in various forms of our lives. The industrial age has evolved as follows:

i. **The first 'Coal' Industrial Revolution of 1765** characterized by the development of the steam engine and metal forging that revolutionized spinning and making of fabric and canal and rail transportation
ii. **The second 'Gas' Industrial Revolution of 1870** buoyed by the invention of the combustion engine and entry of steel and chemically-based products
iii. **The third 'Computer' Industrial Revolution of 1969** that saw the introduction of computers that spiked the use of telephones, planes and cars and automated assembly lines
iv. **The current forth industrial revolution in 2000s** characterized by industrial internet of things, artificial intelligence including robotics, big data analytics (including 5G mobile network), cloud computing and machine learning.

Mass uptake of computer technology has enabled the human race to access and transmit information, produce value-adding equipment and take advantage of an acceleration of technological progress to improve their quality of life. However, technological advancement has also come with various challenges and threats human tranquility namely:

i. **Cybercrime** that has manifested in money laundering, erosion of data piracy, acceleration of cyber-attacks, ransomware, and espionage;
ii. **A widened gap** between those with technologies and those without – a disparity that has kept many locked in poverty and backwardness
iii. **Nuclear race** where an arms race continues to grow among the developed countries with limited regard to the Treaty of non-proliferation of nuclear weapons
iv. **Large scale production of electronic waste** with serious ramifications to the environment.

To overcome these and other challenges, Uganda as part of the global family, shall require to embrace a digital age that ensures that there is a progressive structure change in access, use and transition –

in a manner that ensures inclusivity and beneficiation for all – with a focus on the most disadvantaged and those left behind. This is the aspiration of the UN Sustainable Development Goals **SDG Goal 9 – on Innovation and Infrastructure**. Uganda is among the few countries in Africa that have tested out the IDES is a policy tool, that supports governments in setting priorities that drive digital transformation while reducing the digital divide. The IDES is a central tool of UNCDF's "Leaving no One behind in the Digital Era" strategy. The objective is to provide a tool to easily measure and track the level of development of an inclusive digital economy at the country level. The tool identifies the key market constraints hindering the development of an inclusive digital economy and helps set the right priorities with public and private stakeholders in each country to foster a digital economy that leaves no one behind.

At the continental level, the Africa Agenda 2063 envisions an African people that are inspired by a shared prosperity characterized by a high standard of living and anchored on a high quality and inclusive education that is driven by science, technology and innovation. The target for African countries is to implement various interventions to ensure that the contribution of ICT to GDP is at least 9% (and above past 2021). An example of how beneficial it will be for Africa countries that implement joint interventions to advance digitalization is shown below:

Africa saw an increase in the contribution of ICT to GDP, rising from 5.12% in 2013 to 7.23% in 2020. For example, in line with the ICT Infrastructure objectives of the National ICT Policy, Seychelles rolled out of its first submarine cable – the Seychelles East Africa Submarine (SEAS) cable – which is connected to Dar es salaam, Tanzania. The laying of SEAS has boosted Internet usage mainly with the decrease in price per Gigabyte for Internet usage and an increase in Internet speed. This has also led to the establishment of many businesses and utilization of the platform for service delivery by the private sector and Government. Subsequently, the contribution of ICT to GDP increased from 8% to 13% in 2013 and 2021 respectively. **Source: Second Continental Progress Report on Africa Agenda 2063**

At the EAC level, the East African Community (EAC) member states recognize the role played by Science, Technology and Innovation (STI) as a driver of socio-economic transformation. Aligned the East Africa Vision 2050 and in consonance with the African Union's Agenda 2063, and the UN Agenda 2030 Sustainable Development Goals, EAC has elaborated its maiden STI Strategy. This strategy has been developed by the East African Science and Technology Commission (EASTECO) in collaboration with key stakeholders including United Nations Educational,

Scientific and Cultural Organization (UNESCO). The Vision for a Digital Uganda is part of the means to domesticate the EAC STI strategy.

At the national level, the contribution of ICT to GDP stands at only 9% and the proportion of employment in ICT related sector stands at 2.3 million people (against the NDPII target of 3 million during NDP II period of 2014/15 to 2019/20). The sector contribution to GDP averaged at 3.1 percent and significantly contributed to national revenue. The growth is attributed to considerable initiatives made by both Government and Private players in expansion of infrastructure coverage, development of e-services among others. This consequently resulted in an upward trend in the usage of and access to ICTs. These initiatives have improved the ICT Sector contribution to GDP over the years. According to NPA, the information and communications services continued to grow at an average growth rate of 14.8 percent during the NDPII period (2014/5 to 2019/20) with the main drivers being the telecommunications followed by the broadcasting activities. Contribution from other activities such as computer programming as well as the ICT trade and manufacturing industries remained low.

2.2 Legal, Policy, Regulatory and Institutional Framework

Uganda's approach is to establish a legal, policy, regulatory and institutional framework which like technology itself is agile, end-to-end, and human-centered. This framework shall consider open source regimes and innovation incubation (and sandboxes), trail, adoption and upscale aimed to digitalized the way of doing things. This framework is supported by a robust set of laws and policies including:

a) **Key policies** that include the overall National ICT Policy 2014 (being reviewed) the National Broadband Policy 2018, Electronic Waste Management Policy 2012 and the National e-Government Policy Framework 2011.

b) **Acts of Parliament** that include: Access to Information Act 2005; National Information Technology Authority, Uganda Act 2009; Regulation of Interception of Communication Act 2010; Electronic Transactions Act 2011, Electronic Signatures Act 2011 and Computer Misuse Act 2011; Uganda Communications Act 2013; and the Data Protection and Privacy Act 2019. Gap analysis of the policy, legal and regulatory framework for Uganda's ICT Sector was conducted in 2019 and the work towards implementing the recommendations has commenced.

c) **Regulations:** The regulations include Electronic Transactions Regulations 2013, Electronic Signatures Regulations 2013, National Information Technology Authority – Uganda (NITA-U) (e-Government) Regulations 2014, NITA-U (Certification of Providers of IT Products & Services) Regulation 2016, and NITA-U (Authentication of IT Training) Regulations 2016. There are also several regulations under the Uganda Communications Act which include the Uganda Communications (Licensing) Regulations 2019, Uganda Communications (Interconnection and Access Regulations 2019, Uganda Communications (Computer Emergency Response Team) Regulations 2019 and the Uganda Communications (Emergency Response) Regulations 2019.

A gap analysis on the policy, legal and regulatory environment has been conducted and it identified areas that need to be reviewed and new frameworks that need to be developed. The achievements notwithstanding, the following are the challenges in the policy, legal and regulatory environment:

i. The current policies and legislations are out-date and not matching with current times
ii. The emergence of new technologies such as the 4th Industrial Revolution (4IR) comes with legal and policy challenges which the current legal and policy environment is unable to cope with
iii. There are fragmented efforts for policy and legislation development that are a potential risk of duplications and conflicts
iv. The era of Data Privacy and Protection is still not yet completely taken care of.

2.3 Status of Infrastructure and connectivity

Uganda has made progress to have affordable, accessible, resilient and secure digital infrastructure and connectivity for citizens, government, businesses, etc. across the country as a foundation to achieve the potential of ICTs. For instance, under the national backbone infrastructure and e-Government infrastructure (NBI/EGI) project, Government through the MoICT&NG has provided connectivity to Ministries, Departments and Agencies (MDAs) as well as Local Governments (LGs) through the laying of Optical Fiber Cable across all major towns. This has:

i. **Under Phase 1:** Connected 168km of optical fiber cable linking the towns of Entebbe, Mukono, Jinja, Bombo to kampala including 27 MDAs **(Yellow line)**
ii. **Under Phase 2:** Completed a total of 1,400 km of optical fiber cable connection to Busia, Tororo, Mbale, Malaba, Kumi, Soroti, Lira, Gulu, Elegu, Masindi, Kyenjojo, Fort Portal, Kasese, Bushenyi and Mbarara **(Blue line)**
iii. **Under Phase 3:** Completed the extension of the NBI to Masaka, Mutukula border post, Mbarara, Kabale and the Katuna Border post **(Green line)**
iv. **Under Phase 4**: Added over 100 MDAs to the NBI bringing a total of connected MDAs to 603. This phase is on-going with building of the Kasese-Mpondwe optical fiber cable link as well as Karuma-Arua-Koboko-Elegu link with an aim to join the Soroti-Moroto optical cable link **(maroon line on the map)**
v. **Last Mile Connectivity**. To complete the entire country's connectivity, 700 sites are to be connected to cover overall a total of 3,156km across 52 major districts connecting over 1,300 Government Officers. Out of 700 sites planned 575 have so far been **connected (pink line on the map)**.

There are other aspects of infrastructure and connectivity that government has developed including setting up of e-Government systems. To improve service delivery and increase uptake of e-services, government developed common core infrastructure such the National Data Center and Disaster Recovery Site, rolled out a series of horizontal shared services that cut across different public sector

organization and several electronic governments (e-Government) systems across various MDAs/LGs. The table below shows position and targets for Uganda's digital transformation and outline in Uganda's third National Development Plan (NDP III).

Objective	Outcome	Indicator	Baseline (2018)	Targets				
				2021	2022	2023	2024	2025
Increased national ICT Infrastructure coverage	**Increased ICT penetration**	Internet penetration	25%	30%	35%	43%	46%	50%
		Population covered by broadband services (%)	74%	79%	79%	83%	87%	90%
		Digital Terrestrial TV signal services coverage (%)	56%	79%	79%	83%	87%	95%
		Radio signal coverage (%)	80%	85%	87%	90%	95%	98%
		Fixed broadband connectivity (subscribers)	8,868	11,144	13,038	15,255	17,848	20,882
		Cost of 1 Gigabyte of internet	$26.7	$20.0	14.0	10.0	09.0	0.70
Enhanced used of ICT in national Development	**Increased ICT Usage**	Proportion of government services (online) (%)	20%	25%	40%	61%	72%	80%
		ICT contribution to GDP (%)	9.2%	12.67%	12.89%	15.13%	16.4%	17.69%
		National Broadband coverage within a minimum speed of 8 Mbps/hr	31%	41%	51%	61%	71%	90%
Enhance ICT research and innovation	**Reduce cost of ICT services**	Unit cost of low entry smart phones (UGX)	100,000	95,000	87,000	75,000	70,000	60,000
		Cost of computer (UGX)	1,600,00	1,550,00	1,300,000	1,000,000	900,000	800,000
Increase in the ICT human resource capital	**Enhanced efficiency and productivity in service delivery**	ICT development index (IDI value)	2.19	2.5	3.2	3.6	3.8	3.9
		ICT directly created jobs	0	30,000	30,000	30,000	30,000	30,000
Strengthened policy, legal and regulatory framework	**Secure and vibrant ICT sector**	Number of legal and regulatory frameworks developed/reviewed	0	2	4	4	4	2

Source: National Planning Authority (2022) Digital Transformation Program NDP III FY 2020/21-2024/25

Overall Uganda ICT Development Index ranking (IDI) stands at 2.19 making it stand at 20th in Africa and second in East Africa. The IDI index measures ICT access, use and availability of skills. This is attributed to increased computer and mobile phone coverage together with the expansion of the NBI.

The innovations of the private sector include wide use of mobile money platforms are part of the overall efforts to digitalize Uganda.

2.4 Ease of Doing Business

Efforts to digitalize Uganda are geared towards reducing the overall cost of doing business - which remain high. Uganda stands at 116 (2020) with a score of 60, a slight improvement from 58.4 in 2019.This performance is the presented in the chart below, showing good performance in getting electricity, registering property and trading across borders. However, there are still significant challenges in the following areas where enhanced digitalization could help:

i. Getting credit (mainly due to the high informality of the private sector);
ii. Protection of minority investors (associated with red tape and non-tariff barriers)
iii. Enforcement of contracts
iv. Registering property
v. Paying taxes (as a result of the informality of the private sector)
vi. Resolving insolvency (mainly due to gaps in the legal framework)

Fig 1: Doing Business Performance for Uganda (2021)

Source: World Bank Doing Business Index - Uganda (2021)

Aspects where digitalization has helped to reduce the cost of doing business is on implementation of the Single Customs Territory, as well as by developing the Uganda Electronic Single Window and the Centralized Document Processing Centre which has reduced the time needed to export and import. Government has embraced the ICTs potential of improving provision of services by Government and how citizens interact with Government by increasing government productivity through the efficient use of resources, easier access to information as well as wider, quicker, secure and quality service reach. The following are some of the recent developments:

i. Government has embarked on the establishment of a **Whole-of-Government Integration** and data sharing platform to facilitate the seamless collecting and sharing of Government Data. Application Programming Interfaces (APIs) for MDAs have so far been developed. Data collection and development of data catalogue is on-going across various programs
ii. Government has embarked the **development of Digital Identifier** (including setting up of secured domains for MDAs) to be used by government and businesses to enhance service delivery and ensure security and reduced threats of piracy and corruption.

iii. By automation of government processes (including e-procurement, e-cities, e-payment systems, and wider use of management information systems) **saved 4 Million working hours** from providing automated services.

iv. The E-Visa system developed by the Directorate of Citizenship and Immigration Control (DCIC) has reduced the number of days for processing a **work permit from thirty (30) to four (4) working days;**

v. National Medical Stores has automated ordering for ARV medication as well as **Last Mile delivery which has contributed to annual savings of 3,093,120 working hours**;

vi. The Government's integration of Mobile Phone numbers with the National identification data has already been undertaken;

vii. Under, the Registration of Persons Act (2015) a central registration body for - the national registry shall serve as one of the platforms for a national digital identification roll out in Uganda for all citizens. This includes changes to the National Passport and IDs.

viii. There has been a gradual reduction in use of postal services as citizens migrate to use of email and other telecommunications. For instance, between 2015 and 2017 alone, there was a drop in domestic ordinary letter posted from 864,281 to 168,386 – representing a 413.3% drop.

ix. It is estimated today that links to export and import trade done on-line is worth US$ 2.2 billion every year due to wider use of e-commerce and online trading.

2.5 Skills formation for Digitalization

Government is aware of the need for skills formation to design, develop and operate systems and processes that enable digitalization to take root across various walks of life. In order to realize the potential by building human capital for digitalization, Uganda embarked on ICT human capital development by putting in place policies, programs and activities aimed at building capacity at community/user, professional level, expert, teacher, and support level. The Government of Uganda through the Ministry of ICT&NG and its Agencies, specifically Uganda Communication Commission (UCC) is spearheading country-wide ICT capacity building program to skill secondary school teachers aimed at deepening the integration of ICTs in teaching and learning. Government is undertaking various interventions towards skills formation for digitalization including:

i. Integrating ICT into mainstream educational curricula as well as other literacy programs to provide for equitable access for all students regardless of level;

ii. Developing and managing ICT centers of excellence to provide basic and advanced ICT training;

iii. Setting up mechanisms that promote collaboration between industry and training institutions to build appropriate human resources capacity;

iv. Promoting the twinning of training institutions in Uganda with those elsewhere to enhance skills transfer.

Government however, faces the following challenges in as far as skill formation for digitalization is concerned:

i. Insufficient ICT infrastructure, high bandwidth costs, an unreliable supply of electricity, and a general lack of resources to meet a broad spectrum of needs.

ii. Misalignment of the market skills requirements to the curriculum

iii. Insufficient collaboration between Academia, Government and Industry in terms of internships, job skills matching, etc.

Efforts are underway to finalize a Labor Market Information Management System to ensure that the labor market has been revolutionized with digital platforms that match skills with talent management with tools for training, recruitment and deployment in various fields.

2.6 Local Content, Research and Innovation

Government noted that the realization of the potential of ICTs is heavily dependent on development of local content, putting in place an integrated national data bank and grounded research and innovation. To foster the development of local content, the Government of Uganda designed a National ICT Initiatives Support Program (NIISP) to facilitate the creation of an ICT innovation ecosystem and marketplace for Ugandan innovative digital products. Through the NIISP, Government provided grants to 172 innovators between Financial Year (FY) 2018/19 and 2019/20. This was achieved through direct support to innovators or through innovation hubs. The support has seen the development of information systems that are already being used nationally. The construction of the National ICT Innovation Hub in Kampala has also been completed and is due for official commissioning. Efforts were made to incubate the youth to develop local products that can be consumed locally and even exported regionally and internationally and a government supported hub was constructed at UICT Nakawa. There are about twenty privately managed ICT hubs such as Hive Colab, Innovation Village, and Outbox located in and around Kampala and no hubs in most regions of the country.

The achievements notwithstanding, the ecosystem such as the information technology parks that would attract anchor companies to the country have not been established and the interaction between the triple-helix (academia, government, and ICT industry) has remained relatively weak. Entities and assets including businesses, vehicles, land, and more will be digitized and linked to the digital identities of individuals and organizations in a systematic and secure manner allowing for a well-integrated civic, cultural and economic wellbeing. To develop local content, Government shall sustain support to open-source regimes, sandboxes for live-testing of innovative approaches and technologies that enhance productivity and service provision.

2.7 Cyber Security, Data Protection and Privacy

Government of Uganda noted that the realization of the ICT potential by different stakeholders is very much premised on the ability to ensure security of information, privacy and protection of personal data. Initiatives in Cyber Security resulted in an improvement in Global Cybersecurity Index score from 0.536 in 2017 to 0.621 in 2018 though there was a drop in the position from 50th in 2017 to 65th out of 175 in 2018. Uganda still needs to enhance protection of essential services, protection of personal data and cyber crisis management. Uganda has made significant strides in national cyber security enhancement which include:

i. Development of the National Information Security Strategy;
ii. Development and implementation of the National Information Security Framework (NISF);
iii. Establishment of the Uganda National Computer Emergency Response Team and Coordination Centre; and

iv. Establishment of sectoral/thematic CERTs, and development of twelve information security standards, among others.

In order to inspire an inclusive digital society – Government will incentivize open source systems that ensure secure means of use and operation as opposed to close 'proprietary' source options that are prone to manipulation and data piracy.

2.8 Inclusivity and Rural Empowerment for innovation and entrepreneurship

The Inclusive digital economy scorecard IDES-Uganda in 2021, showed that only 26% of Ugandans are utilizing digitally aided services and economic activities. While Government on its part has put in place a strong digital policy and regulatory environment with about 77% of the regimes in place, scores on infrastructure, skills, innovation and inclusivity remain low. Government entities have also had some weaknesses related to the failure to harmonize their operations in the way that generate efficiency gains (notably in information sharing). Digital literacy remains low yet some operations for small and micro-enterprises require online applications.

The high informality of the private sector has locked out small and micro-level enterprises and hindered them from credit access. For instance, a national ID is critical in registration for a SIM card as it is the same that is needed for access to mobile money and other services. Today, internet penetration stands at only 25% while the population covered with broad band services is 74%. There are now over 22 million registered mobile money accounts and over 5 million registered commercial bank accounts. Mobile money platforms have evolved from providing peer-to-peer (P2P) remittances and airtime top-ups to more complex financial products including savings, credit, insurance, and person-to-government (P2G) transaction. Uganda's financial inclusion rate stands at 78% and this is projected to grow to 85% by 2025. The challenge for Uganda remains promoting e-commerce in cases where physical delivery of items is required and in extending digital services to rural areas and bridging the digital divide. The cost of internet bandwidth has been progressively falling from US$ 300 per month 2015 to the current US$22.7. Out of 230 countries, Uganda's global ranking fell from 70th position in 2020 to 86th position in 2021. Out of 51 data plans by various service providers, Uganda's cheapest 1GB package (UGX 1,500) a day and to as high as UGX 80,000 ($22.7) a month.

3. STRATEGIC DIRECTION

The DUV envisions a digitally empowered society with more services delivered and accessed electronically resulting in improved service delivery, greater and inclusive citizen participation in national development as well as improvement in the social-economic wellbeing of the public. The competitiveness of the country improved on the regional and global scene through process re-engineering and efficiency gains realized by the adoption of ICTs. Increased contribution of local knowledge enterprises and products to the income and employment in the economy.

3.1 Vision Statement

A digitally empowered society and a knowledge-based economy

3.2 Mission

Leveraging all-round use of ICTs to digitally transform society by 2040

3.3 Goal

Digitalization that inspires innovation and productivity of people, organizations, businesses and government

3.4 Guiding Principles

The following overarching principles will provide a foundation for all activities associated with digital transformation. They are intended to provide practical guidance that will assist decision makers, policy makers, regulators, implementers and practitioners in the journey to realize the Digital Uganda Vision:

(a) **Good governance:** The implementation of the DUV shall adhere to the highest standards of good governance including accountability, transparency and ethical behavior among others;

(b) **Collaborations and Whole of Government approach:** Engage and collaborate across Government and with industry and other stakeholders in the implementation of the Vision;

(c) **Equity:** All citizens shall have the same consideration in the enjoyment of rights and freedoms, attainment of access to affordable ICT, services and content.

(d) **Technology neutrality and Open Access:** The development of our ICTs shall be technology neutral and use common, interoperable, open access standards and protocols

and foster infrastructure sharing.

(e) **Environmental protection and safety**: The design, utilization, and disposal of ICTs shall maintain the integrity of the environment and safety of the community.

(f) **Promotion of local content:** Promote the use of local solutions in the realization of the Vision.

3.5 Strategic Pillars and Interventions

The attainment of the vision for a digital Uganda will be achieved through five core pillars which shall include:

Pillar 1: Digital Infrastructure and Connectivity
Pillar 2: Digital Services
Pillar 3: Cyber Security, Data Protection and Privacy
Pillar 4: Digital Skills
Pillar 5: Innovation and Entrepreneurship

Under each of these pillars shall be the following strategic interventions and outcomes

Pillars, Strategic Interventions and Expected Outcomes

Pillar 1: Digital Infrastructure and Connectivity

Uganda faces a high cost requirement for laying and maintenance of the required modern digital infrastructure. It is against this background that this pillar aims to establish Integrated Digital infrastructure that entails; having sufficient capacity to cater for the current and future technological infrastructure needs at all levels. It further seeks to ensure that the infrastructure is secure and resilient and supports the delivery of e-services across the productive sectors of the economy. It also seeks to promote coordinated planning and deployment with all service providers across all MDAs and the private sector with linkages to other infrastructure projects like railways, oil pipelines, airfields and airports, roads among others. This pillar shall further put in place mechanisms to reduce costs of infrastructure deployment so as to maximize the benefits to citizens. The integrated digital infrastructure shall lead to universal coverage and access to ICT services.

Strategic Interventions and Outcomes

Strategic Intervention 1.1 Implement an ICT enabling policy framework to widen infrastructure spectrum (e.g. digital terrestrial TV signal coverage, radio signal coverage); infrastructural speed enhancement-national broadband coverage with minimum speeds)

Outcomes

- 80% Internet Penetration
- 100% of Parishes with broadband connectivity
- 100% of districts headquarters connected to the National Broadband Infrastructure

- Medium ranking on the Network Readiness Index (Uganda has rank 114/134 making it 12th in Africa)
- High Global ICT Regulatory Index (Uganda ranks 56th out of 193 countries)

Strategic Intervention 1.2 Coordinate (across and within countries, within government and with private sector), planning, acquisition and deployment and sharing of data through integrated ICT infrastructure and systems.

Outcomes

- 90% of all MDAs and districts sharing data
- 100% of connectivity for all government institutions (both central and local governments)
- % of MDAs, LGs reached with infrastructure to protect them from cyber-attacks
- Increased regional, international coordination on cybersecurity management

Strategic Intervention 1.3 Conduct routine cost-benefit analyses on the suitability of installation of new edge infrastructure including emerging technologies under the 4th Industrial revolution with alignment with other infrastructural development such as for oil and gas and agro-industrialization)

Outcomes

- 99% of beneficiaries satisfied with the Quality of Service QOS over the NBI
- 90% of systems on cloud technology
- Unit cost of 1Mbps/month of internet decreased to 20 USD.
- Sustained investment in modern digital Skilling infrastructure

Pillar 2: Digital Services

Digital services include the delivery of information including data and content across multiple platforms and devices such as web or mobile. This pillar seeks to promote the identification, development and implementation of citizen, business, government and employee centric e-Services. The digital services should be relevant to the needs of the consumers, affordable, secure and available. Under this vision, Uganda shall strengthen governance of digital services and ensure interoperability of a national digital system. This will require, coordination, skilling, awareness creation, boosting of digital security, and improved reliance on online content (including incentives for local production of key strategic devices to reduce the overall cost of digitalization).

Strategic Intervention 2.1 Strengthen governance of digital services to ensure security, inclusion and interoperability of digital systems and local production of key digital service products

Outcome

- Enhanced regulation and enforcement of legislation on digitalization

Strategic Intervention 2.2 Review and automate integrated end-to-end government business and service delivery processes

Outcome

- 95% of government services online
- 95% transactions conducted through the shared public service delivery system
- 50% increased transactions on automated end-to-end government business processes

Strategic intervention 2.3 Promote access and utilization of Digital Services through regulation against counterfeit products

Outcome

- Reduction of counterfeit digital technology products

Strategic Intervention 2.4 Facilitate access to and utilization of e-Governance services including e-cities

Outcome

- 90% of citizens accessing e- services online
- 90% of all urban authorities (beginning with cities) supported to implement e-government systems

Strategic Intervention 2.5 Promote citizen awareness, engagement and participation

Outcome

- Enhanced citizen participation and inclusion

Strategic Intervention 2.6 Promote affordability of communication services through reduced turn-around time and cost.

Outcomes

- Reduced unit cost of low-entry smart phones and computers
- National Broadband coverage within a minimum speed of 8mbps per hour

Pillar 3: Cyber Security, Data Protection and Privacy

This pillar provides assurance that digital services are safe, secure, protected, and trusted and when in use. This pillar further seeks to ensure that the country builds capacity for cybersecurity management. This includes existence of the relevant policy and legal frameworks, development of national and sector CERTs to identify and address cybersecurity incidences as well as existence of the skilled human capital. The pillar shall seek to promote collaboration between key stakeholders at international and national level in both government and private sector.

Strategic Intervention 3.1 Building appropriate cyber security and data protection capabilities

Outcome

- 75% of entities with adequate and relevant capacity to counter any attacks and data piracy
- Enhanced entity investment in open source and cloud technology to ensure safety and privacy

Strategic Intervention 3.2 Enhanced security of digital online services

Outcomes

- Reduction in number of incidences of security breaches as outlined by the ITU- Global Cybersecurity Index
- 90% of public in compliance with National Information Security Framework

Strategic Intervention 3.3 Ensure protection of privacy of individual and personal data

Outcomes

- 70% reduction in unauthorized access to individual and personal data
- 90% of all entities in compliance with data protection and privacy framework

Pillars, Strategic Interventions and Expected Outcomes

Strategic intervention 3.4 Enhanced monitoring, enforcement and compliance to cybersecurity and data protection standards

Outcome

- Attain rank 60 by the National Cyber Security Index (NCSI) by 2030

Pillar 4: Digital Skills

There is a general low level of public awareness about the need for digital skills, use of various technologies, the workings of the ICT sector as a whole. There is also limited integration digitalization in the existing education curriculum – in part due to weak policy and legal framework. As a consequence, there is inadequate professional workforce in digital skilling. This pillar focuses on building a digitally enabled society that is agile and able to adapt to emerging technologies and trends. It also looks at promotion of digital literacy and ICT professional development for the current and future industry needs

Strategic Intervention 4.1 Develop and implement a national digital skills formation framework

Outcomes

- Improved spectrum of digital skills through enhanced curricula and pedagogy including for persons with special needs
- 50% digital literacy score (from a baseline of 20%)
- Attain a Rank of 5.5 by ICT Development Index (IDI value) – IDI Skills Sub-Index by 2030
- ICT directly created jobs

Pillar 5: Innovation and Entrepreneurship

Various innovations in Uganda have not been fully developed to use on large commercial scale. As a consequence, there is instead a high up-take of foreign ICT products. This pillar shall focus on commercialization of local innovations and establishment of local ICT businesses. Local innovations include ICT systems, products and content. It further looks at development of a conducive ecosystem that supports innovation, business development and development of indigenous ICT products and services to boost local content.

Pillars, Strategic Interventions and Expected Outcomes
Strategic Intervention 5.1: Development of an ecosystem that promotes development and commercialization of local ICT products and solutions including data and collaborative research **Outcomes** • Number of ICT innovation products developed and commercialized • Number of ICT innovations, Patents and copyrights registered by WIPO by the end of the year 2040 **Strategic Intervention 5.2 Establishment of a common platform/government test lab to promote development of centers of excellence for standardized e-solutions for entrepreneurial development** **Outcomes** • Development of Digital Centers of Excellence (DCOE) in the productive centers of the country • Enhance digital literacy in Uganda among the urban and rural poor • Promote ICT utilization in communities with a particular focus on practical user-friendly digital applications • Strengthened partnerships for knowledge sharing, and device penetration

3.6 Targets/Intended Milestones

Middle Income (UMI) economies that have achieved similar level of development status in ICT, a number of indicators and targets have been developed for Uganda. **Table 1** presents the baseline and desired targets. These targets are reference points to indicate the desired level of digital development and transformation.

Table 1 - Targets for the Digital Uganda Vision

No	Indicator	Baseline (2020)	Target (2025)	Target (2030)	Target (2040)
1	**Digital Infrastructure and Connectivity**				
1.1	Internet Penetration	30%	50%	60%	80%
1.2	Percentage of broadband coverage in the country	79%	90%	90%	90%
1.3	Percentage of Parishes with broadband connectivity	70%	90%	95%	100%
1.4	Percentage of districts headquarters connected to the NBI	44%	70%	90%	100%
1.5	Percentage of Connectivity for all government institutions (both central and local governments)		50%	75%	100%
1.6	Unit cost of 1Mbps/month of internet (USD)	237	70	50	20
2	**Digital Services**				
2.1	%age of beneficiaries satisfied with the QOS over the NBI	60%	95%	96%	99%

No	Indicator	Baseline (2020)	Target (2025)	Target (2030)	Target (2040)
2.2.	Number of transactions conducted through the shared public service delivery system	1,000,000	100,000,000	200,000,000	300,000,000
2.3	Percentage of government services online	25%	80%	85%	90%
2.4	Percentage of citizens accessing e- services online.	5%	20%	50%	90%
3	**Cyber Security and Data Privacy**				
3.1	National Cyber Security Index (NCSI)	50.65	52	55	60
4	**Digital Skills**				
4.1	ICT Development Index (IDI value) – IDI Skills Sub-Index	2.29	3.5	4.5	5.5
4.2	ICT directly created jobs	30,000	30,000	30,000	30,000
5	**Innovation and Entrepreneurship**				
5.1	Number ICT innovation products developed and commercialized	72	282	330	400
5.2	Number of ICT Innovations patents and copyrights registered at WIPO	0	20	50	100

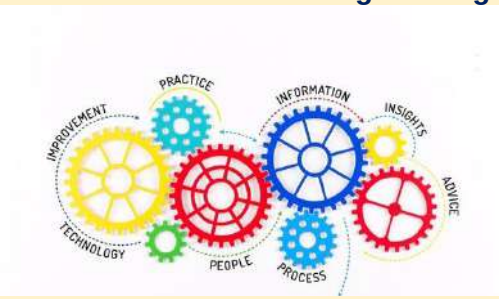
3.7 Cross-Cutting themes

These are the other Cross-cutting areas that support/enable the successful implementation of Digital initiatives. The Cross-cutting areas as shown in

Table 2 are derived from the Priorities of Vision 2040, National Development Plan and the Situational Analysis to support the delivery of the Aspirations and the Pillars as follows.

Table 2 - Cross-cutting Issues

Cross cutting Theme	Theme Descriptor
Collaborative and Dynamic ICT Governance 	**Good governance shall a cornerstone of Uganda's digital future.** Digitalization will require strengthen leadership at all levels for planning, setting up of required organizational structures, business processes, standards and compliance procedures and mechanisms as well as the require hard and software service provision. This will be part of a broader effort that ensures that institutions and stakeholders have the capabilities to digitalize and do so in a complementary rather than a nonreciprocal manner. Uganda shall adopt the ISO/EC 38500 that defines governance as 'the system by which current and future use of ICT is both directed and controlled for its intended use under the principles of: Responsibility; Strategy; Acquisition; Performance; Conformance and Responsiveness to needs of humanity. This vision shall ensure that digitalization for one that eases everyday life an evolving needs of **all the people in all places and processes**.
Policies Laws, Regulations, Procedures and Standards 	**Relate to ensuring good governance Government is in the process of reviewing, developing, enforcing and assessing compliance to appropriate laws to support the implementation of the digital transformation.** As these are being done, sensitization of the population on the existing and new laws, procedures/standards for their appreciation and adherence. While policies, laws and regulations and instruments regulate the sector, enforcement to ensure compliance will be for the protection of citizens for the broader success of a digital economy protected from cyber insecurity and piracy.
Monitoring, Evaluation and Reporting 	**Put in place an integrated mechanism for developing indicators, monitoring and evaluating and reporting on implementation of all National ICT Initiatives, programs and projects.** All public and private sector as well as non-state actors will be supported to put in place mechanisms and systems for routine collection and analysis of data on digital transformation in various fields. This support will be provided through programs and projects to enable timely and effective reporting on indicators (process, output, outcome and impact). NITA-U has already put in place measures that have begun to harmonize ICT indicator statistics and reporting across all institutions under a national statistical system. These measures are to benefit all projects implemented through Post Implementation Review (PIR) and Benefit Realization Capture (BRC) to keep all actors informed of progress being made. As part of the implementation of the National M&E Public Policy 2013, Government shall ensure that routine update is provided on trends Uganda makes on digitalization through sectors, programs and the Government's Annual Performance Assessment.

Cross cutting Theme	Theme Descriptor
Data, Information and Knowledge Management 	**Data, information and knowledge management is the life-stream of digitalization**. Cognizant of this importance, government shall strengthen mechanisms of authorization, processing, analyzing, sharing and managing electronic data, information, knowledge, and practices between organizations and stakeholders in the country. This will strengthen its ability to effectively combine scientific and operational data and use this to support a data-driven scientific innovation that inform policy and other actions. The ability to use data and knowledge-approaches will put Uganda on a competitive advantage in terms of focused decision making. Analytics shall also help make projections, serve as points of inference for various research undertakings done through on or off-the-shelf tools for rapid pace data and knowledge generation and utilization.
Business Process Management and Re-engineering 	**Government business processes and re-engineering to enable aligned, acceptable, effective and efficient e-Government Services. Government shall establish a comprehensive Business Process Re-Engineering mechanism to facilitate the uptake of ICTs.** Business process outsourcing shall enable the state and non-state actors to align their work with local needs and deploy technologies that optimize results by harnessing use of online systems. For instance, Ugandans shall work globally while here at home using online and other BPO systems, thus minimizing travel expenses and having better control of other aspects of life while working. BPO will afford Ugandans a value preposition that management of end-to-end processes on contract of foreign or domestic intermediaries that seek services from Uganda. This will include offer of services that do not require physical movement among countries.
Change Management and Skills formation 	**Mindset change towards Digitalization:** Change management ensures an effective organizational and cultural shifts towards efficiency (including the tenacity to abandon old inefficient ways for the choice of better modern innovations). Government shall establish and enforce a comprehensive change, adoption and skills transfer mechanism to promote and enforce the development and use of ICT across all spheres of life. A new digital experience will ensure: i. Use of modern applications and services that reduce cost of doing things ii. Enhanced productivity and time-saving as a result of use of technological as opposed to human effort – this saved effort is saved for other works; iii. Establishing a clear process for decision making – based on data and evidence iv. Broader adoption of artificial intelligence – and transforming industrial progression that adds value to Uganda produce thereby increasing its competitive advantage globally.

Cross cutting Theme	Theme Descriptor
Strategic Collaborations and Partnerships 	**Development and implementation of a mechanism for identifying and engaging key Stakeholders and partners at a National, Regional and International level for sharing resources, experience, knowledge, expertise and best practices.** Digitalization is an endeavor that requires the contribution of all actors. All stakeholders them become agents that supplement critical skills and share the risk and cost of major digital innovations. Citizens in this regard become both innovators, inventors, and users of digital services. To identify suitable partnerships for digitalization, the following criteria shall be adopted: • Is the proposal to digitalize **relevant to the needs** and context of Uganda? • Is the innovation being introduced **affordable, accessible and scalable**? • Are incentives to inspire a digital future **fair, considerate of local content**? • **Is it sustainable** and can its impact scaled up or replicated?
Communication and advocacy 	**Development and implementation of a communication and advocacy strategy.** In order to ensure that Uganda embraces a digital future, Government shall sustain communication mechanisms that influence and persuade wide use of modern ICTs improve various aspects of their lives. It is hoped that this influence will drive mindset change, enhance soft skills and acceptability of solutions that increase productivity of all persons, businesses and organizations. A communication and advocacy strategy has, hence, been included in this document to ensure effective delivery of information and solicitation of feedback from the citizenry on the advancement of the digital agenda in Uganda. Various actors (both government and non-state actors) shall inevitably engage in a discourse that may stir public sentiments towards various courses of action. However, this is a discussion needed to inspire innovations to do things better and use ICTs for solutions that make an immediate difference in the lives of all people.

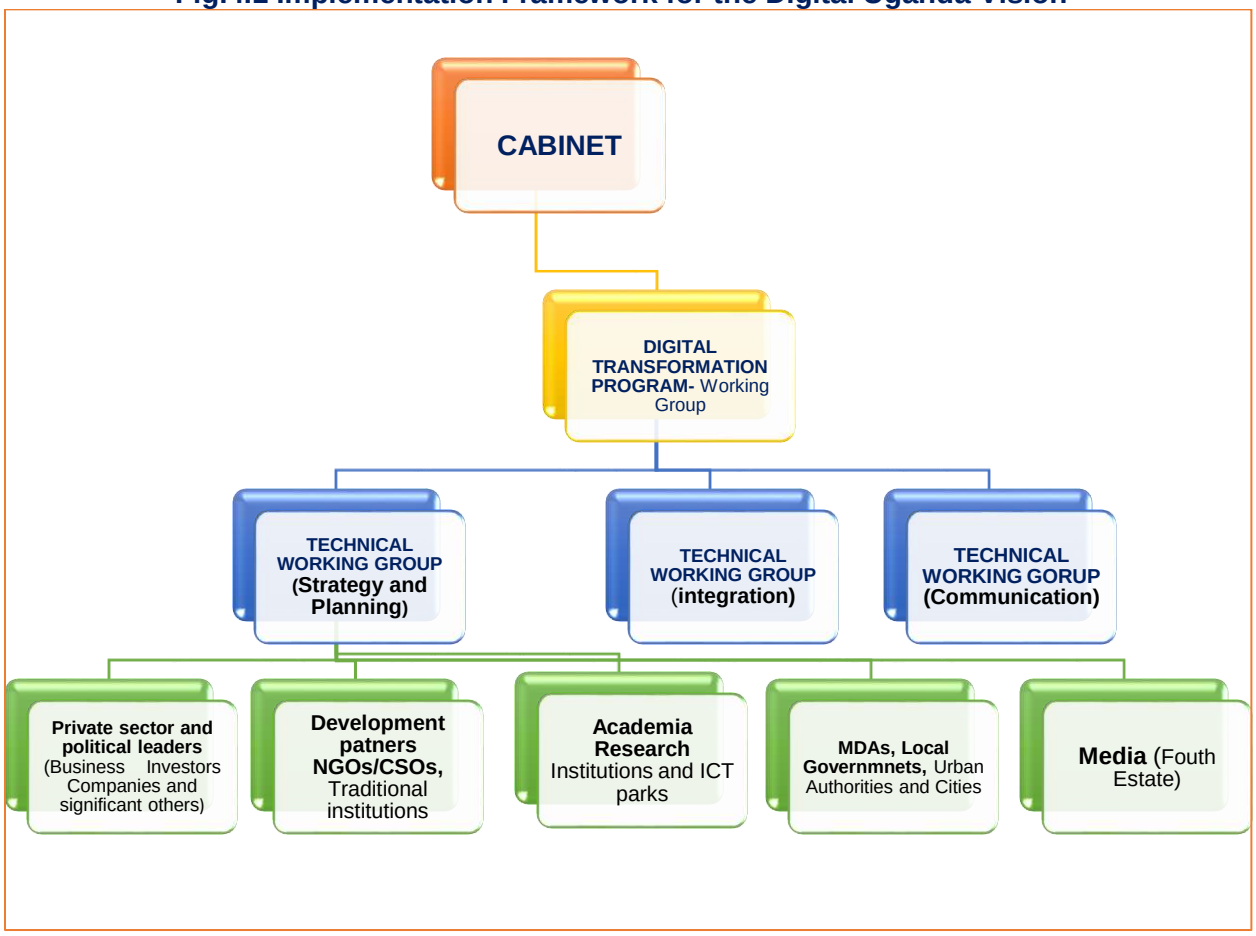
4. IMPLEMENTATION ARRANGEMENTS

The implementation and realization of the Vision for a Digital Uganda shall be the responsibility of every citizen of Uganda. The office of the President and Vice President, the Office of the Prime Minister, Parliament, Judiciary, MDAs, Local Governments, Development Partners, private sector, media, civil society and the media and will align their plans and strategies to achieve this vision.

4.1 Institutional Framework for Implementation

The implementation of this Vision will be undertaken through the existing central and local government systems and structures in line with the decentralization policy. This will require the review of policy, legal and institutional frameworks periodically to enhance efficiency and effectiveness. Below is the Digital Vision Implementation arrangement.

Fig.4.1 Implementation Framework for the Digital Uganda Vision



The successful achievement of the Vision will depend on an integrated approach during implementation supported by developing strategic synergies and partnerships. This implies that

roles, responsibilities and functions of all the stakeholders need to be clearly identified. As mentioned above, rationalization of the existing institutions will have to be carried out for effective implementation of the Vision.

Roles of Key Implementation Actors

The key to successful he implementation also lies in the rationalization of works and effective coordination amongst all agencies under MoICT&NG. The specific Strategies, Interventions, Programs/projects Plans; and Annual Plans/Budgets will be developed and implemented in a coherent and harmonized manner to realize this DUV. All operational and strategic actions of government, private sector, civil society, development partners and media shall be directed to the implementation of the vision. An appropriate policy, legal and institutional framework will be instituted to ensure all government and non-government actors implement this vision.

Table 4.1 Role of Different Implementing Actors

Implementing Entity	Role Description
Cabinet	Consider and guide on the imperatives for a digital Uganda and approve policies, laws and regulations (as the later are sent to H.E the President for Assent)
Digital Transformation Program Working Group (DTPWG)	This Working Group comprises of heads of MDAs under the Digital Transformation Program of NDP III. The DTPWG will take on the following roles: • Coordinating the preparation of the DUV Implementation; • Organizing and guiding quarter meetings and activities of management structures; • Preparation and dissemination of Action Plans (including costing and Monitoring Frameworks) and ensuring alignment with NDP III, Manifesto and Presidential Directives; • Preparation and dissemination of quarterly, semi-annual and annual DUV implementation reports; • Facilitating the annual DUV performance reviews; • Organizing DUV monitoring, inspection and other activities to enable collection of physical data to facilitate evidence-based reporting.
Technical Working Group – **Strategy and Planning**	The TWG on strategy and planning will be constituted by DT-PWG which is now in place. This WG shall: • Ensure broad stakeholder consultation in discussing key issues and harmonize Government and stakeholder positions • Examine and review of DUV related policies and plans, reviewing past performance, emerging policy issues and future spending pressures • Formulate DUV Implementation plans in line with the NDP digital transformation program and the manifesto of the ruling government and their alignment to the national budget

Implementing Entity	Role Description
	• Monitoring the implementation of the sub-component DUV areas of the DUV and raising issues for the DUV WGs consideration
Technical Working Group – **Integration**	The Integration TWG will be constituted by the Institutional cadre of the MoICT&NG. The Working Group shall: • Joint clearance of projects for inclusion in the Public Investment Plan, a requirement by the Development Committee • Coordinating inter-ministerial and agency budget allocations in a consultative way ensuring transparency and accountability • Promoting cooperation, learning and synergies within and outside the DUV
Technical Working Group – **Communication**	The Communication TWG will be constituted by all public relations officers and spokespersons of MDAs and the private sector umbrella organizations. The roles will include the following: • Reviewing and clear sub-component DUV areas of the Annual and semi-annual DUV performance reports before consideration by the DUV Secretariat • Developing position papers on policy and strategic issues in the thematic area for consideration by cabinet • Reviewing new project concept notes and make recommendations to DUV WG for clearance • Facilitating dialogue with partners (DPs, CSOs, etc.) around each program on emerging policy and technical issues aimed at increasing impact on DUV outcomes; • Ensuring timely sharing and dissemination of key information to PWGs and program institutions to facilitate implementation of DUV activities. • Engagements with five cohorts of stakeholders i. Private Sector ii. Development partners, NGOs and CSOs as well as Traditional Institutions iii. Schools, and Training Institutions and ICT Parks iv. Local Governments, Urban Authorities and Cities v. Media (Fourth Estate)

It is important to note that this implementation arrangement shall undergo reviews from time to time and changes effected as review recommendations would suggest. Each MDA will be required to inspire digitalization in their various capacities and some interventions proposed under the interim phase of this process include these tabled below:

Identified sector interventions under the Vision for a Digital Uganda

Sector	Vision 2040 Aspirations	ICT Interventions
Agriculture, Animal Industry & Fisheries.	Uganda aspires to transform the Agriculture sector from subsistence to commercial agriculture through mechanization and introduction of modern irrigation systems. Change the Labor force distribution in line with sectoral contribution (%) – Agriculture, Industry, Services (from 65.6,7.6,26.8 respect to 31,26,43 in 2040)	▪ Utilization of existing ICTs and emerging technologies along the value chain for improved productivity. ▪ ICT-enabled agriculture extension services and farm input management ▪ Digitize market access, acquisition and distribution of agricultural market information ▪ Digitalize access to financial services and products such as credit, savings, and insurance. ▪ Harness the different ICTs in agricultural research and dissemination of research outputs ▪ Optimized integrated real-time weather information, traceability and tracking system ▪ Use of technology in management of pests, vectors and diseases
Education and Sports	Uganda will build a modern world class education system that provides students with first rate education The provision of universal primary and secondary education will be considered as a human right and consolidated as basic education. Literacy Rate will increase from 73% in 2010 to 95% in 2040	▪ Utilization of ICTs in learning, teaching, research, education management and assessment of education outcomes ▪ Develop ICT framework and standards ▪ Increase availability of ICT infrastructure and devices ▪ Develop digital learning materials and content management and sharing mechanisms all levels ▪ Capacity building and skilling of learners, teachers and administrators to adapt to ICT enabled education ▪ Improved administration of education institutions through the use of ICTs
Energy and Mineral Development	Uganda will develop and generate modern energy to drive the industry and services sectors. % population with access to electricity From 11 to 80 in 2040	▪ Utilization of ICTs in the planning, design, construction, operation, monitoring, optimization and information management ▪ Integration of ICTs in monitoring and optimizing the generation, transmission and distribution networks. ▪ Integrated infrastructure design and deployment to premises to leverage infrastructure across sectors and increase efficiency gains to users such as fiber, gas and water to the home/ premise ▪ Utilization of ICTs efficient and effective cascade management of dams ▪ Utilization of ICT in exploration and geological mapping of resources ▪ Foster adoption of smart consumer devices and smart living

Sector	Vision 2040 Aspirations	ICT Interventions
Trade, Industry and Cooperatives	Industry will be a major driver in employment creation and GDP growth over the Vision period There will be a change in the Sectoral composition of GDP (%) - Agriculture, Industry, Services (10.4,31.4,58.2 resp in 2040 from 22.4,26.4,51.2 in 2010)	▪ Utilization of ICTs to support trade and manufacturing ▪ Establish a single window system for trade & commerce; Enhanced Smart Card System; registration, operations ▪ Use ICTs to develop trade, product and market information systems and advisory services ▪ Utilization of ICTs to create new markets, improve market access and harness the preferential trade areas and concessional market agreements for goods and services ▪ Use of ICTs along the value chain to ensure products meet the relevant local, import and export standards ▪ ICT integration in industrialization (ICT manufacturing and assembly) ▪ Establish trade rules and consumer protection for e-commerce ▪ Use ICTs to facilitate engagement and development of MSMEs and cooperatives
Tourism, Wildlife and Antiquities	Tourism will become the mainstay of the economy contributing highest in foreign exchange earnings, tax and non-tax revenue, employment and to GDP Uganda will be one of the top five tourist destination in Africa and among the top 10 long haul tourist destination in the world.	▪ Promote and protect Uganda's tourism and wildlife through the use of ICTs ▪ Produce and disseminate digital tourism promotion materials and platforms including digital marketing content and use of digital billboards, virtual tours, local trip advisor; ▪ Leverage ICT to improve the tourism experience ▪ Use ICT to facilitate wildlife protection and management ▪ Develop an integrated Tourism information management system that provides reliable up-to-date tourism statistics (hotels, operators, guides, tourist sites) and harness big-data to improve design and management of tourism interventions
Accountability	There will be an increase in Per capita income from USD506 in 2010 to 9500 in 2040	▪ Utilization of ICTs to improve accountability business processes (revenue collection, planning, budgeting, monitoring, reporting and accountability) ▪ Harness new technologies such as Big data analysis to guide fiscal policy, budget allocations and spending outcomes; ▪ Online monitoring and reporting of Government programs ▪ Integration of accountability systems
Health	Government in partnership with the private sector and other development partners will also focus on building highly specialized health care services.	▪ Promote the utilization of ICTs in planning, monitoring, administration and delivery of health services ▪ Integrate and streamline a national Electronic Medical Record (EMR) and develop National Health Care Management System.

Sector	Vision 2040 Aspirations	ICT Interventions
		▪ Distribution and management of medical supplies digitized and monitored real time; ▪ Implement e-delivery of health services to improve the effectiveness and inclusiveness of health services Telemedicine, mobile health solutions, emergency services and wearable medical devices. ▪ Online collaboration, learning and continuous training solutions for health sector professionals. ▪ Use of ICT to facilitate health research and innovation and epidemiological monitoring
Information and Communications Technology	Robust ultra-high speed, pervasive, intelligent and trusted high speed ICT infrastructure will be built all over the country in line with the changing technologies As many as feasible public services will be provided online automating work functions and reducing paperwork Increase the amount of locally produced ICT goods and services and exports by 2040	▪ Facilitate the use of ICT by citizenry ▪ Ensure harmonized and ubiquitous infrastructure deployment ▪ Promote development, adoption and utilization of e-services ▪ Enable cross-sectoral integration of ICT systems ▪ Universal digital literacy ▪ Ensure data protection and cyber-security Strengthen Innovation, Research and Entrepreneurship ▪ Leverage ICTs to facilitate government communication, citizen participation, and community mobilization. ▪ Leverage the use of One Stop Centers to facilitate e-service delivery including Postal Outlets, Libraries and other public Access Centers ▪ Strengthen the Policy Legal and regulatory environment to drive the development of ICTs.
Justice, Law And Order	Uganda will consolidate a secure and stable society operating on the principles of justice, equality and the rule of law. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	▪ Utilization of ICT in provision of security, justice, law and order services ▪ Promote equitable access to justice and legal services by providing services electronically ▪ Use ICT in case management integrating all the key players in the JLOS sector ▪ Enhance security and safety across the country through the use of technology ▪ Digitization of all JLOS records and proceedings ▪ Promotion of e-democracy ▪ Digitalization and integration of Legal Persons.

Sector	Vision 2040 Aspirations	ICT Interventions
Lands, Housing and Urban Development	Undertake policy reforms to ensure that land facilities, land use regulation and land development enhance economic productivity	▪ Digitalize the planning, management and service delivery in the sectors ▪ Leverage technology for smart urban development ▪ Enhance the land demarcation, registration and administration and management through the use of ICT
Legislature	Parliament's legislative oversight capacity will be strengthened	▪ Digitalize all legislative and parliamentary processes and services ▪ Use ICT to implement an e-Parliament ▪ Facilitate electronic connectivity, cooperation and interaction between the legislature and the citizens ▪ Digitize legislative documents/ information and provide it online. ▪ Promote Research, monitoring and online tracking of parliament recommendations
Public Administration and Public Sector Management	Over the Vision period, government shall adopt the business approach for public service delivery where efficiency, effectiveness and economy will be the main basis of decision making. Government will introduce various innovations that entail not only changes in structure and processes but also fundamental attitudinal and behavioral changes that are precepts of socio economic transformation. Focus will be on reducing the cost of public administration E-Government will be implemented to ensure all workflow processes are computerized and improve responsiveness and reduce corruption, computerization of information systems to increase administrative efficiency; Public access to information and data will encouraged and special measures to overcome barriers to access instituted	▪ Utilize technology to improve public service delivery in terms of efficiency, cost effectiveness, transparency and productivity. ▪ Digitalize Human Capital Management in the public sector ▪ Promote the use of ICTS for continuous learning and development ▪ Digitization of records and electronic archiving ▪ Promote the use of ICTs to facilitate data and information sharing across Government ▪ Facilitate the automation of common management functions (e.g. procurement, HR, finance, etc.) for government institutions ▪ Enhance and Integrate the National Emergency Response system ▪ Ensure business processes documentation, optimization and re-engineering to facilitate the automation of government services ▪ Strengthen the coordination and monitoring of government interventions using ICTs ▪ Foster the use of ICTs in national aid distribution as well as disaster relief and emergency services ▪ leverage ICTs to enhance citizen participation and feedback in government programs

Sector	Vision 2040 Aspirations	ICT Interventions
Gender, Labor and Social Development	Efforts will be made to ensure gender responsive policies, programs and actions. Deliberate effort will be made to enable women to equally participate in education and skills development, business, agriculture, industry and governance	▪ Leverage ICTs to promote civic education and ensure indiscriminative access to social and economic opportunities and benefits ▪ Digitalize the labor market information; as well as the data collection and monitoring processes. ▪ Improve the management of information on persons in the different special interest groups ▪ Leverage ICTs to facilitate advocacy for the rights of members of the special interest groups ▪ Promote the development innovative ICT solutions to address the needs of Special Interest Groups
Water and Environment	Over the Vision 2040 period efforts will be undertaken to attain a green and clean environment with no water and air pollution while conserving the flora and fauna and restoring and adding value to the ecosystems. Government will develop appropriate adaptation and mitigation strategies on Climate Change to ensure that Uganda is sufficiently cushioned from any adverse impact brought by climate change.	▪ Promote the use of ICTs for sustainable environment management including climate change mitigation and inclusive access to safe water ▪ Protect and monitor the forests and water resources Utilize ICTs in coordination, planning and monitoring of water environment. ▪ Digitize environmental monitoring and carbon emission reductions ▪ Promote the use of ICTs to monitor and mitigate climate change ▪ Leverage ICTs to enhance disaster preparedness and management (Early warning systems, etc.) ▪ Utilize ICTs to promote sustainable waste management. ▪ Establish mechanisms for sustainable management of E-waste ▪ Enhance the collection, analysis and dissemination of meteorological information using ICTs
Works and Transport	Uganda will have an integrated transport infrastructure network optimizing the use of rail, road, water and air transport modes	▪ Efficiently manage and operate transport infrastructure through use of ICTs ▪ Utilize ICTs in infrastructure and transport systems planning, management and monitoring (e.g. rail-system, water, road-transport, air-transport) ▪ Leverage ICTs to promote coordinated and integrated infrastructure design and works to address the needs of different sectors ▪ Digitize the data/information in the transport sector ▪ Enhance transport system accessibility through online road mapping

5. FINANCING MECHANISMS

Government will to mobilize resources to meet the requisite financing needed for the implementation of this Vision. Aware of the enormous resource requirements required for implementation, Government will pursue several resources mobilization measures to complement the national budget resource allocation to enable various stakeholders (through technical working groups) for the implementing various aspects of the vision. These measures will include mobilization of technical and financial assistance from development partners and international and domestic financing agencies and institutions.

The following will be the main policy financing measures

i. Appropriations from the national budget to various implementing MDAs and LGs
ii. Grants and loans (including concessional loans) from development partners
iii. Provision of pre-financing through Uganda Development Bank;
iv. Leveraging private equity funds;
v. Domestic revenue mobilization.

Government will to establish additional funding mechanisms to spur the digitalization agenda. These mechanisms shall include investment partnerships with Multilateral Development Banks (MDBs), private equity from Development Finance Institutions (DFIs), grants and long-term investment support for identified special-purpose impact investors, venture capital, bond issuances through Uganda Security Exchange (USE), dividend and interest re-investments and subsidiary divestitures and partnerships, and with private investors through public private partnerships (PPPs). Below the budget requirement for the first phase of the vision's implementation.

Pillars and Strategic interventions	**Outcomes**	**Total (000)**
PILLAR 1 DIGITAL INFRASTRUCTURE AND CONNNECTIVITY		
Implement a ICT enabling Policy Framework	% of parishes with broadband connectivity	2,119,000,000
	% of district headquarters connected to the national broadband infrastructure	36,750,000
Coordinate (cross and within countries, within government and private sector) planning, acquisition and deployment of sharing of data through integrated ICT infrastructure and systems	% of all MDAs and districts sharing data	10,000,000
	% connectivity for all MDAs and LGs	25,000,000
	% of MDAs, LGs reached with infrastructure to protect them from cyber attacks	21,000,000
	Increased regional, international coordination on cyber security management	21,000,000
Conduct routine cost-benefit analyses on the suitability of the installation of new edge infrastructure	% of systems on cloud technology	16,000,000
	Increased investment in modern digital skilling infrastructure	2,400,000
Pillar 1 Total		**2,251,150,000**

Pillars and Strategic interventions	Outcomes	Total (000)
PILLAR 2: DIGITAL SERVICES		
Strengthen governance of digital services to ensure security, inclusion and interoperability	Enhanced regulation and enforcement of legislation on digitalization	2,000,000
Review and automate integrated end-to-end government business and service delivery processes	% of transactions conducted through the shared public service delivery system	10,050,000
	% increased transactions on automated end-to-end government business processes	3,000,000
Promote access and utilization of Digital Services through regulation against counterfeits	Reduction of counterfeit digital products	1,200,000
Facilitate access to and utilization of e-Governance services including e-cities	% of citizens accessing e-services online	5,000,000
	% of all urban authorities beginning with cities supported to implement e-government systems	12,500,000
Promote citizens awareness engagement and participation	Enhanced citizens participation and inclusion	2,500,000
Promote affordability of communication services through reduced turn-around time and cost	Unit cost of a low entry smart phone (UGX)	500,000
	Reduced Cost of a computer	1,500,000,000
	National Broadband coverage with a minimum speed of 8 mbps	10,000,000
Pillar 2 Total		**1,546,750,000**
PILLAR 3 CYBERSECURITY, DATA PROTECTION AND PRIVACY		
Building appropriate cyber security and data protection capabilities	% of entities with adequate and relevant capacity to counter any attacks and data piracy	4,000,000
	Enhanced entity investment in open-source and cloud technology to ensure safety and privacy	3,000,000
Enhanced security of digital on-line services	% Reduction in the number of incidences of security breached as outlined by the ITU-Global cyber security index	5,000,000
Ensure protection of privacy of individual and personal data	% reduction in unauthorized access of individual and personal data	6,000,000
Enhanced monitoring, enforcement and compliance to cybersecurity and data protection standards	No. of all entities in compliance with data protection and privacy framework	400,000
Pillar 3 Total		**18,400,000**
PILLAR 4 DIGITAL SKILLS		
Develop and implement a national digital skills formation framework	Improved spectrum of digital skills through enhanced curricula and pedagogy including for persons with special needs	1,500,000,000
	Infrastructure for skilling for digital skilling across the government	500,000,000
	Increased ICT directly created jobs	250,000,000
Pillar 4 Total		**2,250,000,000**
PILLAR 5 INNOVATION AND ENTREPRENUERSHIP		
Development of an ecosystem that promotes development and	Number of ICT innovation products developed and commercialized	500,000

Pillars and Strategic interventions	**Outcomes**	**Total (000)**
commercialization of local ICT products and solutions	Number of ICT innovations, Patents and copyrights registered by WIPO by the end of the year 2040	600,000
Establishment of a common platform/government test lab to promote development of centers of excellence for standardized e-solutions for entrepreneurial development	Development of digital center of excellence in the productive centers of the country	1,600,000
	Enhanced digital literacy in Uganda among the urban and rural poor (**measured by the digital inclusiveness score**)	9,000,000
	Promoted ICT utilization in communities with a particular focus on practical user-friendly digital applications	5,700,000
	Strengthened partnerships for knowledge sharing and device penetration	550,000
Pillar 5 Total		**17,950,000**
GRAND TOTAL		6,084,250,000

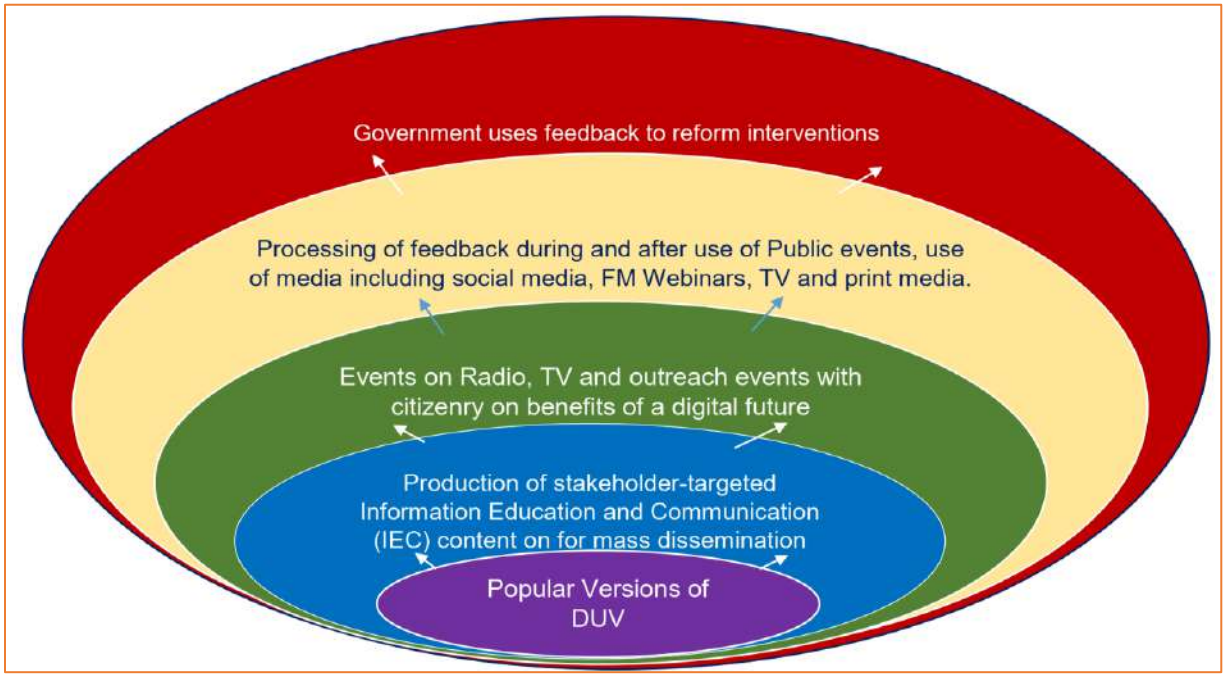
The total cost imperative to digitalize Uganda by 2040 will require a first phase financing up to 2030 of UGX 6.08 trillion by the end of NDP IV period

6. COMMUNICATION MECHANISMS

In line with the Government Communication Strategy (September 2011), and for a purpose to facilitate ownership and implementation of this Vision, mechanisms will be instituted to ensure that different key stakeholders understand and support the Vision. This document will be translated, simplified and continuously disseminated in various fora. The MoICT&NG shall lead and galvanize concerted efforts will be made to ensure that this Vision is understood and supported by stakeholders at all levels, so that every stakeholder appreciates their role in its implementation.

A popular abridged version, will be published and widely disseminated to stakeholders. Government shall put in place various appropriate ways to communicate this policy through sustained dialogue and events including: talk shows, use of mass media (with an emphasis on local FM radios and TV stations), advertorials and pin-up posters as well as pull-outs from the national newspapers, bulletins and journals, as well as social media platforms. Below is an illustration of the communication arrangements to ensure all citizen understand, embrace and be part of this vision

Fig. 6.1 Digital Uganda Vision Communication Mechanism



Source: MoICT&NG setup of the communication rainbow

7. RISK MANAGEMENT

Risks will arise in realization of any vision but so will be the tenacity of Government and stakeholders to mitigate them. It is anticipated that this the implementation of this vision shall face strategic, financial, operational, organizations, and technology risks. This section highlights these risks and proposes corresponding mitigation measures:

7.1 Operational Risk

There are a number of operations challenges that be-face both the public and private sector. These include limited awareness of the roles and contribution of digitalization to the everyday life of people, organizations, businesses and government. As a consequence, **there has not been sufficient resource investment in this sector**. Various MDAs remain under-resourced with the current ICT investment in most of government being below 32%. There are gaps in up-take of IT systems making automated work difficult and sustaining bureaucratic procedures and delayed implementation of key functions. There is a multiplicity of un-matching case reporting formats some that lacking key flexibilities and agility to align to diverse stakeholder needs.

In the light of the following risks, the following mitigation mechanisms are proposed:

i. Wider staff engagements at dissemination and awareness events to show-case the critical role of digitalization and its capacity to integrate Uganda into the global sphere of influence under various sectors.
ii. Enhancing provision of systems, computers as well as human resources capacity to roll out of key aspects of this vision via various networks to various regional offices on which they ought to operate
iii. Established widely agreed-to and agile reporting template to serve reporting needs of various stakeholders
iv. Fully implement the human resource structure to ensure stability and predictability of human resource performance to drive the digitalization agenda.

7.2 Strategic Risk

There are various policies, laws and regulations law that are needed to be reviewed to create an enabling environment for the attainment of the DUV. Within a weak legal and institutional framework, there will be challenges in implementing strategic interventions paramount to the attainment of this vision.

In the light of the following risks, the following mitigation mechanisms are proposed:

i. Ensure finalization and passage of strategic policies and Acts of Parliament to clearly stipulate the roles of various actors in the digitalization agenda
ii. Develop and implement a robust M&E system to support reporting, oversight and reform
iii. Strengthening collaborative mechanism between executing agencies
iv. Reporting frameworks shall be tightened the link between regional offices and head office

7.3 Financial Risk

In light of limited financial resources, prioritization shall be required – by embarking on investments imperatives to build a foundation for a digital future, Currently the Digital Transformation Program faces limited resource allocation from the national budget to fully execute the laid out agenda under NDP III. There are late releases to MDAs, forcing their return to the consolidated fund unspent. There is limited clarity on how resources are shared across various MDAs.

In the light of the following risks, the following mitigation mechanisms are proposed:

i. The DTPWG shall develop and implement a resources mobilization strategy so that it is able to facilitate some of its activities with limited reliance of government allocation alone;
ii. MDAs shall strengthen their own ICT internal capacities to ensure budget controls, timely requisitions, expedited procurement processes, and planning so as to increase the current levels of fiscal prudency
iii. As a DUV process there will be clarity on financing arrangements to increase the integrity of the planning, budgeting and financing and accountability.
iv. Efforts will be sustained to ensure timely releases of funds from the MoFPED.

7.4 Organizational Risk

Advancement in use of modern technologies continues to be adversely affected by a sustained organizational resistance to change within government and non-state actors. This has made it difficult to enforce reforms especially in use of IT systems. There is high level of staff attrition attributed to their short tenure of contracts – for better paying jobs outside Government – yet it incurs substantial time and resources to train them. In addition, due to limitations in resources, there is limited attention to critical HR aspects like induction, training and promotion of staff.

In the light of the following risks, the following mitigation mechanisms are proposed:

i. Government will provide attractive contracts for ICT staff within MDAs
ii. More resources will be earmarked for staff induction, training and promotion;
iii. A change management aspect shall be introduced under HR to sustain orientation especially in use of IT systems

7.5 Technological Risks

As has been alluded to, there remains a challenge of slow uptake of ICT. The level of infrastructure stock is limited and the use of current stock is passive. Most MISs have not yet been fully operationalized and other systems in place are not used as required. In the light of the following risks, the following mitigation mechanisms are proposed:

i. Government shall ensure fully functionality of the all ICT systems and support staff in its use. This will include recruitment of more IT staff on permanent terms, and procurement of scanners, computers and other supporting IT equipment
ii. There will be efforts to link all systems and their interface with other national IT systems
iii. Government will sustain plans to set up an e-Government centers-of-excelled per region
iv. Ensure that there is annual subscription to online libraries for offices to access new documented reference cases as well as protection of domains.

7.6 Risk Mitigation Strategy Matrix

Assessing risks is an important management engagement to help design means ad approaches to mitigate them upon occurrence. It is important to note that this strategy prioritized the most eminent risks due to resource constraints. A summary of the risk assessed and mitigation mechanism is shown in the table below.

Table 7.1 Risks Assessed and Mitigation measures

Nature of Risk	Anticipated Risk	Mitigation Measures
Operational Risk	• There has not been sufficient resource investment in this sector. • Various MDAs remain under-resourced with the current ICT investment in most of government being below 32%. • There are gaps in up-take of IT systems making automated work difficult and sustaining bureaucratic procedures and delayed implementation of key functions. • There is a multiplicity of un-matching case reporting formats some that lacking key flexibilities and agility to align to diverse stakeholder needs	i. Wider staff engagements at dissemination and awareness events to show-case the critical role of digitalization and its capacity to integrate Uganda into the global sphere of influence under various sectors. ii. Enhancing provision of systems, computers as well as human resources capacity to roll out of key aspects of this vision via various networks to various regional offices on which they ought to operate iii. Established widely agreed-to and agile reporting template to serve reporting needs of various stakeholders iv. Fully implement the human resource structure to ensure stability and predictability of human resource performance to drive the digitalization agenda.
Strategic Risk	• There are various policies, laws and regulations law that are needed to be reviewed to create an enabling environment for the attainment of the DUV. Within a weak legal and institutional framework, there will be challenges in implementing strategic interventions paramount to the attainment of this vision	i. Ensure finalization and passage of strategic policies and Acts of Parliament to clearly stipulate the roles of various actors in the digitalization agenda ii. Develop and implement a robust M&E system to support reporting, oversight and reform iii. Strengthening collaborative mechanism between all executing agencies iv. Reporting frameworks shall be tightened the link between regional offices and head office
Financial Risk	• Currently the Digital Transformation Program faces limited resource allocation from the national budget to fully execute the laid out agenda under NDP III. • There are late releases to MDAs, forcing their return to the consolidated fund unspent. • There is limited clarity on how resources are shared across various MDAs.	i. The DTPWG shall develop and implement a resources mobilization strategy so that it is able to facilitate some of its activities with limited reliance of government allocation alone; ii. MDAs shall strengthen their own ICT internal capacities to ensure budget controls, timely requisitions, expedited procurement processes, and planning so as to increase the current levels of fiscal prudency iii. As a DUV process there will be clarity on financing arrangements to increase the integrity of the planning, budgeting and financing and accountability.

Nature of Risk	Anticipated Risk	Mitigation Measures
		iv. Efforts will be sustained to ensure timely releases of funds from the MoFPED.
Organizational Risk	• A sustained organizational resistance to change. • Structure of ICT carder is filled at only 32%. • High level of staff attrition attributed to their short tenure of contracts and preference to work outside of Government	i. Government will provide attractive contracts for ICT staff within MDAs ii. More resources will be earmarked for staff induction, training and promotion; iii. A change management aspect shall be introduced under HR to sustain orientation especially in use of IT systems
Technological Risk	• Slow uptake of ICT systems within MDAs and among non-state actors. • The level of infrastructure stock is limited and the use of current stock is passive. • MIS has not yet been fully operationalized and other systems in place are not used as required. • Logistical challenges in terms of tools such as computers /laptops and low internet connectivity	i. Government shall ensure fully functionality of the all ICT systems and support staff in its use. This will include recruitment of more IT staff on permanent terms, and procurement of scanners, computers and other supporting IT equipment ii. There will be efforts to link all systems and their interface with other national IT systems iii. Government will sustain plans to set up an e-Government centers-of-excelled per region iv. Ensure that there is annual subscription to online libraries for offices to access new documented reference cases as well as protection of domains.

8. MONITORING AND EVALUATION FRAMEWORK

In line with the National Public Sector M&E policy (2013) government will ensure comprehensive reviews are undertaken for performance reviews, continuous learning and reformation of the digitalization agenda.

8.1 Monitoring and Evaluation Arrangements

The overall purpose of the Monitoring and Evaluation (M&E) framework for the digitalization agenda is to ensure performance assessment of government interventions and ascertain the levels efficiency, effectiveness relevancy, sustainability and impact of this vision. The framework will assist in building consensus on high-level indicators and targets, and standardize the reporting mechanisms and processes. The M&E framework is designed to operationalize the national Policy on public sector M&E in the Digital Transformation agenda. It is aligned to the reporting and accountability frameworks of Government, such as the program-based performance monitoring by MoFPED the Government Annual Performance Report (GAPR) by Office of the Prime Minister, and the National Development Report of the NPA.

8.2 Annual Performance Reviews

All entities shall be required to follow current reporting guidelines for quarterly reporting and will review work-plans and budgets for activities' implementation as presented in the results framework matrix. Highlights of quarterly reports will be present to the Top Policy Management of MDAs showing progress of implementation on various projects. This will be for their attention, discussion, decision and remedial action as relevant or required. An annual report shall be developed as a progress report on the implementation of this Vision called the ***Uganda's Digitalization Annual Status of Report*** and will feed into other reporting by GAPR and NDR as alluded to under 8.1 above.

8.3 Reviews and Evaluation of the Plan

The Government of Uganda adopted the National Policy on Public Sector Monitoring and Evaluation, which defines the framework and M&E standards for public sector agencies. Government will:

i. **Conduct a baseline survey** in the first year of this Vision to take stock of the conditions, situation and basis for support of various interventions as planned. This baseline survey will make reference to already existing data on digitalization performance

ii. **Undertake a Mid-Term Evaluation** that shall take stock of performance of the plan half way-through implementation (during FY 2028/29) and report on lessons learned, areas for improvement and recommendations for recourse, reform or remedial action for 2030-2040.

iii. **Commission an External Final Evaluation** which will be held during the last year of implementation (FY 2039/40) to evaluate the performance of the plan and utilize findings to design a successor plan 2040-2050 that would be aligned to EAC Digitalization Vision 2050.

ANNEXURES

Annex 1: Results Framework Matrix

Pillar	Strategic Intervention	Outcome Indicator	Baseline Value	Target by 2030	Means of Verification	Risks and Assumptions	Responsibility Centre
Pillar 1: Digital Infrastructure and connectivity	1.1 implement a ICT enabling Policy Framework	% of internet penetration	25%	50%	UNHS report National Service Delivery Report	Citizens recognize the role of internet in their day-to-day life Cost of data reduces over the years	**Ministry of ICT&NG** NITA-U Uganda Communications Commission
		% of parishes with broadband connectivity	44%	100%	NITA-U annual reporting LG reports	Government finances systems to link parish data to the national data grid	**NITA-U** Ministry of ICT&NG Uganda Communications Commission Ministry of Local Government All parishes
		Medium ranking on the Network Readiness Index	114/134	50/134	MoICT&NG reporting	Focus and trends are studied for action on the four pillars of the index: technology, people, governance and impact	Ministry of ICT&NG All MDAs Private sector NGOs and CSOs and other non-state actors
		High Global ICT Regulatory Index	56/193	20/193	MoICT&NG reporting	Reviews are made and concluded on the policy and legislative framework	Ministry of ICT&NG All MDAs
		% of district headquarters connected to the national broadband infrastructure	74%	100%	NITA-U annual reporting LG reports	Government finances systems to link parish data to the national data grid	**NITA-U** Ministry of ICT&NG Uganda Communications Commission Ministry of Local Government

Pillar	Strategic Intervention	Outcome Indicator	Baseline Value	Target by 2030	Means of Verification	Risks and Assumptions	Responsibility Centre
							All parishes
	1.2 Coordinate (cross and within countries, within government and private sector) planning, acquisition and deployment of sharing of data through integrated ICT infrastructure and systems	% of all MDAs and districts sharing data	Not Available	90%	NITA-U annual reporting UCC reporting	Transparency in disclosure of information as stipulated in the Access to Information Act is enforced by the highest level of government for data sharing	**Ministry of ICT&NG** **Uganda** NITA-U Uganda Communications Commission Ministry of Local Government All parishes
		% connectivity for all MDAs and LGs	20%	100%	NITA-U Annual Reporting GAPR NDR	Gradually the NBI is expanded to all LGs	**NITA-U** MoICT&NG MDAs LGs
		% of MDAs, LGs reached with infrastructure to protect them from cyber attacks	32%	70%	NITA-U Annual Reporting	Government provides resources to lay protection infrastructure	**NITA-U** Financial Intelligence Authority
		Increased regional, international coordination on cyber security management	Not Available	70%	Reports of Ministry of Foreign Affairs Ministry of Internal Affairs	Close cooperation between Uganda and countries in the region and beyond	**Ministry of Foreign Affairs** Ministry of Internal Affairs Financial Intelligence Authority ISO and ESO
	1.3 Conduct routine cost-benefit analyses on the suitability of the installation of new edge infrastructure	% of beneficiaries satisfied with the quality of services over the NBI	60%	99%	NITA-U reports Client charter reports of client satisfaction surveys	Mass awareness creation on the NBI	**NITA-U** MoICT&NG Uganda Communications Commission
		% of systems on cloud technology	Not available	90%	Reports from sector	Deliberate investment and	**NITA-U** MoICT&NG

Pillar	Strategic Intervention	Outcome Indicator	Baseline Value	Target by 2030	Means of Verification	Risks and Assumptions	Responsibility Centre
					MDAs and LGs	enforcement to ensure broader use of cloud technology use	
		Unit cost of 1mbs/hr ($)	$7.9	$0.67	NITA-U reporting UCC reporting	Cost of data reduces over the years (as a deliberate government intervention)	**NITA-U** MoICT&NG Uganda Communications Commission
		Increased investment in modern digital skilling infrastructure	Not applicable	3% of GDP	Ministry of Science and Technology and MoICT&NG reporting	Government invests in ensuring that all vocational training has infrastructural installations to support hands-on digital service training	**Ministry of Education and Sports** Ministry of Science and Technology Ministry of Finance Planning and Economic Development
Pillar 2: Digital Services	2.1 Strengthen governance of digital services to ensure security, inclusion and interoperability of digital systems and local production of key digital service products	Enhanced regulation and enforcement of legislation on digitalization	4	All legislation	Policy, legal, regulatory reviews conducted by MoICT&NG	Review processes for key policies, laws and regulations are expedited	**Cabinet Secretariat** MoICT&NG MDAs
	2.2 Review and automate integrated end-to-end government business and service delivery processes	% of government services online	20%	95%	NITA-U Reports National Service Delivery Reports	Government deliberately invests in critical end-to-end government business and service delivery processes	**NITA-U** MoICT&NG MDAs LGs
		% of transactions conducted through the shared public service delivery system	60%	95%	NITA-U Reports National Service Delivery Reports	Government deliberately invests in critical end-to-end government business and service delivery processes	**Ministry of Public Service** OPM NITA-U MoICT&NG MDAs

Pillar	Strategic Intervention	Outcome Indicator	Baseline Value	Target by 2030	Means of Verification	Risks and Assumptions	Responsibility Centre
							LGs
		% increased transactions on automated end-to-end government business processes	25%	50%	NITA-U Reports National Service Delivery Reports	Government deliberately invests in critical end-to-end government business and service delivery processes	**Ministry of Public Service** OPM NITA-U MoICT&NG MDAs LGs
	2.3 Promote access and utilization of Digital Services through regulation against counterfeits	Reduction of counterfeit digital products	Not available	0	NITA-U intelligence reports	Efforts to heighten vigilance among the public as well as awareness and sensitization campaigns are resourced	**ESO, ISO and other intelligence services** **MoICT&NG** Ministry of Science Technology and Innovation MDAs, LGs General Public
	2.4 Facilitate access to and utilization of e-Governance services including e-cities	% of citizens accessing e-services online	5%	90%	NITA-U reporting	Support is provided for massive public awareness and sensitization campaigns	**NITA-U** Ministry of Public Service OPM MoICT&NG MDAs and LGs
		% of all urban authorities beginning with cities supported to implement e-government systems	Not available	95%	Report on e-cities by MoICT&NG NITA-U reporting	e-Government systems resources including e-Cities project in all cities	**All Urban Authorities** NITA-U Ministry of Local Government MoICT&NG
	2.5 Promote citizens awareness engagement and participation	Enhanced citizens participation and inclusion	Not available	95%	Report on e-cities by MoICT&NG NITA-U reporting	Support is provided for massive public ICT awareness and sensitization campaigns	**NITA-U** Ministry of Public Service OPM MoICT&NG MDAs and LGs

Pillar	Strategic Intervention	Outcome Indicator	Baseline Value	Target by 2030	Means of Verification	Risks and Assumptions	Responsibility Centre
	2.6 Promote affordability of communication services through reduced turn-around time and cost	Unit cost of a low entry smart phone (UGX)	100,000	50,000	UNBS reporting UCC reports	Market systems approach drives down prices based on enhanced scale and rural poor targeting	Private sector operatives in telecoms UNBS UCC
		Cost of a computer	1,500,000	750,000	Private sector sales data	Market systems approach drives down prices based on enhanced scale and rural poor targeting	Private sector operatives in telecoms UNBS UCC
		National Broadband coverage with a minimum speed of 8 mbps	31%	90%	NITA-U reporting	Up scaled use of phones and computers	NITA-U All MDAs and Local Governments Private sector General Public
Pillar 3: Cyber Security, Data Protection and Piracy	3.1 Building appropriate cyber security and data protection capabilities	% of entities with adequate and relevant capacity to counter any attacks and data piracy	10%	75%	NITA-U reporting	Enhanced vigilance of the public on occurrences of cybercrime and the forms it presents itself as well as its threats	NITA-U All MDAs and Local Governments Private sector General Public
		Enhanced entity investment in open-source and cloud technology to ensure safety and privacy	Not available	90%	Reports from sector MDAs and LGs	Deliberate investment and enforcement to ensure broader use of cloud and open-source technology	**NITA-U** MoICT&NG
	3.2 Enhanced security of digital on-line services	% Reduction in the number of incidences of security breached as outlined by the ITU-Global cyber security index	Not available	60%	NITA-U reporting	Government adopts and routines reports against targets under the ITU-Global cybersecurity index	NITA-U ISO and ECO Interpol All MDAs and Local Governments Private sector General Public

Pillar	Strategic Intervention	Outcome Indicator	Baseline Value	Target by 2030	Means of Verification	Risks and Assumptions	Responsibility Centre
		% of public in compliance with National Information Security Framework	Not available	90%	NITA-U reporting	Government adopts and routines reports against targets under the National Information Security framework	NITA-U ISO and ECO Interpol All MDAs and Local Governments Private sector General Public
	3.3 Ensure protection of privacy of individual and personal data	% reduction in unauthorized access of individual and personal data	Not available	Reduction of 70%	NITA-U reporting	Deliberate investment and enforcement to ensure broader use of cloud and open-source technology	**NITA-U** MoICT&NG
		No. of all entities in compliance with data protection and privacy framework	Not available	90%	NITA-U reporting	Capacity is elevated within MDAs, LGs and the non-state actors to comply with data protection and privacy networks	NITA-U ISO and ECO Interpol All MDAs and Local Governments Private sector General Public
	3.4 Enhanced monitoring, enforcement and compliance to cybersecurity and data protection standards	Attain the rank of 60 by the national cyber security index (NCSI)	50.5	Rank of 60	NITA-U reporting	Capacity is elevated within MDAs, LGs and the non-state actors to comply with data protection and privacy networks	NITA-U ISO and ECO Interpol All MDAs and Local Governments Private sector General Public
Pillar 4 Digital Skills	4.1 Develop and implement a national digital skills formation framework	Digital literacy score (%)	20%	50%	MoES reports Directorate of Industrial Training reports	Deliberate and strategic investments on needs-based ICT skills formation as identified by various sectors for fit-for-purpose skilling	MoICT&NG MoES DIT
		Improved spectrum of digital skills through enhanced	Low Rating	Medium Scale Rating	MoES reports	Deliberate and strategic investments on	Ministry of Education and Sports

Pillar	Strategic Intervention	Outcome Indicator	Baseline Value	Target by 2030	Means of Verification	Risks and Assumptions	Responsibility Centre
		curricula and pedagogy including for persons with special needs			Directorate of Industrial Training reports	needs-based ICT skills formation as identified by various sectors for fit-for-purpose skilling	
		Attain the rank of 5.5 of the ICT Development Index (IDI)	2.29	5.5	MoICT&NG	Deliberate and strategic investments on needs-based ICT skills formation as identified by various sectors for fit-for-purpose skilling	MoICT&NG Ministry of Education and Sports Ministry of Local Government NITA-U Non-state actors
		ICT directly created jobs	30,000	3,000,000	Manpower surveys	Support is provided for massive public ICT awareness and sensitization campaigns	**NITA-U** Ministry of Public Service OPM MoICT&NG MDAs and LGs
Pillar 5: Innovation and Entrepreneurship	5.1 Development of an ecosystem that promotes development and commercialization of local ICT products and solutions	Number of ICT innovation products developed and commercialized	72	400	URSB NITA-U	Government supports wider commercialization of ICT products and innovation trials, incubation and roll-out	URSB NITA-U
		Number of ICT innovations, Patents and copyrights registered by WIPO by the end of the year 2040	2	100	URSB NITA-U	Government supports innovators and inventors to patent their ICT innovations, productions and solutions	URSB NITA-U
	5.2 Establishment of a common platform/government test lab to promote development of centers	Development of a digital center of excellence in the productive centers of the country	4	12	NPA reporting UIA NITA-U MoICT&NG	Aligned to NDP Government strategically invests in centers of excellence aimed at	**NITA-U** NPA OPM MoICT&NG MDAs

Pillar	Strategic Intervention	Outcome Indicator	Baseline Value	Target by 2030	Means of Verification	Risks and Assumptions	Responsibility Centre
	of excellence for standardized e-solutions for entrepreneurial development					standardization and roll out of digital solutions suitable to various needs and local contexts	LGs Private sector and NGOs/CSOs
		Enhance digital literacy in Uganda among the urban and rural poor (**measured by the digital inclusiveness score**)	51%	70%	All MDA reporting on ICT literacy	All efforts and concerted around ensuring literacy for all on ICT and its use	All of Government and the General Public
		Promote ICT utilization in communities with a particular focus on practical user-friendly digital applications	25%	50%	All MDA reporting on ICT literacy	All efforts and concerted around ensuring literacy for all on ICT and its use	All of Government and the General Public
		Strengthened partnerships for knowledge sharing and device penetration	Not available	60%	All MDA reporting on ICT literacy	All efforts and concerted around ensuring literacy for all on ICT and its use	All of Government and the General Public

Annex 2: Cost implementation Matrix

DIGITAL UGANDA VISION Objectives, Strategic interventions	Outcomes	No of units	unit cost (000)	2023/24 (000)	2024/25 (000)	2025/26 (000)	2026/27 (000)	2027/28 (000)	2028/29 (000)	2029/30 (000)	2030/31 (000)	Total (000)
Pillar 1: Digital Infrastructure and connectivity												
Coordinate (cross and within countries, within government and private sector) planning, acquisition and deployment of sharing of data through integrated ICT infrastructure and systems	% of parishes with broadband connectivity	10,595	200,000	264,800,000	264,800,000	264800000	264800000	264800000	264800000	264800000	264800000	2,119,000,000
	% of district headquarters connected to the national broadband infrastructure	147	250,000	4,593,750	4,593,750	4593750	4593750	4593750	4593750	4593750	4593750	36,750,000
	% of all MDAs and districts sharing data	100	100,000	2,000,000	2,000,000	1000000	1000000	1000000	1000000	1000000	1000000	10,000,000
	% connectivity for all MDAs	100	250,000	3,125,000	3,125,000	3125000	3125000	3125000	3125000	3125000	3125000	25,000,000
	% of MDAs, LGs reached with infrastructure to protect them from cyber attacks	70	300,000	3,000,000	3,000,000	3000000	3000000	3000000	3000000	1500000	1500000	21,000,000
	Increased regional, international coordination on cyber security management	70	300,000	3,000,000	3,000,000	3000000	3000000	3000000	3000000	1500000	1500000	21,000,000
	% of systems on cloud technology	80	200,000	2,000,000	2,000,000	2000000	2000000	2000000	2000000	2000000	2000000	16,000,000
	Increased investment in modern digital skilling infrastructure	8	300,000	300,000	300,000	300000	300000	300000	300000	300000	300000	2,400,000
Pillar Total				**282,818,750**	**282,818,750**	**281,818,750**	**281,818,750**	**281,818,750**	**281,818,750**	**278,818,750**	**278,818,750**	**2,251,150,000**

DIGITAL UGANDA VISION Objectives, Strategic interventions	Outcomes	No of units	unit cost (000)	2023/24 (000)	2024/25 (000)	2025/26 (000)	2026/27 (000)	2027/28 (000)	2028/29 (000)	2029/30 (000)	2030/31 (000)	Total (000)
Pillar 2: Digital Services												
Strengthen governance of digital services to ensure security, inclusion and interoperability of digital systems and local production of key digital service products	Enhanced regulation and enforcement of legislation on digitalization	10	200,000	400,000	400,000	200,000	200,000	200,000	200,000	200,000	200,000	2,000,000
	% of transactions conducted through the shared public service delivery system	67	150,000	1,256,250	1,256,250	1,256,250	1,256,250	1,256,250	1,256,250	1,256,250	1,256,250	10,050,000
	% increased transactions on automated end-to-end government business processes	20	150,000	300,000	300,000	300,000	300,000	300,000	300,000	600,000	600,000	3,000,000
Promote access and utilization of Digital Services through regulation against counterfeits	Reduction of counterfeit digital products	10	120,000	120,000	120,000	120,000	120,000	120,000	120,000	240,000	240,000	1,200,000
Facilitate access to and utilization of e-Governance services including e-cities	% of citizens accessing e-services online	50	100,000	500,000	500,000	500,000	500,000	500,000	500,000	1,000,000	1,000,000	5,000,000
	% of all urban authorities beginning with cities supported to implement e-government systems	50	250,000	2,500,000	2,500,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	12,500,000
Promote citizens awareness engagement and participation	Enhanced citizens participation and inclusion	50	50,000	500,000	500,000	250,000	250,000	250,000	250,000	250,000	250,000	2,500,000
Promote affordability of communication services through	Unit cost of a low entry smart phone (UGX)	1000	500	100,000	100,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000

DIGITAL UGANDA VISION Objectives, Strategic interventions	Outcomes	No of units	unit cost (000)	2023/24 (000)	2024/25 (000)	2025/26 (000)	2026/27 (000)	2027/28 (000)	2028/29 (000)	2029/30 (000)	2030/31 (000)	Total (000)
reduced turn-around time and cost	Reduced Cost of a computer	10,000	150,000	300,000,000	300,000,000	150,000,000	150,000,000	150,000,000	150,000,000	150,000,000	150,000,000	1,500,000,000
	National Broadband coverage with a minimum speed of 8 mbps	100	100,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	2,000,000	2,000,000	10,000,000
Pillar Total				**306,676,250**	**306,676,250**	**154,926,250**	**154,926,250**	**154,926,250**	**154,926,250**	**156,846,250**	**156,846,250**	**1,546,750,000**
Pillar 3: Cyber Security, Data Protection and Privacy												
Building appropriate cyber security and data protection capabilities	% of entities with adequate and relevant capacity to counter any attacks and data piracy	100	40,000	400000	400000	400,000	400000	800000	400000	400000	800000	4,000,000
	Enhanced entity investment in open-source and cloud technology to ensure safety and privacy	100	30,000	300000	300000	600,000	600000	300000	300000	300000	300000	3,000,000
Enhanced security of digital on-line services	% Reduction in the number of incidences of security breached as outlined by the ITU-Global cyber security index	100	50,000	1000000	1000000	500,000	500000	500000	500000	500000	500000	5,000,000
Ensure protection of privacy of individual and personal data	% reduction in unauthorized access of individual and personal data	20	300,000	600000	600000	600,000	600000	600000	1200000	600000	1200000	6,000,000

DIGITAL UGANDA VISION Objectives, Strategic interventions	Outcomes	No of units	unit cost (000)	2023/24 (000)	2024/25 (000)	2025/26 (000)	2026/27 (000)	2027/28 (000)	2028/29 (000)	2029/30 (000)	2030/31 (000)	Total (000)
	No. of all entities in compliance with data protection and privacy framework	20	20,000	40,000	40,000	40,000	40,000	40,000	80000	40000	80000	400,000
Pillar Total				**2,340,000**	**2,340,000**	**2,140,000**	**2,140,000**	**2,240,000**	**2,480,000**	**1,840,000**	**2,880,000**	**18,400,000**
Pillar 4: Digital Skills												
Develop and implement a national digital skills formation framework	Improved spectrum of digital skills through enhanced curricula and pedagogy including for persons with special needs	50000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	1,500,000,000
	Infrastructure for skilling for digital skilling across the government	10000	50,000	62,500,000	62,500,000	62,500,000	62,500,000	62,500,000	62,500,000	62,500,000	62,500,000	500,000,000
	Increased ICT directly created jobs	100,000	2,500	31,250,000	31,250,000	31,250,000	31,250,000	31,250,000	31,250,000	31,250,000	31,250,000	250,000,000
Pillar Total				**31,280,000**	**31,280,000**	**31,280,000**	**31,280,000**	**31,280,000**	**31,280,000**	**31,280,000**	**31,280,000**	**2,250,000,000**
Pillar 5: Innovation and Entrepreneurship												
Development of an ecosystem that promotes development and commercialization of local ICT products and solutions	Number of ICT innovation products developed and commercialized	10	50,000	100,000	100,000	50,000	50,000	50,000	50,000	50,000	50,000	500,000
	Number of ICT innovations, Patents and copyrights registered by WIPO by the end of the year 2040	10	60,000	60,000	60,000	60,000	60,000	60,000	60,000	120,000	120,000	600,000

DIGITAL UGANDA VISION Objectives, Strategic interventions	Outcomes	No of units	unit cost (000)	2023/24 (000)	2024/25 (000)	2025/26 (000)	2026/27 (000)	2027/28 (000)	2028/29 (000)	2029/30 (000)	2030/31 (000)	Total (000)
Establishment of a common platform/government test lab to promote development of centers of excellence for standardized e-solutions for entrepreneurial development	Development of digital center of excellence in the productive centers of the country	8	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	1,600,000
	Enhanced digital literacy in Uganda among the urban and rural poor (**measured by the digital inclusiveness score**)	100	90,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	1,125,000	9,000,000
	Promoted ICT utilization in communities with a particular focus on practical user-friendly digital applications	10	570,000	1,140,000	1,140,000	570,000	570,000	570,000	570,000	570,000	570,000	5,700,000
	Strengthened partnerships for knowledge sharing and device penetration	10	55,000	55,000	55,000	110,000	110,000	55,000	55,000	55,000	55,000	550,000
Pillar Total				**2,680,000**	**2,680,000**	**2,115,000**	**2,115,000**	**2,060,000**	**2,060,000**	**2,120,000**	**2,120,000**	**17,950,000**
GRAND TOTAL				**625,795,000**	**625,795,000**	**472,280,000**	**472,280,000**	**472,325,000**	**472,565,000**	**470,905,000**	**471,945,000**	**6,084,250,000**

The total cost imperative to digitalize Uganda by 2040 will require a first phase financing up to 2030 of UGX 6.084 Trillion for 8 years leading up to the end of NDP IV

Vision for A Digital Uganda

2040

Digitalization for Uganda's Socio-economic Transformation